Reducing Greenhouse Gas Emissions from Transportation

Opportunities in the Northeast and Mid-Atlantic

Technical Appendix

State GHG Reduction Goals in the TCI Region

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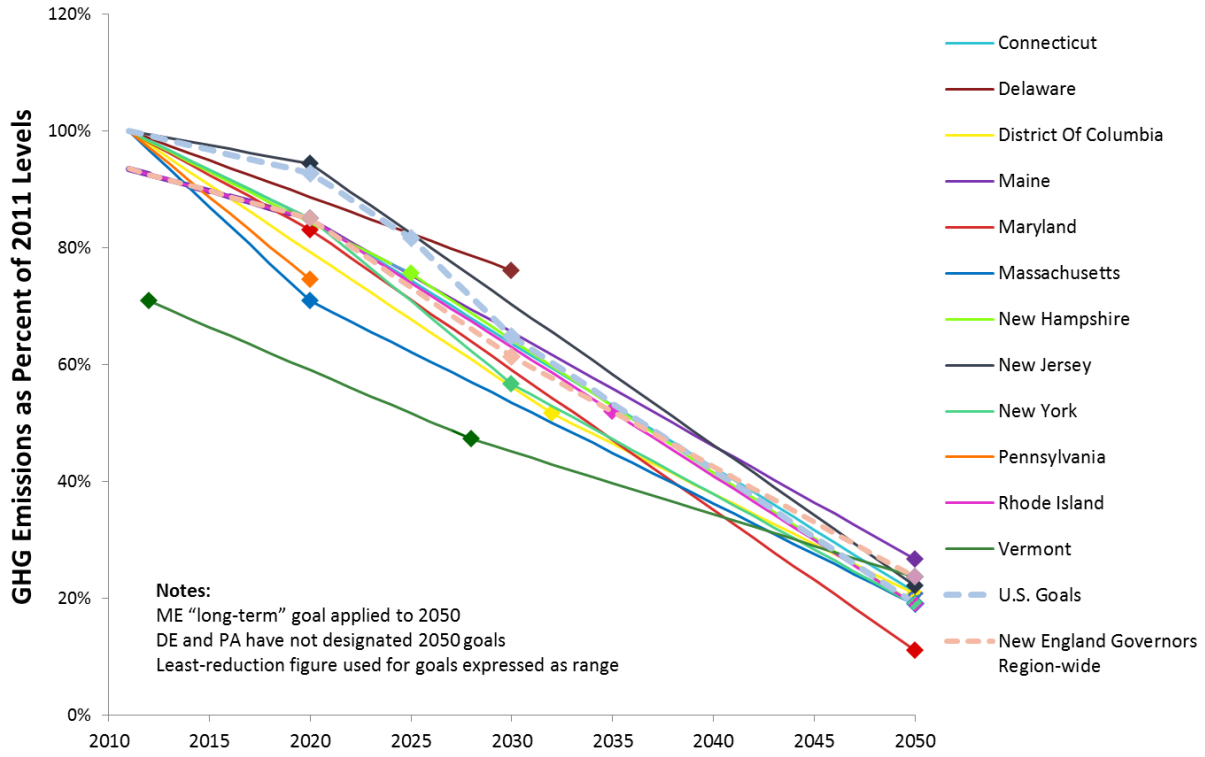
Summary Table: Energy- and Climate-Related Goals of the Transportation and Climate Initiative States

	Economy-wide GHG Emissions Goals		Transportation-related Goals or Plans
	Goal Source	Goal Level	
CT	2013 Comprehensive Energy Strategy, affirming goals in the Connecticut Global Warming Solutions Act (2008)	10% below 1990 by 2020 80% below 2001 by 2050	2013 Comprehensive Energy Strategy identifies transportation strategies projected to achieve 37% reductions from BAU by 2050.
DE	2015 Climate Framework for Delaware	30% below 2008 by 2030 (proposed)	Once goal is approved, DNREC to develop implementation plan to achieve economy-wide target.
DC	A Vision for a Sustainable DC (2012)	50% below 2012 by 2032 80% below 2012 by 2050	2012 Vision sets goal that 75% of all trips originating in DC be by walking, biking, or transit by 2032.
MA	Clean Energy and Climate Plan for 2020 (2010), pursuant to the Global Warming Solutions Act (2008)	25% below 1990 by 2020 80% below 1990 by 2050	Massachusetts' 2010 Clean Energy Plan calls for 30.4% of the 2020 statewide reduction goal to come from transportation. [2009 MA transportation emissions equaled 39% of economy-wide emissions.]
MD	Greenhouse Gas Emissions Reduction Act (2009)	25% below 2006 by 2020 90% below 2006 by 2050 (voluntary)	2015 Update to GGRA Plan (published October 2015) projects that 28% of overall emissions reductions to meet the 2020 goal will come from the transportation sector. [2006 Maryland transportation emissions (on- and off-road) equaled approximately one-third of economy-wide emissions.]
ME	Act to Provide Leadership in Addressing the Threat of Climate Change (2003)	10% below 1990 by 2020 75-80% below 2003 long-term	2011 law sets goal of reducing economy-wide oil use by at least 30% below 2009 levels by 2030 and 50% by 2050.
NH	New Hampshire Climate Action Plan (2009)	20% below 1990 by 2025 80% below 1990 by 2050	2009 Climate Action Plan recommends land use and transportation policies that could achieve transportation-sector reductions of GHG emissions of 5.01 $MMTCO_2e$ per year by 2025 and 7.91 $MMTCO_2e$ per year by 2050.
NJ	Global Warming Response Act (2007)	Return to 1990 by 2020 80% below 2006 by 2050	2009 Recommendations Report identifies policies that would achieve transportation sector reductions of 12.2 $MMTCO_2e$ per year by 2020.
NY	2015 State Energy Plan; Exec. Order No. 2 (2011); Exec. Order No. 24 (2009)	10% below 1990 by 2020 40% below 1990 by 2030 80% below 1990 by 2050	2015 State Energy Plan set an economy-wide GHG reduction goal of 40% below 1990 levels by 2030. The State Energy Plan calls for regional collaboration, including working through TCI, to reduce transportation-sector GHG emissions (currently 34% of state GHG emissions) and capture value from reduced spending on imported petroleum fuels. The Plan calls for additional deployment of EVs and EV infrastructure to meet 2018 goals.
PA	Pennsylvania Climate Change Action Plan (2009)	30% below 2000 by 2020	2009 Climate Action Plan identifies transportation and land use strategies that would achieve GHG reductions of 6.62 $MMTCO_2e$ annually by 2020.
RI	Resilient Rhode Island Act (2014); Rhode Island Greenhouse Gas Action Plan (2002)	10% below 1990 by 2020 45% below 1990 by 2035 80% below 1990 by 2050	2012 Long-Range Transportation Plan articulates qualitative goal of reducing GHG emissions and VMT.

	Economy-wide GHG Emissions Goals		Transportation-related Goals
	Goal Source	Goal Level	
VT	Act No. 168 (S.259) (2006) 2011 Comprehensive Energy Plan	50% below 1990 by 2028 75% below 1990 by 2050 Renewables to account for 90% of energy use by 2050	2015 Update to 2011 Comprehensive Energy Plan maintains a number of goals for transportation sector in support of 90% economy-wide renewables goal, including: Keep VMT annual growth rate to 1.5%, and VMT per capita level at 2011 baseline; Ensure that 25% of all vehicles are powered by renewable sources by 2030; Specific goals for increasing transit, rideshare, bicycle and pedestrian, and rail mode share; reducing SOV.

State Goals Relative to 2011 Baseline

To better compare the individual GHG emission reduction goals of the TCI jurisdictions, which have articulated individual state goals as reductions from different baseline years (ranging from 1990 to 2012), the state goals depicted below are normalized to TCI region transportation-sector emissions for 2011.[1] Goal pathways are linearly interpolated between any two state goal points. TCI region 2011 emissions were used as a starting point, with the exception of three states that had goals articulated for years 2009-2012: Maine, Rhode Island, and Vermont.



[1] TCI region transportation-sector emissions figure for 2011 was calculated using data from the World Resources Institute, Climate Analysis Indicators Tool (CAIT) 2.0, http://cait2.wri.org

Energy- and Climate-Related Goals and Plans of the Transportation and Climate Initiative States

Connecticut

- The 2008 Connecticut *Global Warming Solutions Act* set mandatory economy-wide GHG emission reduction targets of at least 10 percent below 1990 levels by 2020 and at least 80 percent below 2001 levels by 2050.[2]
- On April 22, 2015, Connecticut Gov. Dannel P. Malloy issued Executive Order No. 46, creating the Governor's Council on Climate Change (GC3). The Council is charged with developing interim statewide greenhouse gas reduction targets for years between 2020 and 2050 and identifying short- and long-term statewide strategies to achieve the necessary reductions.[3]
- In February 2013, the Connecticut Department of Energy and Environmental Protection issued the *Comprehensive Energy Strategy for Connecticut*, which outlines strategies to reduce energy use in the transportation sector (as well as the electricity, natural gas, energy efficiency, and industrial sectors). The transportation strategy envisions that by 2050, 53 percent of vehicles in the state will be high efficiency/alternate fuel vehicles, and also places a high priority on vehicle miles traveled (VMT) reduction strategies.[4] The report estimates that the state's transportation-sector strategies could result in a 37 percent reduction below a "no-policy" baseline in transportation-sector GHG emissions by 2050.[5]
- Connecticut's 2009 Long-Range Transportation Plan*, Connecticut on the Move*, identifies strategies and actions to meet the state's GHG goals. The plan notes that the transportation sector is responsible for 40 percent of the state's GHG emissions and mentions the economy-wide goals set by the 2008 legislation.[6]

[2] CONN. GEN. STAT. § 22a-200a(a) (2010).
[3] CONN. EXEC. ORDER No. 46 (2015), http://www.ct.gov/deep/cwp/view.asp?a=4423&q=568878&deepNav_GID=2121.
[4] Connecticut Department of Energy and Environmental Protection, 2013 Comprehensive Energy Strategy for Connecticut, 182 (2013), http://www.ct.gov/deep/lib/deep/energy/cep/2013_ces_final.pdf.
[5] *Id.* at 189.
[6] Connecticut Department of Transportation, Connecticut on the Move: Strategic Long-Range Transportation Plan 2009-2035, 17 (2009), http://cdm128501.cdmhost.com/cdm/singleitem/collection/p128501coll2/id/138489/rec/10.

Delaware

- Delaware Gov. Jack Markell released the *Climate Framework for Delaware* on March 2, 2015, proposing a GHG emission reduction goal of 30 percent reduction from 2008 levels by 2030.[7] The Climate Framework provides recommendations for adapting to climate impacts in the state. According to the Framework, the Delaware Department of Natural Resources and Environmental Control (DNREC) will develop an implementation plan based on the approved emission reduction goal.[8]
- The Climate Framework was released pursuant to Gov. Markell's Executive Order No. 41, which established the Governor's Committee on Climate and Resiliency and charged the committee with developing the plan.[9]
- Gov. Markell's 2010 Executive Order 18, *Leading By Example Towards A Clean Energy Economy & Sustainable Natural Environment*, established goals for state agencies in several sectors. For the transportation sector, the order calls on all agencies to improve air quality and reduce the operating expenses from state vehicle use.[10]

District of Columbia

- In July 2011, the District of Columbia launched the Sustainable DC planning initiative, led by the District Department of Energy & Environment[11] and the Office of Planning. The District of Columbia released its first sustainability plan in April 2012, *A Vision for a Sustainable DC*. The plan set broad policy goals, including reducing citywide GHG emissions 50 percent by 2032 and 80 percent by 2050, cutting citywide energy use 50 percent by 2032, and shifting transportation modes so that 75 percent of all trips are walking, biking, or transit by 2032.[12]

[7] Delaware Department of Natural Resources and Environmental Control, Climate Framework for Delaware (2014), http://www.dnrec.delaware.gov/energy/Pages/Climate-Framework.aspx
[8] *Id.* at 21.
[9] Del. Exec. Order No. 41 (Sep. 12, 2013), http://governor.delaware.gov/orders/EO041.pdf.
[10] Del. Exec. Order No. 18 (Feb. 17, 2010), http://governor.delaware.gov/orders/exec_order_18.shtml.
[11] Formerly the District Department of the Environment.
[12] District of Columbia Office of Planning and District Department of Energy & Environment, A Vision for a Sustainable DC, 17, 19, 25 (2012), http://sustainable.dc.gov/sites/default/files/dc/sites/sustainable/publication/attachments/sustainable%20DC%20Vision%20Plan%202.2.pdf. The plan does not specify a baseline, but implies that reductions are relative to the date of publication in 2012.

Maine

- The 2003 *Act to Provide Leadership in Addressing the Threat of Climate Change* established statewide GHG emission reduction targets of a return to 1990 levels by 2010, 10 percent below 1990 levels by 2020, and 75-80 percent below 2003 levels in the long term.[13]
- The Act also requires the Maine Department of Environmental Protection to evaluate the state's progress towards meeting those reduction goals and submit a report every two years.[14] The *Fifth Biennial Report on Progress toward Greenhouse Gas Reduction Goals*, released in 2014, affirms that the state met its goal of reducing greenhouse gas emissions to 1990 levels by 2010, and says the state is continuing a downward trend in GHG emissions that puts it on track to meet its medium-term goal of reducing GHG emissions to 10 percent less than 1990 levels by 2020.[15] The report also recommends that future mitigation strategies "focus on reducing petroleum consumption in the residential, commercial, and transportation sectors."[16]
- In 2011, the Maine Legislature passed *An Act to Improve Maine's Energy Security*, which sets goals for reducing economy-wide oil use in Maine by at least 30 percent below 2009 levels by 2030 and 50 percent by 2050.[17]
- The 2004 *Climate Action Plan for Maine* outlines a number of strategies to achieve the state's GHG emission reduction targets, including strategies to reduce VMT. Although no quantitative goals were set for VMT, the report notes that a 3-10 percent VMT reduction was probably achievable based on the actions proposed.[18]

Maryland

- The 2009 *Greenhouse Gas Emissions Reduction Act* (GGRA) established a GHG emission reduction target for the state (for all sectors except manufacturing) of 25 percent below 2006 levels by 2020. The legislation also required that a task force create and submit a plan for achieving this target. The 2020 target will sunset on December 31, 2016 if no further action is taken by the state's General Assembly.[19]

[13] ME. REV. STAT. tit. 38, §574-5 79 (2003).
[14] *Id.*
[15] Maine Department of Environmental Protection, Fifth Biennial Report on Progress toward Greenhouse Gas Reduction Goals, 2 (2014), http://www.maine.gov/tools/whatsnew/attach.php?id=611577&an=1.
[16] *Id.* at 1.
[17] ME. REV. STAT. tit. 2 §9, sub-§3(C).
[18] Maine Department of Environmental Protection, A Climate Action Plan for Maine 2004, 23, 68 (2004), http://maineghg.raabassociates.org/Articles/MaineClimateActionPlan2004Volume%201.pdf.
[19] MD. CODE ANN. Envir. §§ 2-1201 to 2-1211 (2012).

- As required by the GGRA, the Maryland Department of the Environment (MDE) submitted a report on progress toward the 2020 goal in October 2015. The report indicates the state is projected meet, and even exceed, the 2020 goal, and that its GHG emission reduction programs are creating benefits to the economy and jobs.[20] Approximately 28 percent of overall emissions reductions to meet the 2020 goal are projected to come from the transportation sector.[21] The report also recommends that the state "move beyond 2020 by adopting a 'next step' of incremental progress towards the deeper, science-based reductions needed by 2050."[22]
- The Maryland Commission on Climate Change, originally created by a 2007 Executive Order and renewed by a 2014 Executive Order and state legislation in 2015, is tasked with providing annual reports and recommendations to the Governor and the General Assembly.[23] As part of the process of preparing to submit its 2015 report, the Commission voted unanimously at its Oct. 22, 2015, meeting to recommend maintaining the 2020 target and to establish a 2030 goal of 40 percent reductions from 2006 levels.[24] (At the time of publication, the Commission had not yet issued its final report.)
- The 2009 Greenhouse Gas Emissions Reduction Act also includes a finding that the state "has the ingenuity" to address global warming by achieving economy-wide emission reductions of 90 percent from a 2006 baseline by 2050.[25] This 2050 level of reduction was identified as a long-term goal in the 2008 *Climate Action Plan*, developed by the Maryland Commission on Climate Change.[26]

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[20] Maryland Department of the Environment, The 2015 Greenhouse Gas Emissions Reduction Act Plan Update, 207 (2015), http://www.mde.state.md.us/programs/Air/ClimateChange/Documents/2015GGRAPlanUpdate/GGRA%20Report%20FINAL%20(11-2-15).pdf

[21] *Id.* at 81.

[22] *Id.* at 207.

[23] MD. ENVIR. CODE ANN. §§ 2-1301 to 2-1306; Executive Order issued to expand Commission on Climate Change, State of Maryland Climate Change website, http://climatechange.maryland.gov/news-events/governor-omalley-issues-executive-order-to-expand-commission-on-climate-change/; Maryland Commission on Climate Change, Maryland Department of the Environment website, http://www.mde.state.md.us/programs/Marylander/Pages/mccc.aspx.

[24] Meeting Minutes, Oct. 29, 2015 Meeting of the Maryland Commission on Climate Change, http://www.mde.state.md.us/programs/Marylander/Pages/mccc.aspx (noting unanimous vote in favor of future goal language as it appears in concept paper); *see* Timothy B. Wheeler, Deeper Climate Pollution Cuts Urged for Maryland, Balt. Sun (Oct. 29, 2015), http://www.baltimoresun.com/features/green/blog/bs-md-climate-emission-goal-20151029-story.html.

[25] MD. CODE ANN. Envir. § 2-1201(4) (2012).

[26] Maryland Commission on Climate Change, Climate Action Plan, Ch. 4 at 7 (2008), http://www.mde.state.md.us/programs/Air/ClimateChange/Documents/www.mde.state.md.us/assets/document/Air/ClimateChange/Chapter4.pdf.

Massachusetts

- The 2008 *Global Warming Solutions Act* requires an 80 percent reduction in GHG emissions below 1990 levels by 2050.[27] The Act required the Massachusetts Secretary of Energy and Environmental Affairs to set an interim 2020 emission reduction target of between 10 percent and 25 percent below 1990 levels, and also requires targets to be set for 2030 and 2040.[28] Massachusetts' 2010 Clean Energy Plan established the state's 2020 GHG emissions reduction target to be 25 percent below 1990 levels, the most ambitious target possible within the range identified by the 2008 law.[29]

- Massachusetts' 2010 Clean Energy Plan estimates that the portfolio of proposed transportation policies will achieve a 7.6 percent reduction from the state's projected business-as-usual emissions levels.[30] The Executive Office of Energy and Environmental Affairs released a Strategic Plan for 2013-2015 to guide overall energy policy, which incorporated the 25 percent GHG emission reduction goal and outlined metrics that could be used to evaluate success.[31] In 2015, the state released the *Global Warming Solutions Act 5-Year Progress Report*, which reported on progress in all sectors towards the 2020 goal.[32]

[27] 2008 MASS. ACTS 1154-1161, 1157.
[28] *Id*.
[29] Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, Massachusetts Clean Energy and Climate Plan for 2020, 1 (2010), http://www.mass.gov/eea/docs/eea/energy/2020-clean-energy-plan.pdf.
[30] *Id*. at 91.
[31] Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, Strategic Plan 2013-2015, 10 (2013), http://www.mass.gov/eea/docs/eea/eea-2013-2015-strategic-plan-17-january-2013.pdf.
[32] Commonwealth of Massachusetts Executive Office of Energy and Environmental Affairs, Global Warming Solutions Act 5-Year Progress Report (2015), http://www.mass.gov/eea/docs/eea/gwsa/ma-gwsa-5yr-progress-report-1-6-14.pdf.

- In 2010, the Massachusetts Department of Transportation (MassDOT) launched GreenDOT, a comprehensive policy to help meet the GHG reduction targets set by the state's *Global Warming Solutions Act* by reducing 2.1 million tons of transportation-sector GHG emissions by 2020 (7.3 percent reduction from economy-wide 1990 levels).[33] The policy also aims to promote sustainability in the transportation sector, and applies to the full range of the agency's activities, from strategic planning to construction and system operations. MassDOT has set targets to achieve the transportation-sector emission reduction goal from three groups of strategies:
    - 5.3 percent reduction by 2020 from construction and operations, more efficient fleets, travel demand management programs, eco-driving, and mitigation of development projects;
    - 0.7 percent reduction by 2020 from promotion of healthy transportation modes of walking, bicycling and public transit; and
    - 1.3 percent reduction by 2020 from support of smart growth development.[34]
- In December 2012, MassDOT released the final implementation plan for GreenDOT.[35] In addition to GreenDOT, MassDOT has set a mode shift goal of tripling the share of travel in Massachusetts by bicycling, transit and walking.[36]

New Hampshire

- The 2009 *New Hampshire Climate Action Plan* sets forth an overall goal of reducing GHG emissions 20 percent below 1990 levels by 2025 and 80 percent below 1990 levels by 2050. The plan also identifies 67 policy recommendations that could achieve these goals.[37] Many of these policy recommendations are related to reducing VMT through a combination of land use and transportation planning measures. The Climate Action Plan projects that if the recommendations were put into action, the transportation section could reduce GHG emissions 5.01 $MMTCO_2e$ per year by 2025 and 7.91 $MMTCO_2e$ per year by 2050 below the 'business as usual' projection.[38]

[33] Massachusetts Department of Transportation, GreenDOT Policy Directive, No. P-10-002, at 3 (2010), http://www.massdot.state.ma.us/portals/0/docs/P-10-002.pdf.
[34] *Id.*
[35] Massachusetts Department of Transportation, GreenDOT Implementation Plan (2012), http://www.massdot.state.ma.us/Portals/0/docs/GreenDOT/finalImplementation/GreenDOTImplementationPlan122812.pdf.
[36] Massachusetts Department of Transportation, MassDOT Announces Mode Shift Goal to Triple the Share of Travel in Massachusetts by Bicycling, Transit and Walking, http://www.massdot.state.ma.us/main/tabid/1075/ctl/detail/mid/2937/itemid/223/MassDOT-Announces-Mode-Shift-Goal-to-Triple-the-Share-of-Travel-in-Massachusetts-by-Bicycling--Transit-and-Walking-.aspx.
[37] New Hampshire Climate Change Policy Taskforce, The New Hampshire Climate Action Plan, 5 (2009).
[38] Id. at 25.

New Jersey

- The 2007 *Global Warming Response Act* (A3301) limits the level of statewide GHG emissions and GHG emissions from electricity generated outside the state but consumed in the state to 1990 levels by 2020 and to 80 percent below 2006 levels by 2050.[39] These targets were previously set in Executive Order 54 (2007).[40]

- Following the passage of the *Global Warming Response Act*, in 2009 New Jersey released a report titled *Meeting New Jersey's 2020 Greenhouse Gas Limit: New Jersey's Global Warming Response Act Recommendations Report*. This report recommends actions to take in order to achieve the 2020 GHG target, and suggests indicators that could be used to measure the effectiveness of implemented policies. To achieve New Jersey's 2020 statewide GHG limit, the state would need to reduce on-road transportation-sector emissions by 20 percent from the business-as-usual projection, to approximately 40 $MMTCO_2e$ per year.[41] If all the recommended policies in the Recommendations Report were implemented, it was projected that the transportation sector could achieve a 12.2 $MMTCO_2e$ annual reduction from transportation strategies–including the promotion of low carbon fuels, reduction of VMT, and increase in transit ridership–by 2020.[42]

[39] N.J.P.L. 2007, CHAPTER 112, approved July 6, 2007.
[40] N.J. EXEC. ORDER No. 54 (2007), http://www.state.nj.us/infobank/circular/eojsc54.htm.
[41] New Jersey Department of Environmental Protection, Meeting New Jersey's 2020 Greenhouse Gas Limit: New Jersey's Global Warming Response Act Recommendations Report, 60 (2009), http://www.nj.gov/globalwarming/home/documents/pdf/njgwra_final_report_dec2009.pdf.
[42] *Id.* at 83.

New York

- New York's 2015 State Energy Plan set an economy-wide goal of reducing GHG emissions 40 percent below 1990 levels by 2030. The State Energy Plan emphasizes the importance of reducing emissions from the transportation sector (34 percent of the state's GHG emissions) in order to meet the state's economy-wide 2030 goal. The plan calls for collaboration with neighboring states to advance policies that capture value from reduced spending on imported petroleum fuels and "transform the transportation sector," including working through the Transportation and Climate Initiative.[43] The State Energy Plan also calls for the continuation of programs that accelerate the adoption of clean fuel vehicles, including the Clean Fleets NY program for state agency procurement and the multi-state Zero-Emission Vehicle Memorandum of Understanding (ZEV MOU). The Plan promotes alternative vehicle infrastructure through the ChargeNY initiative, which has a goal of 40,000 PEVs and 3000 PEV charging stations by 2018. The State Energy Plan also calls for additional initiatives to improve public transit efficiency and for increased investment in transportation demand management programs to reduce emissions.[44]
- In 2011, New York Gov. Andrew M. Cuomo continued a 2009 executive order that established an economy-wide goal of reducing GHG emissions 80 percent by 2050 from 1990 levels.[45]

Pennsylvania

- Pennsylvania's 2009 Climate Change Action Plan recommends a 30 percent reduction in GHG emissions from 2000 levels by 2020.[46] The plan sets out 52 recommended actions towards achieving this goal, including strategies for transit-oriented development and smart growth.[47] The plan projects that if the suggested transportation and land use strategies were implemented, Pennsylvania could reduce GHG emissions by 6.62 $MMTCO_2e$ annually by 2020.[48] Including existing state and federal regulations and programs such as the federal Corporate Average Fuel Economy (CAFE) standards and the Pennsylvania Clean Vehicles Program, Pennsylvania projects it could achieve a reduction of 22.3 $MMTCO_2e$ annually.[49]

[43] New York State Energy Planning Board, The Energy to Lead: 2015 New York State Energy Plan (2015), http://energyplan.ny.gov/Plans/2015
[44] *Id.*
[45] N.Y. EXEC. ORDER NO. 2, N.Y. COMP. CODES R. & REGS. tit. 9, § 8.2 (2011) (Gov. Andrew M. Cuomo continuance of Gov. David A. Patterson executive order, N.Y. EXEC. ORDER NO. 24, N.Y. COMP. CODES R. & REGS. tit. 9, § 7.24 (2009)).
[46] Pennsylvania Department of Environmental Protection, Final Climate Change Action Plan, ExS-5 (2009), http://www.dcnr.state.pa.us/cs/groups/public/documents/document/dcnr_001957.pdf.
[47] *Id.* at ExS-8.
[48] *Id.* at ExS-9.
[49] *Id.* at 1-16.

Rhode Island

- The *Resilient Rhode Island Act*, signed into law in August 2014, established greenhouse gas emission reduction targets of: 10 percent below 1990 levels by 2020, 45 percent below 1990 levels by 2035, and 80 percent below 1990 levels by 2050. The Act created an Executive Climate Change Coordinating Council, which is required to submit a greenhouse gas reduction plan by December 31, 2016.[50]
- In June 2015, Rhode Island released a preliminary draft of *Energy 2035: Rhode Island State Energy Plan*.[51] The draft State Energy Plan puts forward strategies for reducing energy use and emissions from all sectors, including transportation. To achieve Rhode Island's 45 percent emissions reduction goal by 2035, the draft plan estimates the state will need to see a 40 percent reduction in transportation energy use, including at least a five percent reduction in VMT and doubling of public transit ridership.[52]
- The Rhode Island long-range transportation plan, *Transportation 2035*, released in December 2012, states a goal to "reduce emissions of air pollutants and greenhouse gases from mobile sources, and conserve energy by reducing vehicle miles traveled; reducing the number of single occupant vehicle trips; promoting increased usage of high efficiency vehicle technologies; and retaining vegetated buffers."[53] The report also recommends that the goal for VMT be changed to slow the rate of growth of VMT, rather than to reduce VMT, because a reduction may not to be realistic. The report notes that though the increase in greenhouse gas emissions has slowed, there was not adequate progress toward the state's overall goal.[54]
- In 2002, Rhode Island released a *Greenhouse Gas Action Plan*, which set a target of reducing GHG emissions to 1990 levels by 2010 and 10 percent below 1990 levels by 2020.[55] The plan provided 52 prioritized options for reducing greenhouse gases. Several of these options were related to the transportation sector.[56]

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[50] Resilient Rhode Island Act Of 2014, 42 R.I. GEN. LAWS § 6-2-1 (2014) http://webserver.rilin.state.ri.us/BillText/BillText14/HouseText14/H7904A.pdf.

[51] State of Rhode Island: Office of Energy Resources, The Rhode Island State Energy Plan, http://www.energy.ri.gov/energyplan/index.php.

[52] Rhode Island Office of Energy Resources, Energy 2035: Rhode Island State Energy Plan, Preliminary Draft: June 2015, 82 (2015) http://www.planning.ri.gov/documents/LU/energy/Energy2035_All_Preliminary_06032015.pdf.

[53] Rhode Island Statewide Planning Program, Transportation 2035, 5-17 (2012), http://www.planning.ri.gov/documents/trans/LRTP%202035%20-%20Final.pdf.

[54] *Id.* at 1-17.

[55] Rhode Island Greenhouse Gas Stakeholder Process, Rhode Island Greenhouse Gas Action Plan, 3 (2002), http://righg.raabassociates.org/Articles/GHGPlanBody7-19-02FINAL.pdf.

[56] *Id.* at 5.

Vermont

- Vermont's Act 168, passed in 2006, set a state goal of reducing GHG emissions 25 percent from 1990 levels by 2012, 50 percent by 2028, and 75 percent by 2050, if practicable using reasonable efforts.[57] This Act also required the creation and implementation of a Climate Action Plan.[58] The 2007 *Final Report and Recommendations of the Governor's Commission on Climate Change* presented a general list of policies and recommendations.[59]

- In 2011, Vermont released a comprehensive energy plan that set a goal of achieving 90 percent of the state's energy from renewable sources by 2050 (this goal includes the transportation sector).[60] The plan includes a number of additional goals for the transportation sector to reduce petroleum consumption and reduce energy use, including the following:

    - Ensure that 25 percent of all vehicles registered in Vermont are powered by renewable sources by 2030;
    - Improve the combined average fuel economy of the vehicle fleet registered in Vermont to meet the federal CAFE standards currently in effect, or improve it by 5 percent, whichever is greater, by 2025;
    - Increase the number of medium- and heavy-duty vehicles powered by biodiesel or CNG by up to 10 percent by 2030;[61]
    - Keep VMT annual growth rate to 1.5 percent (half of the national average) or less for that portion controlled by the state;
    - Keep VMT per capita level with the 2011 base year, or lower;
    - Increase public transit ridership by 110 percent, to 8.7 million annual trips by 2030;
    - Quadruple passenger rail trips, to 400,000 Vermont-based trips by 2030;
    - Double the amount of rail freight tonnage in the state from 2011 levels by 2030;
    - Reduce share of SOV commute trips by 20 percent by 2030;
    - Double bicycle and pedestrian share of commute trips, to 15.6 percent, by 2030; and
    - Double ride share commute trips, to 21.4 percent of all commute trips, by 2030.[62]

- In September 2015, the Vermont Public Service Department released a public review draft of the 2015 Comprehensive Energy Plan. The draft plan updates many of the transportation-sector objectives set out in the 2011 Comprehensive Energy Plan and proposes additional ambitious climate and energy goals, including:

    - Reducing per capita total energy consumption 15 percent by 2025 and at least 33 percent by 2050;
    - Obtaining 25 percent renewable energy by 2025 and 40 percent by 2035;[63] and
    - Reducing total transportation energy use 20 percent by 2025 from 2015 levels and reducing transportation-sector GHG emissions 30 percent by 2025.[64]

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[57] 10 VT. STAT. ANN. § 578.
[58] *Id*.
[59] Vermont Governor's Commission on Climate Change, Final Report and Recommendations of the Governor's Commission on Climate Change (2007), http://www.anr.state.vt.us/imaging/ANRdocs/secoffice/climatechange/2007OctGCCCFinalRpt.pdf
[60] Vermont Public Service Department, Comprehensive Energy Plan 2011: Vermont's Energy Future, 3 (2011), http://publicservice.vermont.gov/publications/energy_plan/2011_plan.
[61] *Id.* vol. 2 at 281.
[62] *Id.* vol. 2 at 284.
[63] Vermont Public Service Department, 2015 Comprehensive Energy Plan Public Review Draft, 1 (2015),

New England Governors and Eastern Canadian Premiers

- The New England Governors and Eastern Canadian Premiers (NEG/ECP) established a regional climate change program in 2000.[65] The NEG/ECP charged the energy and environment officials in the region with developing a regional action plan to reduce the region's greenhouse gas emissions and help the region adapt to the unavoidable changes created by a changing climate. The NEG/ECP *Climate Change Action Plan*, adopted in 2001, calls for a return to 1990 levels of GHG emissions by 2010 regionally, and a further reduction of 10 percent from 1990 levels by 2020. The region has also set a reduction target of 75-85 percent below 2001 levels by 2050.[66]
- In August 2015, the NEG/ECP passed Resolution 39-1 adopting a 2030 reduction marker range of at least 35 percent to 45 percent below 1990 levels. Resolution 39-1 recognized the importance of "working regionally to increase the effectiveness of collective actions" in reducing emissions.[67]
- The NEG/ECP Climate Change Steering Committee (CCSC) is preparing an inventory of GHG emissions in the region as a basis for assessing its progress in achieving the 2010 target. The CCSC, along with the NEG/ECP Committee on the Environment, is crafting a regional agenda to address climate adaptation issues.[68]

http://publicservice.vermont.gov/publications/energy_plan/2015_plan.

[64] *Id* at 124-125.

[65] New England Governors and Eastern Canadian Premiers, NEG/ECP Climate Change Program – 2012, The New England Governors' Conference website (2012).

[66] New England Governors and Eastern Canadian Premiers, Climate Change Action Plan 6-7 (2001)..

[67] New England Governors and Eastern Canadian Premiers, Resolution 39-1: Resolution Concerning Climate Change (2015), http://www.coneg.org/Data/Sites/1/media/39-1-climate-change.pdf

[68] New England Governors and Eastern Canadian Premiers, NEG/ECP Climate Change Program – 2012, The New England Governors' Conference website (2012), http://negc.org/main/?do=page&id=39.