COMMONWEALTH OF MASSACHUSETTS
SUPREME JUDICIAL COURT

SJC-12477

NEW ENGLAND POWER GENERATORS ASSOCIATION AND GENON ENERGY, INC.,

Plaintiff-Appellants,

FOOTPRINT POWER SALEM HARBOR DEVELOPMENT L.P. AND MASSACHUSETTS MUNICIPAL WHOLESALE ELECTRIC COMPANY,

Intervenor-Appellants,

v.

MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION AND EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS,

Defendant-Appellees.

On Complaint for Review of Final Regulations of the Massachusetts Department of Environmental Protection and the Executive Office of Energy and Environmental Affairs

BRIEF OF APPELLEES MASSACHUSETTS DEPARTMENT OF ENVIRONMENTAL PROTECTION and EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS

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TABLE OF CONTENTS

Page

Table of Contents — Continued *Page*

Table of Contents — Continued *Page*

TABLE OF AUTHORITIES

Page

Cases

Table of Authorities - Continued

Statutes

Table of Authorities - Continued

Table of Authorities - Continued

Regulations

Table of Authorities - Continued

Table of Authorities - Continued

Legislative Materials

Miscellaneous

Table of Authorities - Continued

GLOSSARY OF COMMON ABBREVIATIONS

Add-	Addendum
Agencies	Massachusetts Executive Office of Energy and Environmental Affairs and Department of Environmental Protection
Cap Regulation	The final rule published at 310 C.M.R. § 7.74 and titled “Reducing CO_2 Emissions from Electricity Generating Units”
CES Regulation	The final rule published at 310 C.M.R. § 7.75 and titled “Clean Energy Standard”
CO_2	Carbon Dioxide
DPU	Department of Public Utilities
Department	Massachusetts Department of Environmental Protection
DOER	Department of Energy Resources
EEA	Massachusetts Executive Office of Energy and Environmental Affairs
GWSA	Global Warming Solutions Act, G.L. c. 21N, §§ 1-9, St. 2008, c. c. 298, secs. 1-18
ISO-NE	Independent System Operator – New England
$MMTCO_2e$	Million Metric Tons of CO_2 Equivalents
RA	Record Appendix
RGGI	Regional Greenhouse Gas Initiative
RPS	Renewable Portfolio Standard

Glossary of Common Abbreviations - Continued

The Power Plants	New England Power Generators Association, GenOn, Inc., Footprint Power Salem Harbor Development LP, and the Massachusetts Municipal Wholesale Electric Company

ADDENDUM TABLE OF CONTENTS

Addendum Table of Contents – Continued *Page*

LEGISLATIVE HISTORY

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STATEMENT OF THE ISSUES

The Global Warming Solutions Act (GWSA) authorizes the Department of Environmental Protection and the Executive Office of Energy and Environmental Affairs (Agencies) to establish "[e]missions levels and limits associated with the electric sector ... based on consumption and purchases of electricity from the regional electric grid, taking into account the regional greenhouse gas initiative and the renewable portfolio standard." G.L. c. 21N, § 3(c). Relying on § 3(c) and other authority, and in direct response to *Kain v. Department of Environmental Protection*, 474 Mass. 278 (2016), the Agencies issued two rules that together seek to further reduce greenhouse gas emissions from fossil-fueled electricity generating facilities (power plants) to enable the Commonwealth to meet the GWSA's 2020 and 2050 emissions limits. The questions presented are:

1. Did the Agencies lawfully exercise their authority when they issued a regulation that sets an in-state limit on power plant greenhouse gas emissions that declines by 2.5% per year through 2050, where the GWSA authorizes "[e]missions levels and limits associated with the electric sector" and the declining limits will help ensure compliance with the GWSA's 2020 and 2050 limits?

2. Did the Agencies properly exercise their policy-making judgment to set a declining in-state cap on power-plant emissions, where, among other things, their analyses projects net reductions in in-state and regional electric-sector greenhouse gas emissions while minimizing the risk of leakage?

STATEMENT OF THE CASE

There is no longer any question that climate change is occurring, that it is caused largely by man-made greenhouse gas emissions, or that it is having and will continue to have devastating environmental, economic, and social consequences. RA 351-52, 408. As recent storms have made clear, climate change is especially costly for the Commonwealth and neighboring states, where it is causing earlier and more significant impacts than elsewhere in the contiguous United States.[1] Climate change's primary driver is the emission of greenhouse gases, especially carbon dioxide (CO_2) from fossil-fueled combustion--in power plants, cars, and heating in buildings--and the primary solution lies in a massive, economy-wide reduction in those emissions. The state is working to achieve that goal by promoting clean, renewable energy sources to power clean, electrified heating and transportation.

Massachusetts cannot solve climate change on its own, but it can continue to lead the way by taking bold steps to reduce its own greenhouse gas emissions, thus blazing a path for others to follow. Indeed, those are the animating purposes of the GWSA's near-

[1] RA 2621; *see also* I U.S. GLOBAL CHANGE RESEARCH PROGRAM, EXECUTIVE SUMMARY *IN* CLIMATE SCIENCE SPECIAL REPORT: THE FOURTH NATIONAL CLIMATE SCIENCE REPORT 1, 11, 17 (D.J. Wuebbles et al. eds. 2017), https://goo.gl/TJ1YhV.

and long-term emissions limits, G.L. c. 21N, § 3(a)-(b), and its grant of broad authority to the Agencies to achieve those limits, *e.g.*, *id.* §§ 2, 3(c)-(d), 4, 6-7. Recognizing the crucial role the electric sector will need to play to curb climate change, the Legislature expressly authorized the Agencies to establish "emissions levels *and limits* associated with the electric sector." *Id.* § 3(c) (emphasis added); *see also id.* § 3(d). And, as this Court made clear, the Commonwealth's agencies must act on this authority to meet the GWSA's four economy-wide greenhouse gas emissions limits--2020, 2030, 2040, and 2050. *Kain,* 474 Mass. at 291-93.

In response to *Kain*, the Agencies initiated an extensive public process and, on August 11, 2017, published a suite of six final regulations, that, among other things, set annually declining emissions limits on multiple sectors of the economy (e.g., electricity generation, transportation and heating) to achieve the more than 4% emissions reductions necessary to meet the GWSA's 2020 limit and to set the Commonwealth on a course to meet the Act's 2050 limit. RA 3150, 3155-56, 3312-13. The Agencies crafted two of those regulations to work together to ensure reductions in the electric-sector: (i) Reducing CO_2 Emissions from Electricity Generating Facilities, 310 C.M.R. § 7.74 (Cap Regulation) (Add-19), and (ii) the

Clean Energy Standard, 310 C.M.R. § 7.75 (CES Regulation) (Add-30).[2] While the Cap Regulation establishes a declining limit on power-plant emissions through 2050, the CES Regulation establishes an increasing level of clean, non-emitting electricity that sellers of electricity to Massachusetts consumers must purchase annually. By design, the two Regulations complement each other: requiring decreases in emissions from electricity production while also requiring increasing sales to consumers of clean energy.

The New England Power Generators Association, a trade organization of the region's largest and mostly fossil-fueled power plants, and plant owner GenOn Energy, Inc. (together, NEPGA) and Intervenor-Appellant plant owners Footprint Power Salem Harbor Development LP (Footprint) and the Massachusetts Municipal Wholesale Electric Company (MMWEC) (collectively, Power Plants) challenge only the Cap Regulation. They proceed on the untenable theory that expert energy and environmental agencies issued a regulation that will necessarily and significantly

[2] *See also* 310 C.M.R. § 7.72 (2017) (Reducing Sulfur Hexafluoride Emissions from Gas-Insulated Switchgear); 310 C.M.R. § 7.73 (2017) (Reducing Methane Emissions from Natural Gas Distribution Mains & Services); 310 C.M.R. § 60.05 (2017)(GWSA Requirements for Transportation); and 310 C.M.R. § 60.06 (2017) (CO_2 Emission Limits for State Fleet Passenger Vehicles).

increase the region's emissions. *E.g.*, NEPGA Br. 33-46. Yet the record shows that (i) the Cap and CES Regulations, working hand in glove, will reduce emissions, and (ii) the Cap Regulation will serve as a backstop to ensure those reductions occur in Massachusetts, *without* increasing greenhouse gas emissions across the region. *Infra* pp.51-58, 66-72.

NEPGA filed its complaint in Superior Court on September 11, 2017, seeking review of the Cap Regulation under G.L. c. 30A, § 7, and c. 231, §§ 1-2. RA 3378. Later, Footprint and MMWEC each sought to intervene, RA 3374-75, which the Superior Court subsequently allowed on certain conditions, RA 3406-08, 3483-85. The Agencies filed the administrative record for the Cap and CES Regulations on December 7, 2017, as their answer to all claims in the case. RA 3409. On January 31, 2018, a Single Justice of this Court (Budd, J.), after a hearing, transferred NEPGA's action to the County Court under G.L. c. 211, § 4A, RA 3490, and reserved and reported the case to the full Court on February 9, 2018. The case was entered on this Court's docket on February 13, 2018.

STATEMENT OF LAW AND FACTS

I. The Massachusetts Global Warming Solutions Act.

A. Pre-Global Warming Solutions Act Massachusetts Climate Policies.

Massachusetts has long been a leader in tackling climate change. In 2001, it was the first state in the nation to cap CO_2 emissions from fossil-fueled power plants. *See* 310 C.M.R. § 7.29(5)(a)(5) (Add-43).[3] Massachusetts then sued the federal government to compel it to act on climate change under the federal Clean Air Act, ultimately prevailing in the landmark decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007).

Since then, the Commonwealth has continued to work to curb greenhouse gas emissions through multiple policy and regulatory initiatives aimed at reducing fossil-fueled combustion, increasing renewable energy supplies, and implementing energy efficiency programs, which have reduced emissions and saved consumers money. *See, e.g.*, RA 379 Fig. 1, 2134, 2403; *see also* RA 1865, 1867. [4] Two such programs are particularly relevant here.

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[3] Ken Kimmell & Laurie Burt, *Massachusetts Takes on Climate Change*, 27 UCLA J. Envtl. L. 295, 313 n.24 (2009).

[4] In numerous regulatory and judicial proceedings since the Supreme Court's decision in *Massachusetts v. EPA*, Massachusetts alongside partnering states and stakeholders has fought for and sought to defend national regulations on major sources of greenhouse gas emissions, including vehicles, fossil-fueled power

First, the Regional Greenhouse Gas Initiative (RGGI), a multi-state market based power-plant CO_2 cap-and-trade program, establishes a legally binding, declining cap on CO_2 emissions by fossil-fueled power plants in nine northeast and mid-Atlantic states. RA 1864. Covered entities must purchase one "allowance," either at auction or from other entities, for each ton of CO_2 emitted. *Id.* If a power plant can cut emissions less expensively than others, it can trade its left-over allowances to less efficient producers, thereby incentivizing investment in clean generation sources and emissions-reduction technologies. RA 1864, 1913-14. Allowance-auction revenues are directed back to participating states to invest in energy efficiency programs, among other things. RA 1864-65, 1913. RGGI is thus sometimes referred to as a "cap-trade-invest" program. RA 1864.[5]

Second, the Massachusetts Renewable Portfolio Standard (RPS), was enacted in 1997 as one of the first programs in the nation to require that a percentage of the state's electricity come from qualifying renewable energy sources like wind, solar,

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plants, and oil-and-gas infrastructure. *See generally* N.Y. UNIV. STATE ENERGY & ENVTL. IMPACT CTR., STATE ATTORNEY GENERAL: 13 MONTHS OF CRITICAL ACTIONS (2018).

[5] The Department enforces RGGI through regulations setting the CO_2 budgets and compliance requirements for Massachusetts power plants. *See* 310 C.M.R. § 7.70.

and hydroelectric resources. G.L. c. 25A, § 11F; *see* 225 C.M.R. §§ 14.00, 15.00. The RPS requires that retail sellers of electricity like utilities deliver a higher percentage of renewable energy to Massachusetts customers each year, encouraging development of additional renewable energy resources over time. RA 1810-11, 1866. Qualifying renewable sources are located in Massachusetts, throughout New England, and in other electric grids.

B. The Global Warming Solutions Act and the Electric Sector.

Against that regulatory backdrop, but recognizing the need to do more, *see Kain*, 474 Mass. at 280, the GWSA "established a comprehensive framework to address the effects of climate change in the Commonwealth," *id.* at 281-82 (citation omitted). The Legislature also hoped that the GWSA also would "encourag[e] other states, the federal government, and other countries to act" as well. 2007 Senate Doc. No. 534, sec. 1, § 2(c)-(e). In that respect, "[t]he act represents a commitment by the Commonwealth 'to the most ambitious greenhouse gas reductions for a single state in the entire country.'" *Kain*, 474 Mass. at 282-83 (quoting RA 596). To further those twin aims, the Legislature tasked the Executive Office of Energy and Environmental Affairs (EEA) and the Department of Environmental Protection (Department) with primary

responsibility to implement the Act. St. 2008, c. 298, secs. 3, 4.

The GWSA sets in motion a series of actions--each building on the last--to achieve its bold purposes. First, the Act directs the Department to "determine the statewide greenhouse gas emissions level in calendar year 1990" and then to "reasonably project what the emissions level will be in calendar year 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009." G.L. c. 21N, § 3(a). Second, the Act requires the Commonwealth to reduce its statewide greenhouse gas emissions by at least 80% below the 1990 level by 2050 and directs EEA adopt interim statewide emissions limits for 2020, 2030, and 2040, and to develop plans for implementing each. *Id.* §§ 3(b), 4(a); St. 2008. c. 298, sec. 15. Third, the Act requires EEA to update its implementation plans every five years, G.L. c. 21N, § 4(h), and to publish interim progress reports every five years, beginning in 2014. *Id.* §§ 3(b), 4, 5. Fourth, the Act requires the Department to issue regulations requiring reporting by emissions sources on their emissions and to publish an "inventory" every 3 years estimating the past 3 years' statewide emissions. *Id.* § 2(a)-(c).

The GWSA also gives the Agencies additional, new authority to reduce greenhouse gas emissions. *See id.*

§§ 3(c)-(d), 6. The centerpiece of this case, GWSA § 3(c), requires the Agencies, in consultation with the Department of Energy Resources (DOER), to establish "*levels and limits associated with the electric sector* ... based on consumption and purchases of electricity from the regional electric grid, taking into account the [RGGI] and the [RPS]." *Id.* § 3(c) (emphasis added). The Act additionally requires the Department to issue "declining annual aggregate emission limits for," without limitation, "sources or categories of sources that emit greenhouse gas emissions." *Id*. § 3(d).[6] The Legislature also made clear that the GWSA would be a floor, not a ceiling, and provided that the statute should not be read to "prevent the imposition of more stringent limits on emissions." St. 2008, c. 298, sec. 8.

The GWSA covers all sectors of the economy, but its text reflects a heightened focus on reducing electric-sector emissions to achieve the GWSA's near- and long-term limits. The Act thus defines those limits--"statewide greenhouse gas emissions limit[s]" --to encompass "the total annual emissions of greenhouse gases in the commonwealth, including all

[6] The Act also authorizes state agencies to issue "regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings and transportation." G.L. c. 21N, § 6.

emissions ... from the *generation of electricity* delivered to and consumed in the commonwealth, accounting for transmission and distribution line losses, whether the electricity is generated in the commonwealth or imported." G.L. c. 21N, § 1 (emphasis added). The Act then specifically identifies sources that must report greenhouse gas emissions, including large emitters like power plants and entities that sell electricity to Massachusetts consumers, *id.* § 2(a)(3), (5), and, again, authorizes the Agencies to establish "levels and limits" on electric-sector emissions, *id.* § 3(c). And EEA must give special attention in its implementation plans "to energy-related matters including ... electrical generation" to ensure that the state's electric-sector policies complement each other, *id.* § 4(a).[7]

The GWSA also acknowledges the possibility that its implementation could result in leakage--a common by-product of emissions-reduction programs. Leakage can occur "when sources outside the scope of a greenhouse gas ... emissions reduction system increase [their] emissions as a result of that system."[8] While leakage may occur within a state as well, the GWSA

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[7] G.L. c. 21N, §§ 5(v) ("diversification of energy sources"), 8 ("energy generation and distribution").

[8] JUHA SIIKAMÄKI ET AL., RES. FOR THE FUTURE, CLIMATE POLICY, INTERNATIONAL TRADE, AND EMISSIONS LEAKAGE 1 (2012), https://goo.gl/MBTjsz.

focuses only on out-of-state leakage, defining the term as the "offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth." *Id.* § 1. In its only use of that term, the GWSA directs EEA to evaluate once every five years "whether state actions *minimize*" leakage. *Id.*§ 5(vii).

C. The Agencies' Implementation of the Global Warming Solutions Act.

The Agencies have now complied with the GWSA's foundational mandates, and, by issuing the six regulations on August 11, 2017, their mandated § 3 obligations. *Kain*, 474 Mass. at 284.

On July 1, 2009, the Department finalized the 1990 Baseline and 2020 Business as Usual Projection, estimating 1990 economy-wide emissions as 94 million metric tons of CO_2 equivalents ($MMTCO_2e$). RA 375, 378. The transportation sector generated the highest emissions in 1990 (28.9 $MMTCO_2e$), followed by electric generation (25.6 $MMTCO_2e$) and fossil-fueled combustion in buildings (23.4 $MMTCO_2e$). RA 378 Tbl.1. In calculating those projections, the Department accounted for the "linked, regional nature of the New England electric grid." RA 385; *accord* RA 400.

In December 2010 the EEA Secretary set the 2020 statewide emissions limit at 25% below the 1990 baseline (70.5 $MMTCO_2e$), RA 408, 411-12; *see* G.L. c.

21N, § 4(a), and EEA published the state's first implementing "Clean Energy and Climate Plan for 2020" (2020 Plan). RA 414. There, EEA noted that then-existing policies and actions could reduce emissions by 18% by 2020, leaving 7% to be reduced by new policies and actions by 2020. RA 523. To close that gap, EEA described by sector (e.g., electricity, transportation, and building-heating) the policies that could do so, RA 426-434, and noted how their implementation could influence reductions in other states, *see* RA 446.

The 2020 Plan also mapped out steps necessary to meet the GWSA's ambitious 2050 80% reduction limit, recognizing that doing so will require significant changes that the state must start planning now. *See* RA 529. In describing the "road to 80 percent," EEA assessed two approaches, each with a common denominator: "the vast majority of electrical supply must be low carbon (70 to 80 percent lower than average emissions from the New England grid at present)." *See* RA 540; *see also* RA 531.

The 2015 update to the 2020 Plan (Updated 2020 Plan) succinctly summarized the major changes that would need to occur to achieve the 2050 limit: "reduce, electrify, and decarbonize." RA 1258, 1292. There, EEA again concluded: "the only viable path to deep reductions in [greenhouse gas] emissions is

through a combination of reduced energy consumption ..., expanded availability of clean electricity, and electrification of the transportation and heating sectors." RA 1292. The Updated 2020 Plan again emphasized that necessary changes will take years, if not decades, to make. *See id.* It also emphasized that the need for clean electricity will grow as other sectors, including the highest greenhouse gas emitting sector--transportation--are electrified. RA 1273. Thus, while the Updated 2020 Plan recognized the electric sector as the "dominant source of emission reductions" to date, RA 1251, it concluded that sector must do more to "serve the longer-term need to move to zero-carbon generation." RA 1272.

II. The Electric Sector and Electricity Markets.

The power system is divided into regional grids, each designed and operated to shift electricity generation to the least expensive sources to meet demand. That system favors cleaner energy sources, because they tend to have low or no operating costs and produce cheaper electricity. Regulators, like the Agencies here, have for years capitalized on this system as a cost-effective means to reduce emissions. The Cap and CES Regulations are built on these principles as well. *See, e.g.*, RA 3171.

A. ISO New England and the Regional Grid.

ISO New England (ISO-NE) is the operator of the New England regional electricity grid.[9] It conducts long-term regional system planning studies to ensure adequate resources are available reliably to meet electricity demand, RA 1209, 1218, 2370; *see also* RA 567, and runs a three-year-ahead "forward capacity" market to secure in advance sufficient resources locally and system-wide. RA 572. ISO-NE also administers two wholesale electricity markets (the Day-Ahead Energy Market and the Real-Time Energy Market, *see* RA 568), to determine which specific power generators will run for every hour of the year to match demand. RA 1204-05. ISO-NE then directs electric generators to produce, or "dispatch," more or less power to the grid to ensure that electricity rises and falls to meet demand. RA 567-68, 571, 1198, 1204-05.

The regional grid consists of electric generation facilities (e.g., fossil-fueled power plants, hydro-electric dams, wind farms, and solar arrays) and transmission lines that carry electricity first from generators to local distribution circuits, and then on to consumers. RA 1198-99, 1203-04. Electricity that enters the grid, from any source, "immediately becomes

[9] The ISO-NE region includes Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont and is interconnected with the New York ISO and the Québec and New Brunswick control areas in Canada. RA 1217.

a part of a vast pool of energy that is constantly moving in interstate commerce." *New York v. FERC*, 535 U.S. 1, 7 (2002).[10]

Massachusetts consumes approximately half of all electricity in the ISO-NE region, the most of any ISO-NE state, RA 2459, and it is a net importer of electricity, meaning that it exports less than it imports. RA 1590-91. Emissions associated with in-state generated electricity, nonetheless, represented the majority of Massachusetts' electric-sector emissions in 2014 (about 73%). *See* RA 1784. The supply for the total Massachusetts demand (in-state generated and imports) was roughly as follows in 2012: fossil-fueled power plants (coal, oil, and natural gas) (56%), hydroelectric dams (19%), nuclear plants (15%), and renewable energy (10%). RA 3167-68. Since 2014, Massachusetts' remaining coal-fired power plants closed, and cleaner energy is expected to replace the electricity they generated. RA 2165 Tbl.1.

B. The "Bid-Stack" and Dispatch of Electricity Generation Facilities.

As already discussed, ISO-NE matches generation resources to demand by administering wholesale electricity markets. Within these markets' auction systems, electricity generators offer the electricity

[10] The Department estimated that in 2014 44% of electricity consumed in Massachusetts was generated in other states and Canada. *See* RA 1590.

they produce to meet hourly electric demand. *See* RA 568, 1211, 1218. In general, each hour ISO-NE dispatches the least expensive generators first and the most expensive last. RA 1159, 3419.[11]

The process of arranging the bids in sequential order creates what is known as the "bid stack." Once the bid stack has been set, ISO-NE begins at the bottom of the stack, where the lowest-cost bid is, and works its way up until it has purchased enough electricity to meet the anticipated demand for electricity in New England for that hour. The final and highest-cost generator it selects in a given hour, the "marginal unit," sets the price that every other generator that clears the auction will be paid in that hour. RA 570, 1276.[12]

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[11] ISO-NE generally uses a least-cost security-constrained economic energy-dispatch model to dispatch generators. As its name implies, while ISO-NE generally works its way up the bid stack, dispatching the least-cost generators first, the process in reality is more complex and considers many variables in addition to just price, including system demands, generators' operational constraints, transmission limits (losses and constraints), and environmental standards, all of which influence the bid stack. RA 568-71, 1210-12, 1218-19.

[12] Generators lower in the stack should realize higher market profits because they produce electricity at a cheaper cost as compared to the marginal unit.

C. Effects of Environmental Regulation, Renewable Energy Resources, and Demand Resources on the Bid Stack.

State environmental regulations can harness the efficiencies of the ISO-NE market dispatch model in several ways. First, emissions reduction limits in a cap-and-trade program can increase or decrease power plants' operating costs or can limit a plants' ability to operate. A fossil-fueled power plant that incurs increased regulatory costs or is operationally constrained by an emissions limit will typically be dispatched less often. And, in its own right, an emissions cap-and-trade program like the Cap Regulation here also uses "market forces to determine the most economic means of reducing emissions and creates [the] market certainty needed to drive long-term investments," meaning that it too could encourage development of cleaner resources that will enter at the bottom of the bid stack. RA 2045, 2372, 2737.

Second, clean energy resources (like wind, solar or hydro) can submit very low bids into the hourly wholesale electricity markets, at the bottom of the bid stack because they have virtually no fuel costs or emissions-related regulatory compliance costs. RA 276, 2870.[13] Those clean resources thus will be dispatched

[13] *Energy and Env't Legal Inst. v. Epel*, 793 F.3d 1169, 1171 (10th Cir. 2015) (noting that Colorado's RPS increases clean energy, causing out-of-state coal plants to lose business).

more when they are available, decreasing the need for emitting fossil-fueled power plants to operate. *See* RA 3158. And government programs that require clean energy procurement or purchases,[14] like the RPS and the CES Regulation, spur further investment in these types of new clean energy.[15]

Third, programs that decrease overall energy demand (called demand resources) like those that promote energy efficiency measures in residential, commercial, and industrial buildings under the Green Communities Act, G.L. c. 25, § 21(b)(1), RA 1373, work indirectly to change generator dispatch. RA 1196, *see also* RA 1193-94. As these programs reduce demand, the marginal unit price will decrease and lessen the need to dispatch higher cost, dirtier fossil-fueled power plants that sit at the top of the bid stack and would otherwise be called on last. In Massachusetts, for example, state-required investments in energy efficiency have mitigated increased electricity demand and removed "load growth as a driver of increased

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[14] *See, e.g.*, An Act to Promote Energy Diversity, St. 2017, c. 188, sec. 83D(a).

[15] *See supra* pp.7-8 (describing RPS). "[E]xperiences with RPS programs show that market certainty for clean energy attributes supports development of clean generation resources over time." RA 3158; *see also* David E. Adelman & Kristen H. Engel, *Reorienting State Climate Change Policies to Induce Technological Change*, 50 Ariz. L. Rev. 835, 868 (2008).

[greenhouse gas] emissions." RA 1251; *see* RA 1263, 1264 Fig.7.

III. The Cap and CES Rulemaking.

Kain directed the Agencies to promulgate new regulations to achieve the GWSA's near- and long-term statewide emissions limits. 474 Mass. at 291-93. Following *Kain*, the Agencies carefully crafted six regulations that will ensure that the state will meet the GWSA's 2020 limit and will put it on a path to achieve the 2050 limit. The Cap and CES Regulations are critical to this effort, as they together ensure emissions reductions necessary to meet those goals.

A. Development of Proposed Electric-Sector Regulations.

Less than four months after *Kain*, the Governor issued an Executive Order to ensure that Massachusetts would timely comply with that decision and take further action to reduce greenhouse gas emissions. RA 351. The Order recognized that "the generation and consumption of energy continues to be a significant contributor to greenhouse gas emissions in the Commonwealth, and there is a significant potential for reducing emissions through continued diversification of our energy portfolio." RA 351-52. It required new regulations to be issued by August 11, 2017. RA 353. Twelve days later, the Department began a public process to solicit input on potential regulation of

emissions sources, including the electric sector. RA 4, 15-16.

During electric-sector stakeholder meetings, the Department described in detail the concepts it was considering for regulating greenhouse gas emissions, RA 69-99, 100-08. To reduce in-state emissions to meet the GWSA's 2020 and 2050 limits, the Department proposed establishing a declining cap on emissions for all large new and existing Massachusetts power plants effective between 2018 and 2050. RA 78. Relying on past and projected emissions through 2020 as a partial proxy for electricity consumption, the agency suggested proposing a cap that would match expected reductions caused by other programs, to "ensure" it would be "achievable." RA 80-81.[16] At the same time, the Department indicated that it was also considering a clean energy standard for sales to consumers to "complement" the declining cap by decreasing demand for fossil-fueled-generation. RA 92-93.

[16] Projected reductions are largely driven by policies that affect electricity consumption directly (e.g., energy efficiency programs), or indirectly by regulating the sale of electricity for consumption in Massachusetts (e.g., RPS and CES). *See* RA 3159; *see also* 1276 (explaining how clean energy resources reduce fossil-fuel generated electricity and energy efficiency reduce overall electricity demand).

B. Notice and Comment on the Proposed Electric-Sector Regulations.

After considering stakeholder feedback,[17] the Department published the proposed Cap and CES Regulations (RA 2198, 2208) on December 16, 2016, along with a Technical Support Document, RA 2131-91, and notice of six public hearings, RA 2226, 2229, 2232. The agency noted that the state would need to reduce its greenhouse gas emissions by 5.3% to meet the 2020 limit. RA 2134. To provide some cushion, it proposed six regulations that, together with existing policies, would ensure a 7.2% reduction, much of which was attributed to the electric sector (3.1%). RA 2138-41; *see also supra* p.4 n.2. In developing the proposed rules, the Department consulted with EEA and DOER, as well as the Department of Public Utilities (DPU), RA 2140, 2154, and accounted for existing and future state renewable energy and efficiency programs, *e.g.*, RA 2140.

The Department made clear that the proposed Cap and CES Regulations were "designed to work in tandem," with the Cap Regulation ensuring expected emissions reductions from Massachusetts power plants and the CES Regulation securing for consumption in Massachusetts additional "clean energy" resources (electricity generated by low- or non-greenhouse gas emitting

[17] Stakeholder comments are included in the Record at RA 5-11, 14, 18-20, 33-53, 111-346.

sources, such as solar arrays). RA 2154. The proposed cap was based on state Greenhouse Gas Inventory data, projected changes in electricity consumption, and the generation resource mix. RA 2165-69.

The proposed Cap and CES Regulations generated a significant number of oral comments and almost 900 pages of written comments. RA 2235-3131. The comments largely tracked those submitted during the pre-proposal stakeholder process. *See infra* p.22 n.17. Environmental organizations and citizens voiced support for both regulations but called for a more stringent cap and greater mandated reductions each year, RA 2293, 2650-51, 2724-25, 2764, 3614; *accord, e.g.*, RA 219, 235, 246. Those commenters also reiterated the necessity of reducing emissions in the electric sector to offset increased overall demand for electricity (and the resulting dispatch of dirtier generators higher up the bid stack) caused by electrifying the transportation and building-heating sectors. *E.g.*, RA 2251.

Fossil-fueled power plants and other industry commenters were less supportive, arguing that no power-plant cap should issue at all, *e.g.*, RA 2322-23, 2533-34, 2603-04, 2808-2811, 2870-71, and that Massachusetts should rely exclusively on RGGI to cap electric-sector emissions due to the sector's regional nature, RA 2602-03, 2806-08; *accord, e.g.*, RA 132,

169, 232.[18] Electric-sector commenters also asserted that the Cap Regulation would increase regional greenhouse gas emissions via leakage. Four commenters (ISO-NE, Tabors Caramanis Rudkevich (Tabors), Dynegy, and NRG) submitted or described modeling results that, they claimed, demonstrated leakage. RA 2368-2405, 3119-31, 2805-35, 2976-87.

C. The Final Electric-Sector Regulations.

Following its review of this comprehensive record and extensive consultation with DOER, RA 3148-49, 3313, on August 11, 2017, the Agencies published the final Cap and CES Regulations, along with four additional complementary regulations applicable to other sectors. RA 3347-70. The Agencies explained in a detailed Response to Comments that the final Cap and CES Regulations targeted electric-sector emissions because "in the near term ... they represent the largest [achievable] reductions ... and in the long term ... additional electricity will be needed to power electric vehicles and heat homes." RA 3157.

The Cap Regulation requires that fossil-fueled power plants in the Commonwealth *decrease* their emissions each year. Specifically, it imposes an

[18] Electric-sector comments submitted during the stakeholder process also recognized that the market itself is causing clean energy resources to replace fossil-fueled power plants, *e.g.*, RA 133, and that a cap in combination with a clean energy standard could advance the GWSA's purposes, RA 259-60.

aggregate limit of just below 9 $MMTCO_2e$ in 2018 applicable to large power plants. 310 C.M.R. § 7.74(5)(a). The rule sets aside a certain amount of emissions allowances for new facilities and then allocates allowances to existing facilities based on their average generation in earlier years, *id.* § 7.74(4)-(5), with each allowance authorizing the power plant to emit one metric ton of CO_2, *id* § 7.74(2); *see* G.L. c. 21N, § 1. The Cap Regulation then establishes caps for each subsequent year that are 2.5% below the prior year, until the cap reaches approximately 1.8 $MMTCO_2e$ in 2050. 310 C.M.R. § 7.74(5)(a). To provide flexibility, the Cap Regulation allows power plants to sell unused allowances to other plants. *Id.* § 7.74(6)(c).

The CES Regulation complements that mandatory decrease in fossil-fueled power-plant emissions by requiring that retail sellers *increase* the amount of low- or zero-emitting clean energy supplied to the Commonwealth. Specifically, it requires affected retail sellers to supply 16% clean energy in Massachusetts in 2018--whether that electricity is generated within or beyond Massachusetts' borders--and increases that percentage by 2% annually until it reaches 80% in 2050. 310 C.M.R. § 7.75(4); *see* RA 2154-55, 3361-62, 3197.[19]

[19] Retail sellers can use their RPS compliance

The Agencies emphasized in their detailed Response to Comments how those two rules will work together to achieve the GWSA's goals. The CES Regulation and other clean energy policies reduce the demand for, and thus generation of, electricity from fossil-fueled power plants both within and outside of Massachusetts. RA 3158; *see also* RA 2155. The Cap Regulation, in turn, serves as an anti-backsliding "enforceable backstop" to make sure that anticipated emissions reductions from in-state power plants--which are expected to result from the CES Regulation and other policies--will actually occur in Massachusetts, and to provide a clear, long-term policy signal to the electric sector so that the sector can retool to increase clean energy generation and reduce fossil-fueled power generation. RA 3154, 3194.

Before finalizing the rules, the Agencies commissioned a comprehensive study to confirm that the Cap and CES Regulations would work as designed. *See* Analysis of Mass. Electricity Sector Regulations: Electricity Bill and CO_2 Emissions Impacts (Emissions Study), RA 3195-3269. The Emissions Study took into account all clean energy and energy efficiency programs, along with other changes expected to occur

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credits to comply with a portion of the clean energy required to be supplied under the CES Regulation. RA 2157.

in the energy markets and the grid's "bid-stack" principles, and projects that the Agencies' Cap and CES Regulations will reduce *both* in-state and regional greenhouse gas emissions associated with the electric sector in every year studied, RA 3197, with slight (less than 2%) impacts on wholesale electricity prices and retail utility bills, *id*.

The Emissions Study explains that the limits chosen in the Cap Regulation would not cause an increase in operation of dirtier, out-of-state fossil-fueled power plants. Instead, clean energy resulting from the CES Regulation and other clean-energy and energy-efficiency policies will drive down demand for high-emitting fossil-fueled power plants at the top of the bid stack, decreasing emissions from Massachusetts power plants below the Cap Regulation's limits. *See* RA 3214-15 (Fig. 3). It further projects that, even if demand for electricity were higher than is currently expected and the Cap did limit emissions from, or "bind," Massachusetts power plants to meet that demand, the Cap would have its intended effect as a "backstop" without causing *any* aggregate regional emissions increases. RA 3226-28. Greenhouse gas emissions would still decrease both here and across the region due to reductions brought about by increased clean energy. RA 3194, 3227.

In responding to comments, the Agencies also explained how the other models and results submitted by commenters are in fact consistent with the results of the Emissions Study, "demonstrat[ing] that, when considered in combination with other policies, [the Cap Regulation] can serve its purpose of ensuring that reductions from other clean energy policies are realized in Massachusetts," while minimizing the risk of leakage. RA 3173-74; *see also* RA 3171-76. But in response to the risk of minimal out-of-state emissions increases those other models identified, the Agencies changed the final rule in two ways, which, as ISO-NE had urged, would "mitigate cost and regional emissions increases and help ensure reliable electric service for the commonwealth and the region," RA 2369-70: (i) using an auction to distribute allowances, 310 C.M.R. § 7.74(6)(h), RA 3184, 3352; and (ii) adding a provision permitting facilities to exceed the cap in ISO-NE declared grid reliability emergencies, as long as excess emissions are offset on a two-to-one basis in the next year, 310 C.M.R. § 7.74(6)(d), RA 3187, 3351.

The Agencies in their detailed Response to Comments also described three other ways in which the final Cap and CES Regulations further the broader goals of the GWSA. The Cap Regulation's enforceable emissions limits provide a "clear signal" to energy

markets to inform large capital investments and incentivize development of emissions reduction technologies. RA 3182. The Agencies will invest any funds they collect under the Cap and CES Regulations in "programs and projects to reduce greenhouse gas emissions to mitigate the impacts of climate change." 310 C.M.R. § 7.75(5)(c)(2), § 7.74(6)(h)(1)(i); *see also* RA 3165, 3185. And, the Cap and CES Regulations will bring about other environmental benefits contemplated by the GWSA, *see infra* pp.36-37, reducing other non-greenhouse gas power-plant emissions that also adversely impact public health and the environment throughout the Commonwealth. RA 3154 & n.14; *see also* RA 445-46.

SUMMARY OF THE ARGUMENT

The GWSA authorized the Agencies to issue the Cap Regulation. By its terms, it requires "emissions ... limits associated with the electric sector," G.L. c. 21N, § 3(c), and § 3(c)'s directive that such "limits" account for RGGI contravenes any claim that RGGI can supply them (pp.33-34). Indeed, the Cap Regulation is an essential backstop that ensures the emissions reduction path driven by other policies necessary to meet the GWSA's 2020 and 2050 limits, and prevents backsliding from year-to-year (pp.35-36). GWSA § 3(d) does not bar this protective policy; it supports it (pp.37-40), as long as the Agencies satisfy § 3(c)'s

electric-sector-specific factors. Here, they did just that: they consulted with DOER, considered electricity consumption and purchases, and accounted for RGGI and the RPS (pp.40-45). And, finally, GWSA § 16's sunset clause cannot nullify the Regulation's post-2020 limits, because it simply does not apply to § 3(c) rules. Even if it did, the Agencies post-2020-limits reconsideration process satisfies both § 16 and the GWSA's paramount purposes (pp.45-51).

The Power Plants do not--and cannot--demonstrate that the Cap Regulation lacks any conceivable basis. The Cap Regulation, working by design with the CES Regulation, will ensure the projected decreases in in-state fossil-fueled power plant emissions, while the CES Regulation will increase the supply of low- or zero-emitting electricity supply for in-state consumption (pp.52-55). The Emissions Study shows that, in doing so, the Regulations are expected to reduce both in-state and regional emissions (pp.53-54), and thus minimize, as the Act requires, any leakage risk (pp.53-57). Even if the Cap Regulation does limit (or "bind") in-state power plant emissions, the Study also shows that resulting increased in-state emissions reductions will outweigh any resulting out-of-state power-plant emissions increases, yielding a net *reduction* in statewide and regional emissions (pp.56-57). But that is not all: the rule will, among

other things, incentivize investment in clean energy and will likely spur other states to take action, yielding further potential reductions (pp.57-59). And while the law forbids the Power Plants from countermanding the Agencies' reasoned policy judgment with their own, the modeling results they trumpet actually support the Agencies' rationale and expert judgments (pp.66-72).

ARGUMENT

The standards governing judicial review of the Agencies' final regulations are well-settled. "Duly promulgated regulations of an administrative agency are presumptively valid and 'must be accorded all the deference due to a statute.'" *Pepin v. Div. of Fisheries and Wildlife*, 467 Mass. 210, 221 (2014), quoting *Mass. Fed'n of Teachers AFT, AFL-CIO v. Bd. of Educ.*, 436 Mass. 763, 771 (2002). A party seeking to invalidate a regulation thus bears the "substantial burden" to prove it "invalid or illegal," whether for lack of agency authority or improper exercise of existing authority. *Entergy Nuclear Generation Co. v. Dep't of Envtl. Prot.*, 459 Mass. 319, 329 (2011).

An agency's authority to regulate can be express or implied. *See Pepin*, 467 Mass. at 221. In resolving the scope of an agency's statutory authority to act, this Court employs a two-step process governing agency constructions of the statutes they administer. First,

the Court determines, "[u]sing conventional tools of statutory interpretation, ... whether the Legislature has spoken with certainty on the ... question." *Biogen IDEC MA, Inc. v. Treasurer & Receiver Gen.*, 454 Mass. 174, 186 (2009). If the Legislature's intent is clear, the Court must "give effect to" that intent. *Id.* Second, if the intent is ambiguous, the Court must then determine whether the agency's interpretation, which is due "substantial deference," is reasonable. *Id.* at 187. The Court will not reverse the agency's interpretation unless the "statute unambiguously bars the agency's approach," *Goldberg v. Bd. of Health of Granby*, 444 Mass. 627, 633 (2005), even if the Court does not think the agency's interpretation is the best interpretation, *Biogen*, 454 Mass. 187.

A party mounting a facial challenge to the substance of an agency's regulations "must establish the absence of any conceivable ground upon which [the rule] may be upheld." *Mass. Fed'n of Teachers*, 436 Mass. at 771 (quotation omitted) (alteration in original). A challenger cannot satisfy that burden "by arguing that the record does not affirmatively show facts which support the regulation." *Id.* at 771 (quotation omitted). Out of respect for the agency's expertise, this Court does not inquire "whether the regulation was supported by substantial evidence," or "weigh conflicting evidence supporting or opposing"

the final regulation. *Borden, Inc. v. Comm'r of Pub. Health*, 388 Mass. 707, 722-23 (1983) (quotation omitted). "[S]o long as the regulation is rationally related to [the statute's] goals," a court may not "substitute [its] judgement" for that of the agency. *Entergy*, 459 Mass. at 331-32 (quotation omitted).

I. The Global Warming Solutions Act Authorizes the Agencies to Regulate the Electric Sector, and the Agencies Exercised that Authority Properly When They Issued the Cap Regulation.

The GWSA's text and purposes refute any claim that the Cap Regulation exceeds the Agencies' authority. *See* NEPGA Br. 23-33; MMWEC Br. 8-16. Moreover, the Record demonstrates that the Agencies satisfied each of § 3(c)'s requirements.

A. GWSA § 3(c) Expressly Authorizes the Agencies to Regulate Greenhouse Gas Emissions from the Electric Sector.

1. GWSA § 3(c) Authorizes Regulations that Set "Levels and Limits Associated with the Electric Sector."

The GWSA does single out the electric sector among greenhouse gas emitters and expressly supports its regulation, because reducing electric-sector greenhouse gas emissions is essential to achieving the GWSA's near- and long-term emissions limits. *See supra* pp.10-11. Accordingly, the Legislature expressly directed that the Agencies "shall ... establish[]"

"[e]missions levels and limits associated with the electric sector." G.L. c. 21N, § 3(c).

To be sure, that authority is not unbridled. *See Kain*, 474 Mass. at 296-97. Instead, the GWSA "carves out a separate process," *id*. at 297, that requires electric-sector regulations to be established by both EEA and the Department, "in consultation with the [DOER], based on consumption and purchases of electricity from the regional electric grid, [and] taking into account the regional greenhouse gas initiative [RGGI] and the renewable portfolio standard [RPS]," G.L. c. 21N, § 3(c). The Agencies' authority to regulate the sector thus is clear, as long as the Agencies follow the § 3(c) process, as they did here. *Infra* pp.40-45.

The Legislature did not, as NEPGA and MMWEC suggest, NEPGA Br. 24-25; MMWEC Br. 10-11, preclude the Agencies from establishing declining annual limits on fossil-fueled power plants' greenhouse gas emissions to advance the GWSA's overarching purpose of reducing statewide emissions to "at least 80 per cent below the 1990" baseline. G.L. c. 21N, § 3(b)(4); *see Pepin*, 467 Mass. at 224. Instead, the Legislature broadly authorized the establishment of "levels and limits," G.L. c. 21N, § 3(c), and did not specify that they had to remain static over time--a provision that would have stymied the GWSA's steep reduction

directives. The Legislature's use of the plural term "limits" reinforces that conclusion: the Agencies have in essence established multiple limits, a new limit for each year between 2018 and 2050. *See Kain*, 474 Mass. at 290-91 (giving effect to Legislature's choice to use plural instead of singular).

2. The GWSA Authorizes In-State Electric Sector Limits.

In-state limits on electric-generation emissions thus are not inherently at odds with the GWSA. *Cf.* NEPGA Br. 22-33; Footprint Br. 11-16; MMWEC Br. 8-16. Again, GWSA § 3(c) *directs* the Agencies to establish "limits" on greenhouse gas emissions associated with the electric sector, and this Court has already rejected the idea that the GWSA authorizes establishing direct emissions limits on sources outside the Commonwealth. *See Kain*, 474 Mass. at 298 n.25. And the GWSA's directive that the Agencies "tak[e] into account" RGGI when they establish limits belies NEGPA's suggestion that RGGI itself can supply the "limits" contemplated by § 3(c). *See Kain*, 474 Mass. at 296-97.

An in-state limit on greenhouse gas emissions from fossil-fueled power plants serves the important--and, in the Agencies' view, necessary--role of ensuring that the electric-sector emissions reductions achieved by other policies are not offset by increased

electricity generation by fossil-fueled power plants in Massachusetts: a backstop that ensures the expected emissions-reduction trajectory becomes an enforceable reality. RA 2164, 3194. This "backstop" concept is rooted in the GWSA's declining statewide limits and is consistent with environmental law's longstanding non-degradation and anti-backsliding principles, which, broadly speaking, direct regulators to ensure that emissions reduction gains should not be lost. *E.g.*, *Sierra Club v. Ruckelshaus*, 344 F. Supp. 253, 256 (D.D.C. 1972) (interpreting Clean Air Act's purpose to prohibit degradation of existing air ambient air quality), *aff'd sub nom. Fri v. Sierra Club*, 412 U.S. 541 (1973).[20]

The GWSA's evident concern for reducing polluting emissions in affected communities throughout Massachusetts reinforces the conclusion that the Act contemplates in-state limits. *E.g.*, G.L. c. 21N, § 4(g) (public hearings to be "in regions that have the most significant exposure to air pollutants"), § 5(i) ("regulations ... maximize the total benefits to the commonwealth") & (v) ("consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources and

[20] *See also* N. William Hines, *A Decade of Nondegradation Policy in Congress and the Courts: The Erratic Pursuit of Clear Air and Clean Water*, 62 Iowa L. Rev. 643, 658-68 (1977).

other benefits to the economy, environment and public health"), § 7(a)(1), (3) (market-based emissions-reduction mechanisms must consider "localized impacts in communities that are already adversely impacted by air pollution," prevent toxic air pollutant emissions increases, and "maximize additional environmental and economic benefits for the commonwealth"). And, as the Agencies explained, the Cap and CES Regulations will also address these localized concerns by reducing the emissions of other harmful air pollutants. RA 3154.

3. GWSA § 3(d) Provides Further Support for the Agencies' Cap Regulation.

Section 3(d)'s authorization of "declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions" also supports--rather than undermines--the challenged regulations. G.L. c. 21N, § 3(d); *cf.* NEPGA Br. 7, 24; MMWEC Br. 8. It is well-settled that, where possible, courts should construe statutes as "an harmonious whole consistent with the legislative purpose." *Pentucket Manor Chronic Hosp., Inc. v. Rate Setting Comm'n*, 394 Mass. 233, 240 (1985).

Here, as the Agencies explained, the fact that § 3(c) "sets out separate procedures for regulation of the electric sector does not mean that Section 3(c) prohibits a Section 3(d) type emissions limit on the electric sector," as long as the limits "take into

consideration" § 3(c)'s specified factors--a point that NEPGA appears to concede. RA 3193; *see also* RA 3192; NEPGA Br. 25. Section 3(d)'s text applies broadly to "sources or categories of sources that emit greenhouse gas emissions," without limiting the types of sources that may be subject to its declining limits, G.L. c. 21N, § 3(d), and fossil-fueled power plants are clearly "sources" as that term is defined by the Act, *id.* § 1. Indeed, they are one of the largest greenhouse gas emissions sources.[21] For that reason alone, it would have been unreasonable for the Agencies to have interpreted § 3(d) to preclude a declining cap for the electric sector. The Agencies interpretation thus construes both sections together as further support for the Cap Regulation.

NEPGA wrongly claims that the more "specific statutory directives in § 3(c)" trump the "more general ones in § 3(d)." NEPGA Br. 26; *see also* MMWEC Br. 10-11. That canon of construction is of little help in this case, as it is only available where, unlike here, "a general statute and a specific statute

[21] A "[g]reenhouse gas emissions source," is a "source, or category of sources, of greenhouse gas emissions with emissions that are at a level of significance, as determined by the [EEA] secretary, that its participation in the program established under this chapter will enable the [EEA] secretary to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit." G.L. c. 21N, § 1.

cannot be reconciled." *Rita v. Carella*, 394 Mass. 822, 827 (1985). "Rather than mechanically applying the concept that the ... more 'specific' statute (whichever one that is) trumps the other, we should endeavor to harmonize the two statutes so that the policies underlying both may be honored." *See Commonwealth v. Harris*, 443 Mass. 714, 724–25 (2005). Indeed, GWSA § 3(d) arguably is *more* specific than § 3(c) in that it focuses only on one subset of the myriad types of limits available under § 3(c), though, again, it does apply to *all* "sources ... that emit greenhouse gas emissions." *Id.* § 3(d).

But, even if one provision were more specific than the other, "[s]pecific statutory authority to act in a particular respect does not bar consistent action under general statutory authority." *Grocery Mfrs. of Am., Inc. v. Dep't of Pub. Health*, 379 Mass. 70, 76-77 (1979); *see also Pepin*, 467 Mass. at 224-25 (holding statute's specific rare species habitat requirements did not preclude agency from creating different species habitat requirements designed to further statute's general species-protection goals). Here, GWSA § 3(d) does not preclude the Agencies from regulating the electric sector in a manner tailored to that sector and designed to achieve the GWSA's overarching purposes, and the two sections thus can and should be read harmoniously. *Entergy*, 459 Mass. at

331 (upholding statutory interpretation that "carries out the [statutory] scheme or design" (quotation omitted)). Indeed, the Legislature made this result manifest, stating expressly that nothing in the GWSA shall "prevent the imposition of more stringent limits on emissions." St. 2008, c. 298, § 8.

B. The Agencies Engaged in the Required Process and Considered the Necessary Factors When They Promulgated the Cap Regulation.

The voluminous record in this case refutes NEPGA and MMWEC's cursory suggestion that the Agencies did not account for GWSA § 3(c)'s requirements. NEPGA Br. 25, 31 n.8, 45-46 n.12; MMWEC Br. 14. That record shows that the Agencies satisfied § 3(c)'s requirements when they established the Cap and CES Regulations' limits and levels. In particular, § 3(c) establishes two procedural requirements and two substantive considerations--neither of which the Legislature spelled out precisely or directed the Agencies to consider in a particular manner--and each was satisfied here.

1. The Agencies Jointly Issued the Cap Regulation and Consulted with DOER.

The Legislature required both the Department and EEA jointly to establish § 3(c) "levels and limits," G.L. c. 21N, § 3(c),[22] and, in that same vein, required

[22] EEA's Secretary sets energy policy for the entire Commonwealth, G.L. c. 21A, § 2(17), and is responsible

the Agencies to "consult[]" with DOER during their establishment of those § 3(c) levels and limits. *Id.* § 3(c). *See* WEBSTER'S THIRD NEW INT'L DICTIONARY 490 (2002) (defining "consult" as "discuss," "confer," or "deliberate together").[23] It is undisputed that the Cap and CES Regulations were indeed issued jointly by EEA and the Department. G.L. c. 21N, § 3(c); *see also e.g.*, RA 3144, 3153, 3312; 310 C.M.R. §§ 7.74(1); 7.75(1). The Agencies also explained in detail their extensive consultations with DOER, RA 3148-49, which began in 2016 "to get feedback on the policy approaches for setting the emissions levels and limits on greenhouse gases in the electric sector," and concluded with "almost weekly, meetings ... to work through public comment[s]" and finalize the Regulations. RA 3149; *see also* RA 2084, 2140 & n.14, 2154, 3313. Thus, contrary to NEPGA's assertion, DOER did much more than "lend its name and imprimatur" to the Regulations, NEPGA Br. 45-46 n.12, it instead truly consulted on them, as the Record demonstrates.

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for overseeing and coordinating all "state agency actions" to meet the GWSA's near and long-term limits, *id.* § 2(30); *see also* RA 3191.

[23] DOER has special expertise in energy efficiency and clean-energy development, G.L. c. 21A, §§ 1, 6, 7, and is responsible for the Massachusetts RPS Program, RA 2090-91; G.L. c. 25A, § 11F, among other state clean energy programs, as well as RGGI's Massachusetts allowance auctions, RA 554 (225 C.M.R. §§ 13.01-.14).

2. The Cap Regulation Is "Based on" Consumption and Purchases of Electricity from the Regional Grid.

The Legislature in § 3(c) also required the Agencies to establish limits that are "*based on* consumption and purchases of electricity from the regional electric grid" (emphasis added). In other cases, including ones construing similar language in the federal Clean Air Act, courts have concluded that the term "based on" refers most naturally to a "starting point" or "foundation," and not both the starting *and* ending point. *E.g.*, *Sierra Club v. EPA*, 356 F.3d 296, 305-06 (D.C. Cir. 2004). So, too, here, where consumption of electricity serves as a starting point for analyzing what limit to establish for greenhouse gas emissions from fossil-fueled power plants, and encompasses all potential factors that influence electricity consumption, including the CES Regulation. *Infra* at pp.54-55.

Accordingly, the Agencies considered, for example how clean energy and demand resources (including energy efficiency programs) would reduce consumption and thereby reduce the need for fossil-fueled power plants to generate electricity, and they determined what emissions limits would be achievable over time without causing excessive leakage, based on historical data compiled in the state's Greenhouse Gas Inventory. RA 74-81, 2165-66 & Tbl.1), 1579-1797, 2165. And the

Agencies considered the fact that electrifying the transportation and building-heating sectors would increase electricity consumption. RA 2139-40.

The Agencies also proposed the CES Regulation, considered it as part of their analysis of the Cap Regulation, and then finalized it to ensure a sufficient supply of clean energy for consumption and purchase in Massachusetts to minimize the potential for leakage. RA 3158, 3169, 3176.[24] Finally, as explained in detail below, the Agencies commissioned the Emissions Study to examine both the Regulations' potential impacts on consumer electricity bills and how the Cap and CES Regulations would, working together, reduce both in-state and regional greenhouse gas emissions associated with the electric sector. *See* RA 3195-3264; *see also* RA 3148, 3157, 3175, 3178.

3. The Cap Regulation Takes RGGI and the RPS into Account.

The Agencies must also establish any limits only after "*taking into account*" RGGI and the RPS. G.L. c. 21N, § 3(c) (emphasis added). Again, the Legislature

[24] The Agencies explained that "the emissions limits included in [the Cap Regulation] were determined based on an assessment of changes that are expected to occur in the electric sector because of energy efficiency, new clean energy (including the impact of the CES), and power plant retirements." RA 3170-71. In other words, the limits were based on the ways in which these policies and programs would impact both consumption and purchases of electricity, as well as other expected changes in the electricity markets.

did not specify how the Agencies should weigh this consideration in establishing electric-sector levels and limits. RA 3191. The term "taking into account," like "based on," also denotes discretion, and refers simply to the Agencies' obligation to consider at least those two programs when they set § 3(c) levels or limits. *See* WEBSTER'S THIRD NEW INT'L DICTIONARY, *supra*, at 12 (defining account as "8c: Attention, Consideration: careful thought"). The Agencies thus interpreted § 3(c) to require them "to harmonize, to the extent possible, the requirements of any new regulations on the electric sector with those of RGGI and RPS." RA 3192.

And the Agencies did so. From the outset, they explained that the proposed Regulations were "designed to complement" the RPS and RGGI, RA 2154, and specifically solicited comments on that issue, RA 2166; *see also* RA 2171. And in responding to comments on the proposed regulations, the Agencies made clear that they considered the final Cap Regulation's potential impacts on RGGI and the RPS, RA 3149 (noting also consultations with DOER and DPU on this issue), and concluded that the final Cap and CES Regulations "are consistent with regional programs such as RGGI and RPS," and do not cause any unreasonable price impacts on those programs, RA 3154-55; *see* RA 3312.[25]

[25] Indeed, in response to comments, the Agencies made

The Cap Regulation thus does not "fly in the face of *Kain*," as NEPGA claims. Br. 32. Instead, the Agencies satisfied § 3(c)'s procedural requirements, took into account its two substantive considerations, and documented their compliance with § 3(c) in detail in extensive responses to comments on the proposed Regulations (which Chapter 30A does not even require them to do, *see* G.L. c. 30A, § 2; *accord Borden*, 388 Mass. at 722-23 nn.8-9). The Agencies thus fully satisfied § 3(c) in promulgating their presumptively valid Cap Regulation. *See* G.L. c. 30A, § 6.

C. GWSA § 16 Does Not Bar Electric-Sector Regulations that Extend Beyond 2020.

NEPGA and MMWEC also argue that the GWSA sunset clause in St. 2008, c. 298, § 16, prohibits "emissions limits on the electric sector pursuant to § 3(d)" that extend beyond 2020. NEPGA Br. 46-49; MMWEC Br. 23-24.[26] But that clause does not apply to § 3(c) electric-sector regulations like the Cap Regulation, and, in any event, should not be read to undermine both the GWSA's overarching purpose and § 16's underlying purpose, as NEPGA and MMWEC urge.

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two changes in the final regulations to promote further consistency with RGGI, including adding an allowance auction "nearly identical to DOER's existing RGGI auction regulations." RA 3184; *see also* RA 3180.

[26] GWSA § 16 provides that "regulations pursuant to subsection (d) of [G.L. c. 21N, § 3] ... shall expire on December 31, 2020." St. 2008, c. 298, § 16.

By its own terms, GWSA § 16 does not apply to electric-sector regulations issued under § 3(c), like the Cap and CES Regulations here. NEPGA Br. 24, 28-30, 33; MMWEC Br. 12; *supra* pp.40-45.[27] Instead, GWSA § 16 refers to regulations issued *exclusively* under § 3(d), and not those issued under § 3(c) citing § 3(d) as additional authority. St. 2008, c. 298, § 16. And, as NEPGA itself emphasizes, Br. 28-30, it makes sense "to treat emission reductions associated with the electric sector differently from other reductions in other sectors of the economy." *Kain*, 474 Mass. at 297.[28] "[E]lectricity service is essential to the health and well-being of all residents of the commonwealth, to public safety, and to orderly sustainable economic development," St. 1997, c. 164, § 1(a), and ensuring that "essential service" requires uniquely long-range planning and long-term capital investments. *See supra*

[27] The GWSA's legislative history confirms § 16's text, as each prior version applied only to § 3(d)'s predecessors, and not § 3(c)'s. *See* 2008 House Doc. No. 5035, sec. 17 (prior version of St. 2008, c. 298, § 16, applicable only to "subsection (d) of section (3)); 2008 Senate Doc. No. 2540, sec. 17(b) (as filed) (sunset provision embedded within prior version of § 3(d)); 2008 Senate Doc. No. 2531, sec. 17(b) (same); 2007 Senate Doc. No. 2423, sec. 3(d) (same); 2007 Senate Doc. No. 534, sec. 1, § 6C(c) (same).

[28] Notably, NEPGA's position on the sunset provision is inconsistent with its position at the outset of its brief, *see* Br. 23-28, that the electric-sector must be regulated solely under GWSA § 3(c), to which no such sunset provision applies.

p.15; RA 572-77, 585-86, 1216, 1218, 1220.[29] Long-range planning requires long-term certainty, which a short-lived electric-sector regulation would not provide.[30]

And even if the Agencies had relied *solely* on § 3(d) as the only authority for the Cap Regulation (they did not, *supra* pp.40-45), GWSA § 16 should not be read to invalidate the Cap Regulation's post-2020 limits. Indeed, while NEPGA claims that § 16 is "clear and unambiguous," NEPGA Br. 46, this Court "does not determine the plain meaning of a [word or clause] in isolation." *ENGIE Gas & LNG LLC v. Dep't of Public Utilities*, 475 Mass. 191, 199 (2016). Instead, the Court "concludes that a [clause] is unambiguous only *after* 'consider[ing] the specific language of a [provision] in connection with the statute as a whole and in consideration of the surrounding text, structure, and purpose of the Massachusetts act.'" *Id.* (citation omitted, alteration in original). Under that rule, a strict reading of § 16 is incongruous with

[29] ISO-NE, the entity now responsible for ensuring the regional grid's reliability, forecasts capacity, energy, loads, and transmission needs *ten years* in advance to ensure long-term grid reliability. *See* RA 1216, 1218, 2401.

[30] Indeed, citing long-term supply obligations (but ignoring the flexibility inherent in the Cap Regulation's trading mechanism), multiple commenters including NEPGA requested that the rules not take effect until *after* 2020. *See, e.g.*, RA 2953-54; RA 2829.

both the GWSA's and § 16's fundamental purposes, and the Agencies' middle-course-interpretation gives fullest effect to all of the Act's competing directives.

The GWSA's core purpose is to require the Commonwealth to take actions to reduce its statewide greenhouse gas emissions to "at least 80 percent below the 1990 level." G.L. c. 21N, § 3(b). And, in that vein, the Legislature directed the Agencies to formulate their actions to "maximize the ability of the [C]ommonwealth to meet" the 2050 limit. *See id.* Consistent with that paramount purpose, the *Kain* Court gave § 16's limited sunset clause "a sensible reading," construing its purpose as intended to ensure that the Department would set new, post-2020 limits "to ensure that [the] Statewide limit for 2030, which has yet to be established, w[ould] be met." *Kain*, 474 Mass. at 289 n.14. In other words, the sunset clause is a means to require the Department reevaluate each existing § 3(d) cap after 2020 and modify them as necessary to ensure that the relevant source's cap is matched to help meet the next limit. *See id.* Unlike the 2030 limit, however, the Legislature did paint the bullseye for the GWSA's long-term goal--"at least eighty percent below the 1990 level," G.L. c. 21N, § 3(b), and it, too, must be accounted for in establishing source limits if it is to be met.

NEPGA and MMWEC's strict reading of GWSA § 16's sunset clause is inconsistent with these purposes, especially as it relates to the electric sector. RA 3157, 3181-82. The Cap Regulation is intended to help meet the 2020 limit, but also, critically, to "set the [state] on a course to achieve the 2050 GWSA limit." RA 3154; *see also* 310 C.M.R. § 7.74(5)(a); RA 1292. "Progress toward th[at] goal must," the Agencies stated, "be sustained across the entire 2021 – 2050 time frame," RA 3181-82, and a post-2020 gap in regulation would grind that progress to a halt, an "absurd result" that this Court should not countenance. *See Flemings v. Contributory Retirement Appeal Bd.,* 431 Mass. 374, 375–376 (2000); *cf. Drummer Boy Homes Ass'n, Inc. v. Britton*, 474 Mass. 17, 28-29 (2016) (statute's temporal limit on priority liens does not bar imposition of multiple such liens, where contrary conclusion would undermine Act's purpose).

Importantly, and again, even if GWSA § 16's sunset clause did apply to the Cap Regulation, the Agencies crafted the Regulation to serve the purpose embodied in § 16, too. The rule requires the Agencies to undertake a comprehensive program review of the Cap Regulation by the end of 2021 and every ten years thereafter "to determine whether" they should amend it, among other things, to ensure "consistency with statewide CO_2 emissions limits." 310 C.M.R. § 7.74(11).

As this Court's interpretive rules dictate, the Agencies charted a middle-path that harmonizes § 16's sunset clause with § 3(b)'s 2050 limit and is entitled to substantial deference here. *DiFiore v. Am. Airlines, Inc.,* 454 Mass. 486, 491 (2009) (statute's provisions should be construed "in harmony with one another"); *Goldberg*, 444 Mass. at 633.

The Agencies' interpretation finds additional support in its structure and its legislative history. First, the Legislature's decision *not* to require §3(d) regulations to expire at each of the next statewide limits (2030, 2040, and 2050) underscores § 16's limited purpose as ensuring only that the Department will revisit any § 3(d) limits at the end of each decade to determine what, if any changes, are necessary to sustain a path to the 2050 limit. Second, § 16's sunset clause is a vestige of the GWSA's California analogue, on which the GWSA was modeled. *Kain*, 474 Mass. at 282 n.6; *see also* 2007 Senate Doc. No. 534, sec. 1, § 2(c). The GWSA departed from the California law in at least one major respect. Unlike the GWSA, the California law set *only* a 2020 limit, Cal. Health & Safety Code § 38561-62 (2006), and required legislative action to set post-2020 limits, *see* Assembly Bill 398, 2016 Cal. Stat. 92 (imposing 2030 limits). With this in mind, it would, of course make no sense to "'topple the temple' to correct the

lean of [§ 16's] single pillar," *Citizens to Save Spencer Cty. v. EPA*, 600 F.2d 844, 872 (D.C. Cir. 1979), especially where the Agencies' program review fulfills § 16's driving purpose.

II. The Power Plants Have Not Demonstrated That There Is No Conceivable Ground on Which the Cap Regulation May Be Upheld.

The Power Plants have not come remotely close to demonstrating the absence of any conceivable basis on which the Cap Regulation may be upheld. *Mass. Fed'n of Teachers*, 436 Mass. at 771. The Agencies' rational basis is manifest in and explained throughout the extensive Record. The Court thus need not strain to discern a "conceivable" basis for the Agencies' rule. *See, e.g., Shell Oil Co. v. Revere*, 383 Mass. 682, 689-90 (1981). Even without that highly deferential standard of review, however, the evidence the Power Plants' extol would not undermine the Agencies' well supported policy judgment; indeed, it, too, largely supports the Regulations. Their facial challenge must fail.

A. The Cap and CES Regulations Work Together To Achieve the GWSA's Purposes.

The Agencies' electric-sector regulations, promulgated in direct response to *Kain*, are a "critical" component of their ambitious regulatory efforts to meet the GWSA's near- and long-term limits. RA 3154. In the short term, electric-sector emissions

reductions will account for more than half (3.1% of a total 5.3%) of the reductions necessary to reach the GWSA's 2020 limit, as the Agencies explained both in proposing and finalizing the Cap and CES Regulations. RA 2138, 3155. And, in the long term, the sector must transition to non-fossil-fueled powered sources that produce zero or near-zero greenhouse gas emissions to meet the GWSA's 2050 limit, as the Agencies also explained. RA 1272, 1292, 3153-54. That transition must occur so that electrifying the other two highest-emitting sectors--the transportation and heating sectors, RA 378 Tbl.1--reduces their emissions, rather than simply shifting their emissions to the electric sector.

The Cap and CES Regulations work together to meet the GWSA's short- and long-term limits, together reducing power-plant emissions in Massachusetts and increasing the clean energy supply to decarbonize the electric sector for the electrified world of the future. RA 378; *see also* RA 3153-54, 3158, 3182; *Kain*, 474 Mass. at 287 (holding that the GWSA should be interpreted to promote the "act's central purpose of reducing emissions"); *Pepin*, 467 Mass. at 224. The Agencies' two-pronged approach is grounded in the GWSA, which mandates steep reductions in "statewide greenhouse gas emissions," that is, emissions from power plants in Massachusetts and emissions associated

with out-of-state generated electricity consumed here. G.L. c. 21N, § 1. With the Regulations' simultaneous attention to in-state generation and new clean-energy across the region for consumption in Massachusetts, the Agencies reasonably balanced the interests contemplated by the Act.

And while Agencies need not "convince the courts of the correctness of their legislative judgments," in this case the record demonstrates that the Cap and CES Regulations, together, will have their intended effect. *Shell Oil*, 383 Mass. at 688 (quotation omitted). Indeed, the comprehensive Emissions Study confirms their policy choice. It projects that, in every year from 2018 through 2030, new clean energy resources (including resources prompted by the CES Regulation and the RPS) and energy efficiency measures and other electricity market changes will drive in-state power-plant emissions below the Cap Regulation's declining limits. *See* RA 3214 Fig.3. The modeling thus projects that the Cap Regulation's declining limits will not themselves constrain (or "bind") power-plant operations to reduce emissions

Significantly, the Cap and CES Regulations, again, working together, are also projected to reduce greenhouse gas emissions in the Commonwealth *and* New England--decreasing statewide greenhouse gas emissions as defined by the GWSA. *See* RA 3214-15. As discussed

infra pp.67-68, the ISO-NE modeling cited by the Power Plants confirms this prediction. The Cap Regulation is thus unlikely to shift generation to out-of-state power plants. *Cf.* NEPGA Br. 11, 13, 20-21, 35-36; Footprint Br. 11-12, 15-16; MMWEC Br. 18. Instead, it will serve as an anti-backsliding measure, ensuring that the emissions-reduction gains caused by new clean energy resources are maintained, not lost. *Supra* pp.35-36; *Cf*. *Sierra Club v. EPA*, 325 F.3d 374, 379 (D.C. Cir. 2003) (upholding anti-backsliding rule even where rule was not itself intended to cause emissions reductions).

In reaching that conclusion, the Agencies were not just *entitled* to consider the combined effect of the Cap and CES Regulation; they were *required* to do so. GWSA § 3(c) requires the Agencies to consider how clean energy programs, among other things, will affect "consumption and purchases of electricity," taking other climate policies into account. G.L. c. 21N, § 3(c); *supra* pp.42-46; *see also Attorney Gen. v. Comm'r of Ins.*, 450 Mass. 311, 323–25 (2008) (deference is "particularly appropriate when reviewing" and agency's "choice of methodology" in analyzing and addressing an issue (quotation omitted)). Consistent with § 3(c)'s text, and unlike any other model in the record, *see infra* pp.66-72, the Agencies assessed the Cap Regulation's impact in the

world in which it would *actually* operate, not one arbitrarily omitting from consideration some of Massachusetts's clean energy policies, like the then-proposed CES Regulation. RA 3209-10. In that world, the Cap Regulation will have its intended effect.

B. The Cap Regulation Has Multiple Rational Bases.

The Cap Regulation, for multiple reasons, is a critical component of the Agencies' multifaceted approach to achieving the GWSA's 2020 and 2050 limits: (i) it serves as a backstop to ensure expected emissions reductions occur and prevents backsliding from one year to the next; (ii) it will draw more clean energy into Massachusetts if it limits power-plant emissions; (iii) it provides a clear, long-term signal to spur investment in clean energy resources and inspire other states to take action; and (iv) its allowance auction may generate revenue to further mitigate fossil-fueled power-plant emissions.

First and foremost, the Cap Regulation sets an enforceable "backstop" that tracks expected emissions reductions to ensure that emissions decreases expected to result from the Commonwealth's clean energy portfolio, including the CES Regulation, will occur. RA 3194. If, for example, energy demand increased more than expected or clean energy resources came online slower than anticipated, the Cap Regulation would

ensure that Massachusetts still reduces emissions from its own fossil-fueled power plants, with low risk of leakage.

The Emissions Study demonstrates that result: by modeling a hypothetical scenario that assumed higher electricity demand than currently forecast, the model shows that, even if emissions were to exceed expected levels and cause the cap to constrain power-plant operations, the Cap Regulation would ensure those reductions, with minimal increased emissions from out-of-state power plants in only one year. RA 3227. Indeed, in that scenario, the Cap Regulation caused even greater in-state emissions reductions (4%), and those reductions *more than offset* any increased out-of-state emissions, leading to a *net decline* in regional power-plant greenhouse gas emissions. RA 3226-28 (Figs.11-12).[31] The comprehensive Emissions Study thus refutes the "simple logic" of Footprint's argument. Br. 21. And, based on their thorough analyses and modeling, not simple logic, the Agencies also rejected more stringent limits, which, the

[31] To the extent the Cap Regulation does actually limit emissions, it would provide additional, important secondary benefits that the GWSA also aims to secure by decreasing harmful non-greenhouse gas power-plant emissions, which have localized impacts that harm Massachusetts communities. *See* RA 3154 & n.14; *see also* RA 445-46.

Emissions Study projects could have caused a less advantageous result, RA 3178, 3231-32 & Fig.15.

Second, the Cap Regulation aims to secure for Massachusetts the benefits of expected regional growth in clean energy generation, including growth caused by the state's own policies like the CES Regulation. *See* RA 3216 (clean energy is expected to grow from 19% of supply in 2016 to 33% in 2030). The Cap Regulation can achieve this aim, as the ISO-NE model shows, because if it is triggered, Massachusetts customers would be served by more clean energy. *See infra* pp.69-70; *see also* RA 3174. That is because the CES Regulation would increase the proportion of clean energy consumed in Massachusetts to compensate for decreased supply from in-state power plants. *See* example *infra* p.70 n.41.[32] The Agencies therefore concluded that the Cap Regulation would help the Commonwealth realize the emissions reductions attributable to consuming more clean energy in-place of emitting energy from in-state fossil-fueled power plants. RA 3174.

Third, by mapping out expected reductions through legally enforceable caps, the Cap Regulation sends a

[32] In its most basic form it could work like this: in 2020 Massachusetts imports 1,000 megawatts (MW) to match demand and, under the CES Regulation, 20% (or 200 MW) of that amount would need to qualify as clean energy. If the Cap instead binds in 2020 and results in the need to import 2,000 MW, clean energy consumed in the state could double (20% x 2,000 MW = 400 MW).

"clear signal" to energy markets and other states, which, in turn, will drive large capital investments, spur technological innovation, and encourage other states to take similar action. RA 3182. While these indirect effects are very difficult to quantify, some commentators have concluded that they indeed "may be more powerful than the direct effects" of state actions like the Cap Regulation.[33] The Regulation thus has the potential to reduce emissions even beyond what its limits require over the long term, by, for example, decreasing out-of-state fossil-fueled emissions and driving increased investment in more lower- and non-emitting clean energy resources.

Finally, following RGGI's "cap-trade-invest" model, if the Cap Regulation's allowance auctions do generate any revenue, the Agencies will invest it in clean energy and energy efficiency programs, among others. 310 C.M.R. § 7.74(6)(h)(1)(i). Those investments will "directly reduce greenhouse gas emissions and mitigate the harms of such emissions," including those allowed by the Cap Regulation. RA 3185. With RGGI, for example, auction-fund investments eliminated 5.3 million short tons of CO_2 as of 2017 that would otherwise have been emitted and resulted in

[33] Richard B. Stewart, *States and Cities as Actors in Global Climate Regulation: Unitary vs. Plural Architectures*, 50 Ariz. L. Rev. 681, 700 (2008).

$2.3 billion in lifetime savings for consumers. RA 2128. Thus, if the Cap Regulation's allowance auctions do generate funds, past experience shows that they, too, can further the GWSA's purposes.

C. The Cap Regulation is Not Expected to Cause "Leakage," But, Even if it Does, the GWSA Tolerates Some Interim Leakage.

Again, the Agencies anticipated, and the Emissions Study confirmed, that the Cap Regulation is not expected to cause any leakage. *Supra* pp.52-54. As explained below, the modeling results cited by the Power Plants actually support—rather than refute--this conclusion. *Infra* pp.66-72.

But, even if that were not true, neither § 3(c) specifically nor the GWSA generally prohibits all "leakage," as the Power Plants assert. NEPGA Br. 33-36, Footprint Br. 11-12; MMWEC Br. 17-19. While perhaps superficially appealing, their argument overlooks the GWSA's recognition that leakage is a common by-product of all greenhouse gas emissions regulation, and the GWSA's sole reference to leakage accordingly speaks only to minimizing it. G.L. c. 21N, § 5(vii) (EEA Secretary must consider as part of each five-year GWSA progress report "whether state actions *minimize* leakage" (emphasis added)). To be sure, the GWSA requires the Department to include in its greenhouse gas emissions inventory all emissions from

out-of-state electricity consumed in Massachusetts, *id.* § 1 (defining "statewide greenhouse gas emissions"), and § 3(c) requires the Agencies to consider consumption-based emissions, *id.* § 3(c). But had the Legislature intended to bar any regulation that may cause minimal interim "leakage" to further its ultimate goals (an untenable proposition), it certainly would have said so expressly.

GWSA § 3(c) itself does not employ the term "leakage." Where, as here, the Legislature has not spoken directly to an issue, this Court has been clear that agencies are "better suited to the task of clarifying the Legislature's plan," and their reconciliation of statutory silence with the whole Act is entitled to substantial deference. *See Goldberg*, 444 Mass. at 633-34.[34] The Agencies construed § 3(c)'s text in light of EEA's periodic obligation to consider "whether state actions minimize leakage," G.L. c. 21N, § 5(vii), to include a corresponding obligation to ensure that any § 3(c) limits similarly "minimize" leakage. That construction is eminently reasonable,

[34] *See also Middleborough v. Housing Appeals Comm.*, 449 Mass. 514, 523 (2007) (deference is "highest" where agency "spell[s] out" "details of legislative policy" to address ambiguity); *Taylor v. Housing Appeals Comm.*, 451 Mass. 149, 154 (2008) ("substantial deference" to agency's resolution of statutory ambiguity or gap).

and certainly not one that the GWSA "unambiguously bars." *Goldberg*, 444 Mass. at 633.

There are indeed, albeit somewhat counter-intuitively, sound policy reasons to tolerate minimal leakage in service of sustained, long-term emissions-reduction goals. The Legislature understood that Massachusetts cannot solve climate change alone, and hoped that Commonwealth's own aggressive actions would bring about reductions beyond its own borders. *See* 2007 Senate Doc. No. 534, sec. 1, § 2(c)-(e). The Cap and CES Regulations have the potential to do just that, serving as models and catalysts for extra-territorial actions and incentivizing technological development to accelerate the displacement of high-emitting sources. *See e.g.*, Stewart, *supra* p.58 n.33, at 700-01 (noting "the adverse impacts of [potential] leakage on aggregate emissions reductions ... can be outweighed by the other effects of local initiative, including market leverage, race-to-the-top, and demonstration effects").

The Power Plants' leakage-related claims rest on the false premise that out-of-state emissions sources will remain static. But economic factors and policy actions are already driving a rapid shift from fossil-fueled power plants to clean energy generation sources, resulting in a 42% decrease in Massachusetts greenhouse gas emissions between 1990 and 2013. RA

2139; *see also* RA 2370.[35] Despite their protests here, the electric sector, including NEPGA's own members, recognizes that "the foundation of the future decarbonized electric grid will be *zero-emission renewable energy*," RA 2982 (emphasis added), and is investing millions of dollars in resource-development and programs to achieve that end, *see* RA 2976-77. In fact, the dispatch principles that the Power Plants raise as a sword to swipe at the Cap Regulation dictate that result, because clean energy bids into the market at a lower price than fossil-fueled power plants, and ISO-NE thus calls on available clean resources first to satisfy electricity demand. *See supra* pp.18-19. Massachusetts' leadership on climate policy will expedite the trend toward a clean energy economy, not just in Massachusetts but in all New

[35] The New England Governors and Eastern Canadian Premiers have agreed to work toward achieving a 35-45% reduction in greenhouse gas emissions from the 1990 baseline by 2030, and our neighbors all have adopted their own near- and long-term emissions targets. Rhode Island and New Hampshire, for example, have set long-term targets at 80% below 1990 levels, *see* R.I. Gen. Laws § 42-6.2-2 (2014), N.H. CLIMATE CHANGE POLICY TASK FORCE, N.H. CLIMATE ACTION PLAN: A PLAN FOR ENERGY, ENVIRONMENTAL AND ECONOMIC DEVELOPMENT FUTURE 1, 5 (2009), while Connecticut has set its long-term target at 80% below 2001 levels, *see* Conn. Gen. Stat. § 22a-200d (2008). **Error! Bookmark not defined.**Vermont has set its target at 75% below the 1990 level and Maine has set a goal of 75-80% below the 2003 level, Vt. St. Ann. Tit. 10 § 578 (2006); Me. Rev. Stat. Ann. Tit. 38 § 576 (2003).

England states, even if its policies create a small risk of minimal leakage in the interim. RA 2595.

Experience with RGGI--the regional program touted by NEPGA as the only appropriate means to reduce fossil-fueled power-plant emissions, e.g., NEPGRA Br. at 31 n.8--bolsters the point. RGGI also seeks, like the Cap Regulation, only to "minimiz[e] ... leakage," a fact NEPGA concedes. NEPGA Br. 36. RGGI-associated leakage was and continues to be a focus of attention for the very same reasons that the Power Plants highlight here: RGGI includes *parts* of three regional grids and thus does not regulate all emissions sources that contribute electricity to each grid. RA 2586-87.[36] But hindsight has assuaged those fears. Even though, as is expected to be true of the Cap Regulation, the RGGI cap did not "bind" regulated sources' emissions, it caused greenhouse gas emissions reductions from both RGGI and non-RGGI sources, *not* leakage.[37] While the reasons for that are complex, the outcome provides

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[36] *See* Bruce R. Huber, *How Did RGGI Do It? Political Economy and Emissions Auctions*, 40 Ecology L.Q. 59, 86 (2013). In fact, some early studies suggested that emissions leakage rates due to shifting electricity generation from RGGI to non-RGGI states could exceed 50%. *See* Jonathan B. Wiener, *Think Globally, Act Globally: The Limits of Local Climate Policies*, 155 U. Pa. L. Rev. 1961, 1969-70 (2007).

[37] JONATHAN L. RAMSEUR, CONG. RESEARCH SERV., THE REGIONAL GREENHOUSE GAS INITIATIVE: LESSONS LEARNED AND ISSUES FOR CONGRESS 14 (2017), https://goo.gl/L4Q2cx; *but see* SIIKAMÄKI ET AL., *supra* p.11 n.8.

further reason to defer to the Agencies' expertise and policy choices to achieve the GWSA's purposes, including the anti-backsliding Cap Regulation, which is designed to minimize the risk of leakage.

D. The Power Plants' Proffered Modeling Does Not Demonstrate the Absence of Any Conceivable Ground for the Cap Regulation.

The Power Plants attempt to impugn the Cap Regulation with inflated claims that the Record provides "overwhelming," "uncontroverted," and "substantial" evidence that it will increase statewide greenhouse gas emissions. NEPGA Br. 35, 38, 42; Footprint Br. 16, 22; MMWEC Br. 17. These claims mischaracterize both the standard of review and the record and, accordingly, must fail.

1. The Power Plants Apply the Wrong Standard of Review.

The question in this facial challenge is whether any conceivable policy basis supports the rule. *See Entergy*, 459 Mass. at 331-32; *Mass. Fed'n of Teachers*, 436 Mass. at 771; *Borden*, 388 Mass. at 723. It is not, as NEPGA implies, Br. 42, "whether the regulation was supported by substantial evidence in the record before the agency"--a standard that applies only in the review of final adjudicatory decisions under G.L. c. 30A, § 14. *Borden*, 388 Mass. at 721. In this context, challengers may not "frustrate administrative policy by amassing facts [and] statistics" before the Court;

indeed, the Court does not "weigh conflicting evidence supporting or opposing" a final regulation. *Id.* at 723 (quotation omitted). Thus, the rationale described above is a more than sufficient basis to uphold the regulations, and the Court need go no further. But, to avoid any doubt, the Agencies address both NEPGA's claim that the Agencies' expert policy judgments are not entitled to deference and the Power Plants' model-based contentions.

NEPGA's invocation of *Texas v. EPA*, 829 F.3d 405 (5th Cir. 2016), does not call into doubt this Court's precedent on deference to expert-agency policy. First, unlike in *Texas*, the Agencies here do have specialized expertise in environmental regulation and electricity markets. They are "the entities primarily responsible for implementing the [GWSA]," *Kain*, 474 Mass. at 283, and EEA is responsible for setting Massachusetts's energy policy. *See, e.g.*, G.L. c. 21A, §§ 2-4, 7; *Kain*, 474 Mass. at 283 n.7. The deference due to their judgments is therefore at its height. *See Goldberg*, 444 Mass. at 633; *Borden*, 388 Mass. at 723. Second, and also unlike in *Texas*, grid reliability is not an issue here; just like the Agencies, ISO-NE, which is responsible for grid reliability, *supra* pp.15-16, found that the Cap and CES Regulations would not create any reliability issues. RA 2368. And NEPGA offers no support--because there is none--for its

claim that an expert agency's commission of additional analyses to confirm its own policy determinations diminishes the deference due to those determinations. *See Texas*, 829 F.3d at 432.

2. The Power Plants' Proffered Modeling "Evidence" Supports the Cap and CES Regulations.

Even were the Court to entertain the Power Plants' evidentiary claims (it should not), the four models on which they rely, far from invalidating the Agencies' rational basis, actually support the Agencies' conclusion that the Cap and CES Regulations, together, will ensure emissions decreases from in-state fossil-fueled power plants and increase the regional amount of clean energy that is available for import to and consumption in Massachusetts, thus minimizing the potential for leakage.

ISO-NE Model: The ISO-NE model, on which the Power Plants principally rely, in fact *bolsters* the Agencies' rationale in several ways. But appreciating why requires knowing what ISO-NE did, and did not, model. ISO-NE did not even purport to model the Cap Regulation's actual limits or any other specific mass-based limits on greenhouse gas emissions. Instead, ISO-NE sought to estimate the effect that an in-state cap, if triggered, would have on regional and Massachusetts electricity generation by *assuming* a

$2/ton allowance price (the price that power plants would pay to purchase Cap Regulation allowances), without explaining why it chose that price. RA 2379, 2382, 2392-94.[38]

Importantly, every scenario ISO-NE modeled shows that projected Massachusetts power-plant emissions for the year 2025 (the only year modeled) would actually be *below* the Cap Regulation's limits. *See* RA 2396; *accord* RA 3214 Fig.3, 3120 Fig.-ES-1. In other words, even in the ISO-NE scenarios that excluded the effects of new clean energy supplies (which would, again, reduce greenhouse gas emissions), ISO-NE's model projects that power-plant emissions would be well *below* the Cap Regulation's limits. If ISO-NE's emissions projections are correct, the cap would not constrain in-state power-plant generation and would not affect regional emissions--a result wholly consistent with the Agencies' analyses and the

[38] In choosing the high allowance price, ISO-NE assumed--in conflict with its own modeling--that allowances will be in high demand, or scarce, as could be the case if the cap actually limits allowable emissions. Other evidence suggests that allowances will not be scarce. The Emissions Study projected low demand and a near-zero price, *see* RA 3218-19, and the Tabors model, described below, predicted prices of $0.45 to $1.10 per ton, RA 3122, 3173, 3176. The allowance price is an output of (not an assumption in) the Emissions Study and the Tabors modeling, and they are thus entitled more weight than ISO-NE's unexplained, assumed $2/ton price.

Emissions Study. *See supra* pp.53-54.[39] ISO-NE's own modeling thus shows that the Cap Regulation would serve the valuable role contemplated by the Agencies--as an anti-backsliding measure, a backstop.

ISO-NE's $2/ton allowance price assumption, not any other constraint or limit, is what drives the power-plant emissions reductions in its model. And the results of that hypothetical constraint offer further support for the Agencies' chosen path. First, contrary to the Power Plants' claims, ISO-NE's model projects only a "modest increase in regional emissions"--by which it meant *less than* 1% of total New England greenhouse gas emissions in the one year it modeled. That is so even in model runs that exclude the positive impacts of additional clean energy, which would further reduce the need to "dispatch" fossil-

[39] The model results show that the Cap Regulation's 2025 limit is 300,000 metric tons *above* ISO-NE's worst-case emissions scenario, and thus would not be binding even under ISO-NE's conservative forecast. One can see this by comparing ISO-NE's projected emissions results for the modeled year 2025, *see* RA 2396, col.J, with the Agencies' 2025 aggregate limit, *see* RA 3275, 310 C.M.R. § 7.74(5)(a). ISO-NE's highest projected emissions equate to 7,070,000 metric tons (the retirement case of 7,777,000 short tons converted to metric tons), while the 2025 aggregate limit established by the Agencies is 7,387,919 metric tons (i.e., the 2018 8,955,051 metric ton limit minus 2.5% of the total aggregate limit for each of 7 years: 223,876 metric tons x 7 years).

fueled power plants. RA 2368; *see* RA 3176.[40] That hypothetical risk of minimal leakage in one year cannot prevent the Agencies from acting to secure emissions reductions across more than thirty years through the symbiotic Cap and CES Regulations. *See Borden*, 388 Mass. at 734 ("Some doubts as to whether tripolymer will cause adverse health effects to consumers need not prevent the commissioner from acting to protect the public.").

Second, ISO-NE's results show how a binding constraint (e.g., the $2/ton price) can reduce in-state power-plant emissions while also ensuring that Massachusetts captures in its statewide greenhouse gas inventory more of the emissions reductions driven by Massachusetts' clean energy policies, like the CES Regulation. RA 2396; RA 3176; *see supra* pp.57-58. In other words, in the $2/ton scenario ISO-NE modeled, limiting in-state fossil-fueled power-plant generation results in Massachusetts importing more clean energy.[41]

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[40] To calculate the percentage difference in regional emissions attributable to the $2/ton allowance price assumption, one has to divide the difference in New England greenhouse gas emissions caused by the $2/ton allowance price assumption, RA 2396, col.P, by the total New England greenhouse gas emissions for the relevant year, RA 2396, col.O.

[41] This conclusion is evident from comparing the effects of additional clean energy and a $2/ton price on emissions from Massachusetts in-state power plants, RA 2396, col.L, and emissions from regional generation, RA 2396, col.O. Without the $2/ton price

Tabors Model: Footprint and NEPGA's reliance on the Tabors model does not help them either; instead, like the ISO-NE model, it further supports the Cap and CES regulations. Footprint Br. 16. Tabors modeled the effect of the Cap Regulation's limits between 2018 and 2025. Although it does not appear to have fully incorporated additional clean energy resulting from the CES Regulation, Tabors nonetheless projects steep greenhouse gas emissions reductions from Massachusetts power plants, with only "minor" projected regional emissions increases (0.1%) in only two early years of the seven modeled years. RA 3122, 3131; *see also* RA 3119-21, 3127-28, 3172-73. The model also supports the Agencies' conclusion that new clean-energy supplies (due to the CES Regulation and other clean-energy policies) will further minimize the risk of leakage, including *before* 2020. RA 3119-20, 3129, 3131. Specifically, it shows that, after 2020, anticipated imports of hydro and wind power from Quebec and New York would drive emissions "well below the [Cap

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constraint, the addition of clean energy reduces Massachusetts greenhouse gas emissions by about 2 million short tons, as compared with an approximately 6 million regional reduction. With the $2/ton price constraint, the addition of clean energy reduces Massachusetts greenhouse gas emissions by about 3 million short tons, as compared with an approximately 6 million regional reduction. Thus, when the price constraint is applied, Massachusetts realizes about one million additional short tons in emissions reductions tied to clean energy resources.

Regulation's] aggregate cap," eliminating any potential leakage concern. RA 3121.

Dynegy Model: Footprint and NEPGA's reliance on the Dynegy model is surprising, because Dynegy did not explain its assumptions, and its dramatically different results demonstrate that those assumptions were wildly inconsistent with the assumptions used by even the two-other non-agency models--ISO-NE and Tabors. RA 3175. Indeed, Dynegy's results suggest that the Cap Regulation would curtail Massachusetts power-plant operation in 2025 by a rate at least four times higher than any other model (44%).[42] Its unexplained assumptions and drastically different results demonstrate the wisdom of the Agencies' choice to discount the model. *See* RA 3175.

Moreover, and despite these defects, the results, in Dynegy's own words, still forecast only "modest" or "slight" regional emissions increases tied to the Cap Regulation, bolstering the conclusion that the regulation will ensure reductions in Massachusetts while minimizing the risk of leakage, even in extreme

[42] *Compare* RA 2812 (Dynegy model), *with* RA 3227-28 (Emissions Study, projecting no Cap Regulation limit-driven reductions except for one year in high-demand alternative scenario), RA 2396 (ISO-NE model, showing, among other things, that projected emissions for 2025 are less than the Cap Regulation emissions limit, *see supra* p.68 n.39), *and* RA 3119-20 (Tabors model, projecting no Cap Regulation-driven reductions beyond 2020); *see* RA 3175 (Response to Comments).

scenarios far from expected reality. *Compare* RA 2811-12, *with* RA 3175 (Response to Comments).

NRG Model: Finally, and even worse, the NRG "modeling" on which the Power Plants rely amounts to a single, conclusory statement that "total regional emissions would increase under the proposed 310 CMR 7.74," and thus cannot cast any doubt on the Agencies' path. RA 2980. While the Power Plants ask this Court simply to take NRG at its word, without any detail about its methods, assumptions, years studied, or results, this Court may not substitute such a slender reed for the Agencies' well-founded policy choice. *Entergy*, 459 Mass. at 331-32; *Borden*, 388 Mass. at 723.

* * *

The Agencies considered carefully these modeling results and concluded that they either offered further support for the Agencies' expert judgment or did not offer a sufficient level of detail to undermine it, RA 3171-76, and that was more than Massachusetts law required them to do. *Supra* p.45. And, despite this largely supportive record, the Agencies still took to heart the "small possible shift in emissions" identified by commenters, RA 2369, and responded by commissioning the Emissions Study, rejecting requests to establish a more stringent limit, and including mitigation measures in the final rule to further

minimize that risk. *See* RA 3184, 3187; *supra* pp.26-28 (describing the Agencies' decision to include an allowance auction and an emergency-deferred-compliance provision to further minimize the risk of leakage and increase compliance flexibility).

In sum, although in theory there could be "circumstances where scientific evidence could be so severely impeached as to render any reliance upon it unreasonable," that "is not the case here," *Borden*, 388 Mass. at 729 n.20, where the modeling the Power Plants tout largely *supports* the Cap Regulation. Far from meeting their "substantial burden" to establish "the absence of any conceivable ground upon which [the rule] may be upheld," they have confirmed that the Cap and CES Regulations, working together, are a reasonable approach to achieving the GWSA's mandate. *Mass. Fed'n of Teachers*, 436 Mass. at 771 (quotation omitted, alteration in original).

Massachusetts has a long history as a leader in addressing climate change, reducing emissions both here at home and across the nation. *See Mass. v. EPA*, 549 U.S. 497 (2007); 310 C.M.R. § 7.29 (2008); *see also* RA 2162. As the Legislature intended, the Cap and CES Regulations maintain the Commonwealth's leadership role on climate change issues. 2007 Senate Doc. No. 534, sec. 1, § 2(c); 2007 Senate Doc. No. 535, sec. 1, § 3(d) As this Court recognized, the GWSA "represents

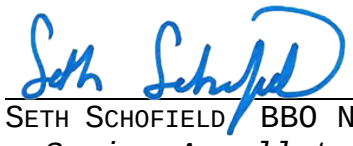
a commitment by the Commonwealth to the most ambitious greenhouse gas reductions for a single state in the entire country," and the Cap and CES Regulations are necessary to achieve its bold mandates. *Kain*, 474 Mass. at 282-83 (quotation omitted). This Court should uphold the Agencies' well-founded policy choice.

CONCLUSION

For the foregoing reasons, this Court should declare that the Cap Regulation is lawful and enter judgment for the Agencies.

Respectfully submitted,

MAURA HEALEY
ATTORNEY GENERAL



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April 13, 2018

MASS. R. A. P. 16(K) CERTIFICATION

I, Seth Schofield, certify that the foregoing Brief complies with the rules of court that pertain to the filing of briefs, including, but not limited to: Mass. R. A. P. 16(a)(6) (pertinent findings or memorandum of decision); Mass. R. A. P. 16(e) (references to the record); Mass. R. A. P. 16(f) (reproduction of statutes, rules, regulations); Mass. R. A. P. 16(h) (length of briefs); Mass. R. A. P. 18 (appendix to briefs); and Mass. R. A. P. 20 (form of briefs, appendices, and other papers).

Seth Schofield

ADDENDUM

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THENCE turning and running N09°-02'-02"W, sixty and 00/100 (60.00) feet to the point of beginning.

This abandoned easement contains 3599 square feet, more or less, according to the plan.

Approved August 7, 2008.

Chapter 298. AN ACT ESTABLISHING THE GLOBAL WARMING SOLUTIONS ACT.

Be it enacted, etc., as follows:

SECTION 1. Section 19 of chapter 6A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by striking out subsection (f) and inserting in place thereof the following 2 subsections:-

(f) The secretary shall collaborate with other state agencies to reduce greenhouse gas emissions to achieve the greenhouse gas emission limits established in chapter 21N.

(g) Nothing in this chapter shall be construed to confer any powers or impose any duties upon the secretary with respect to the foregoing agencies and authorities except as expressly provided by law.

SECTION 2. Section 1 of chapter 16 of the General Laws, as so appearing, is hereby amended by striking out subsection (d) and inserting in place thereof the following 2 subsections:-

(d) The commissioner shall collaborate with other state agencies to reduce greenhouse gas emissions to the limits established in chapter 21N.

(e) The commissioner may promulgate rules and regulations to effectuate the purposes of this chapter.

SECTION 3. Section 2 of chapter 21A of the General Laws, as so appearing, is hereby amended by adding the following clause:-

(30) consistent with chapter 21N, oversee state agency efforts to address and diminish the impacts of climate change by coordinating state agency actions to achieve the greenhouse gas emissions limits established in chapter 21N.

SECTION 4. Section 8 of said chapter 21A, as so appearing, is hereby amended by inserting after the second paragraph the following paragraph:-

The department of environmental protection shall assist in the implementation of chapter 21N.

SECTION 5. Section 16 of said chapter 21A, as so appearing, is hereby amended by adding the following paragraph:-

Any person who fails to comply with or otherwise violates chapter 21N shall be liable for a civil administrative penalty not to exceed $25,000 for each day the violation continues.

SECTION 6. The General Laws are hereby amended by inserting after chapter 21M

the following chapter:-

Chapter 21N.

CLIMATE PROTECTION AND GREEN ECONOMY ACT.

Section 1. As used in this chapter the following words shall have the following meanings unless the context clearly requires otherwise:-

"Allowance", an authorization to emit, during a specified year, up to 1 ton of carbon dioxide equivalent.

"Alternative compliance mechanism", an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emissions reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable and enforceable.

"Carbon dioxide equivalent", the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

"Department", the department of environmental protection.

"Direct emissions", emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company owned or company-leased motor vehicles.

"Direct emissions reduction", a greenhouse gas emission reduction action made by a greenhouse gas emissions source at that source.

"Emission", emission of a greenhouse gas into the air.

"Emissions reduction measures", programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources that are designed to reduce emissions of greenhouse gases.

"Entity", a person that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity or a commercial or industrial site including, but not limited to, a transportation fleet.

"Executive office", the executive office of energy and environmental affairs.

"Facility", a building, structure or installation located on contiguous or adjacent properties of an entity.

"Greenhouse gas", any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"Greenhouse gas emissions limit", an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the secretary, expressed in tons of carbon dioxide equivalents.

"Greenhouse gas emissions source", a source, or category of sources, of greenhouse

gas emissions with emissions that are at a level of significance, as determined by the secretary, that its participation in the program established under this chapter will enable the secretary to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

"Indirect emissions", emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

"Leakage", the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

"Market-based compliance mechanism", (i) a system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking, credits and other transactions governed by rules and protocols established by the secretary or the regional greenhouse gas initiative, that result in the same greenhouse gas emissions reduction, over the same time period, as direct compliance with a greenhouse gas emissions limit or emission reduction measure adopted by the executive office pursuant to this chapter.

"Person", an agency or political subdivision of the commonwealth, a state, public or private corporation or authority or an individual, trust firm, joint stock company, partnership, association or other entity or group thereof or an officer, employee or agent thereof.

"Secretary", the secretary of energy and environmental affairs.

"Statewide greenhouse gas emissions", the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in the commonwealth, accounting for transmission and distribution line losses, whether the electricity is generated in the commonwealth or imported; provided, however, that statewide greenhouse gas emissions shall be expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit", the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the secretary.

Section 2. (a) The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions. The department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this chapter. The regulations shall: (1) establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources; provided, however, that in establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium; (2) annually require the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases to report annually to the regional registry direct stack emissions of greenhouse gases from such sources; (3) require the owner or operator of a facility that has stationary emissions sources that emit greenhouse gases in excess of 5,000 tons of greenhouse gases per year in carbon dioxide equivalents to report annually to the regional registry direct emissions of greenhouse gases from such sources; provided, however,

that the department shall develop a simplified estimation form to assist facilities in determining who shall report emissions and shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry; (4) provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to clauses (2) and (3); provided, however, that the greenhouse gas emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate; (5) require reporting of greenhouse gas emissions from generation sources producing all electricity consumed, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments and municipal light boards as defined in section 1 of chapter 164A; (6) ensure rigorous and consistent accounting of emissions and provide reporting tools and formats to ensure collection of necessary data; and (7) ensure that greenhouse gas emissions sources maintain comprehensive records of all reported greenhouse gas emissions.

(b) The department shall: (1) consult with the secretary on periodic review and updates of emission reporting requirements, as necessary; and (2) review existing and proposed state, federal and international greenhouse gas emissions reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this chapter and other programs and to streamline reporting requirements on greenhouse gas emissions sources.

(c) The department shall triennially publish a state greenhouse gas emissions inventory that includes comprehensive estimates of the quantity of greenhouse gas emissions in the commonwealth for the last 3 years in which data is available.

Section 3. (a) The department shall, pursuant to chapter 30A, determine the statewide greenhouse gas emissions level in calendar year 1990 and reasonably project what the emissions level will be in calendar year 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009. This projection shall hereafter be referred to as the projected 2020 business as usual level.

(b) The secretary shall, in consultation with the department and the department of energy resources, adopt the following statewide greenhouse gas emissions limits: (1) a 2020 statewide emissions limit and a plan to achieve that limit pursuant to section 4; (2) an interim 2030 emissions limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2030 interim emissions limits shall maximize the ability of the commonwealth to meet the 2050 emissions limit; (3) an interim 2040 emissions limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2040 interim emissions limit shall maximize the ability of the commonwealth to meet the 2050 emissions limit; and (4) a 2050 statewide emissions limit that is at least 80 per cent below the 1990 level.

(c) Emissions levels and limits associated with the electric sector shall be established

by the executive office and the department, in consultation with the department of energy resources, based on consumption and purchases of electricity from the regional electric grid, taking into account the regional greenhouse gas initiative and the renewable portfolio standard.

(d) The department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions

Section 4. (a) The secretary shall adopt the 2020 statewide greenhouse gas emissions limit pursuant to subsection (b) of section 3 which shall be between 10 per cent and 25 per cent below the 1990 emissions level and a plan for achieving said reduction. The secretary shall consult with all state agencies and regional authorities with jurisdiction over sources of greenhouse gases on all elements of the emissions limit and plan that pertain to energy-related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service and statewide fuel supplies, to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the secretary are complementary, non-duplicative and can be implemented in an efficient and cost-effective manner. The 2020 statewide emissions limit and implementation plan shall comply with this section.

(b) The secretary shall analyze the feasibility of measures to comply with the emissions limit established in subsection (a). Such measures shall include, but not be limited to, the electric generating facility aggregate limit established pursuant to section 12, direct emissions reduction measures from other sectors of the economy, alternative compliance mechanisms, market-based compliance mechanisms and potential monetary and nonmonetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of greenhouse gas emissions limits.

(c) The secretary shall consider all relevant information pertaining to greenhouse gas emissions reduction goals and programs in other states and nations.

(d) The secretary shall evaluate the total potential costs and economic and noneconomic benefits of various reduction measures to the economy, environment and public health, using the best available economic models, emissions estimation techniques and other scientific methods.

(e) The secretary shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions and shall recommend a de minimis threshold of greenhouse gas emissions below which emissions reduction requirements shall not apply.

(f) The secretary shall identify opportunities for emissions reduction measures from all verifiable and enforceable voluntary actions.

(g) The secretary shall conduct public hearings on the proposed 2020 emission limit and implementing plan. The secretary shall conduct a portion of these workshops in regions

that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The secretary shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every 5 years, including the plans to implement the 2030, 2040 and 2050 statewide emission limits.

Section 5. The secretary shall monitor the implementation of regulations relative to climate change and shall, every 5 years, publish a report which shall include recommendations regarding such implementation. The report shall include, without limitation: (i) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth and encourage early action to reduce greenhouse gas emissions; (ii) whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities; (iii) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this chapter receive appropriate credit for early voluntary reductions; (iv) whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions; (v) consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources and other benefits to the economy, environment and public health; (vi) whether state actions minimize the administrative burden of implementing and complying with these regulations; (vii) whether state actions minimize leakage; (viii) consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases; (ix) whether greenhouse gas emissions reductions achieved are real, permanent, quantifiable, verifiable and enforceable; and (x) recommendations for future policy action. The report shall be filed with the clerk of the house of representatives, the clerk of the senate, the chairs of the house and senate committees on ways and means, the chairs of the joint committee of telecommunications, utilities and energy and the chairs of the joint committee on the environment, natural resources and agriculture.

Section 6. In implementing its plan for statewide greenhouse gas emissions limits, the commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings and transportation.

Section 7. (a) The secretary, in consultation with the executive office of administration and finance, may consider the use of market-based compliance mechanisms to address climate change concerns; provided, however, that prior to the use of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the secretary shall: (1) consider the potential for direct, indirect and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution; (2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions

of nitrous oxide, sulfur dioxide and mercury; and (3) maximize additional environmental and economic benefits for the commonwealth, as appropriate.

(b) The secretary may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emissions limits and mandatory emissions reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(c) The executive office and the department may work with the participating regional greenhouse gas initiative states and other interested states and Canadian Provinces to develop a plan to expand market-based compliance mechanisms such as the regional greenhouse gas initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(d) The executive office shall monitor compliance with and enforce any rule, regulation, order, emissions limitation, emissions reduction measure or market-based compliance mechanism adopted by the executive office or department pursuant to this chapter. The department may impose a civil administrative penalty pursuant to section 16 of chapter 21A for a violation of any rule, regulation, order, emissions limitation, emissions reduction measure or other measure adopted by the executive office pursuant to this chapter.

Section 8. The secretary shall convene an advisory committee to advise the executive office in overseeing the greenhouse emissions reduction measures. The advisory committee shall consist of representatives from the following sectors: commercial, industrial and manufacturing; transportation; low-income consumers; energy generation and distribution; environmental protection; energy efficiency and renewable energy; local government; and academic institutions.

Section 9. Nothing in this chapter shall affect the authority of the public utility commission or the obligation of an electrical utility to provide customers with safe and reliable electric service. Nothing in this chapter shall preclude, prohibit or restrict the construction of a new facility or the expansion of an existing facility subject to regulation under this chapter, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this chapter.

SECTION 7. Section 61 of chapter 30 of the General Laws is hereby amended by inserting after the first paragraph, as appearing in the 2006 Official Edition, the following paragraph:-

In considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board, commission or authority shall also consider reasonably foreseeable climate change impacts, including additional greenhouse gas emissions, and effects, such as predicted sea level rise.

SECTION 8. Nothing in this act shall restrict the secretary of energy and environmental affairs from adopting greenhouse gas emissions limits or emissions reduction measures prior to January 1, 2011, that are consistent with general or special laws or rules or regulations, imposing those limits prior to January 1, 2012, or providing early reduction

credit, where appropriate, nor shall this act prevent the imposition of more stringent limits on emissions.

SECTION 9. Notwithstanding any general or special law to the contrary, the secretary shall convene an advisory committee to analyze strategies for adapting to the predicted impacts of climate change in the commonwealth. The advisory committee shall be chaired by the secretary, or his designee, and comprised of representatives with expertise in the following areas: transportation and built infrastructure; commercial, industrial and manufacturing activities; low income consumers; energy generation and distribution; land conservation; water supply and quality; recreation; ecosystems dynamics; coastal zone and oceans; rivers and wetlands; and local government.

The committee shall file a report of its findings and recommendations regarding strategies for adapting to climate change not later than December 31, 2009.

SECTION 10. Notwithstanding any general or special law to the contrary, the executive office of energy and environmental affairs shall promulgate regulations pursuant to section 2 of chapter 21N of the General Laws not later than January 1, 2009.

SECTION 11. Clauses (2) and (3) of the third sentence of subsection (a) of said section 2 of said chapter 21N shall take effect not later than April 15, 2009.

SECTION 12. Clauses (4) and (5) of said third sentence of said subsection (a) of said section 2 of said chapter 21N shall be implemented not later than July 1, 2009.

SECTION 13. The first inventory required pursuant to subsection (c) of said section 2 of said chapter 21N shall be published not later than December 31, 2010.

SECTION 14. Subsection (a) of section 3 of said chapter 21N shall be implemented not later than July 1, 2009.

SECTION 15. Clause (1) of subsection (b) of said section 3 of said chapter 21N shall be implemented not later than January 1, 2011.

SECTION 16. The department of environmental protection shall promulgate regulations pursuant to subsection (d) of said section 3 of said chapter 21N not later than January 1, 2012, which regulations shall take effect on January 1, 2013, and shall expire on December 31, 2020.

SECTION 17. The 2020 statewide greenhouse gas initiative required to be adopted pursuant to subsection (a) of section 4 of said chapter 21N shall be adopted not later than January 1, 2011.

SECTION 18. Notwithstanding any general or special law to the contrary, the executive office of energy and environmental affairs shall publish the report required pursuant to section 5 of said chapter 21N not later than January 1, 2014.

Approved August 7, 2008.

Massachusetts Global Warming Solutions Act
G.L. c. 21N, §§ 1 - 9 (West 2018)

G.L. c. 21N, § 1. Definitions

As used in this chapter the following words shall have the following meanings unless the context clearly requires otherwise: --

“Allowance”, an authorization to emit, during a specified year, up to 1 ton of carbon dioxide equivalent.

“Alternative compliance mechanism”, an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emissions reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable and enforceable.

“Carbon dioxide equivalent”, the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

“Department”, the department of environmental protection.

“Direct emissions”, emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company owned or company-leased motor vehicles.

“Direct emissions reduction”, a greenhouse gas emission reduction action made by a greenhouse gas emissions source at that source.

“Emission”, emission of a greenhouse gas into the air.

“Emissions reduction measures”, programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources that are designed to reduce emissions of greenhouse gases.

“Entity”, a person that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity or a commercial or industrial site including, but not limited to, a transportation fleet.

“Executive office”, the executive office of energy and environmental affairs.

“Facility”, a building, structure or installation located on contiguous or adjacent properties of an entity.

“Greenhouse gas”, any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

“Greenhouse gas emissions limit”, an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the secretary, expressed in tons of carbon dioxide equivalents.

“Greenhouse gas emissions source”, a source, or category of sources, of greenhouse gas emissions with emissions that are at a level of significance, as determined by the secretary, that its participation in the program established under this chapter will enable the secretary to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

“Indirect emissions”, emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

“Leakage”, the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

“Market-based compliance mechanism”, (i) a system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking, credits and other transactions governed by rules and protocols established by the secretary or the regional greenhouse gas initiative, that result in the same greenhouse gas emissions reduction, over the same time period, as direct compliance with a greenhouse gas emissions limit or emission reduction measure adopted by the executive office pursuant to this chapter.

“Person”, an agency or political subdivision of the commonwealth, a state, public or private corporation or authority or an individual, trust firm, joint stock company, partnership, association or other entity or group thereof or an officer, employee or agent thereof.

“Secretary”, the secretary of energy and environmental affairs.

“Statewide greenhouse gas emissions”, the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in the commonwealth, accounting for transmission

and distribution line losses, whether the electricity is generated in the commonwealth or imported; provided, however, that statewide greenhouse gas emissions shall be expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit", the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the secretary.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 2. Regulations for reporting and verifying statewide greenhouse gas emissions; review; inventory

(a) The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions. The department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this chapter. The regulations shall: (1) establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources; provided, however, that in establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium; (2) annually require the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases to report annually to the regional registry direct stack emissions of greenhouse gases from such sources; (3) require the owner or operator of a facility that has stationary emissions sources that emit greenhouse gases in excess of 5,000 tons of greenhouse gases per year in carbon dioxide equivalents to report annually to the regional registry direct emissions of greenhouse gases from such sources; provided, however, that the department shall develop a simplified estimation form to assist facilities in determining who shall report emissions and shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry; (4) provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to clauses (2) and (3); provided, however, that the greenhouse gas emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate; (5) require reporting of greenhouse gas emissions from generation sources producing all electricity consumed, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments and municipal light boards as defined in section 1 of chapter 164A; (6) ensure rigorous and consistent accounting of emissions and provide reporting tools and formats to ensure collection of necessary data; and (7) ensure that greenhouse gas emissions sources maintain

comprehensive records of all reported greenhouse gas emissions.

(b) The department shall: (1) consult with the secretary on periodic review and updates of emission reporting requirements, as necessary; and (2) review existing and proposed state, federal and international greenhouse gas emissions reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this chapter and other programs and to streamline reporting requirements on greenhouse gas emissions sources.

(c) The department shall triennially publish a state greenhouse gas emissions inventory that includes comprehensive estimates of the quantity of greenhouse gas emissions in the commonwealth for the last 3 years in which data is available.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 3. Projected 2020 business as usual level; adoption of statewide greenhouse gas emissions limits; levels and limits for electric sector; establishment of declining annual aggregate limit

(a) The department shall, pursuant to chapter 30A, determine the statewide greenhouse gas emissions level in calendar year 1990 and reasonably project what the emissions level will be in calendar year 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009. This projection shall hereafter be referred to as the projected 2020 business as usual level.

(b) The secretary shall, in consultation with the department and the department of energy resources, adopt the following statewide greenhouse gas emissions limits: (1) a 2020 statewide emissions limit and a plan to achieve that limit pursuant to section 4; (2) an interim 2030 emissions limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2030 interim emissions limits shall maximize the ability of the commonwealth to meet the 2050 emissions limit; (3) an interim 2040 emissions limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2040 interim emissions limit shall maximize the ability of the commonwealth to meet the 2050 emissions limit; and (4) a 2050 statewide emissions limit that is at least 80 per cent below the 1990 level.

(c) Emissions levels and limits associated with the electric sector shall be established by the executive office and the department, in consultation with the department of energy resources, based on consumption and purchases of electricity from the regional electric grid, taking into account the regional greenhouse gas initiative and the renewable portfolio standard.

(d) The department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 4. Adoption of 2020 statewide greenhouse gas emissions limit; compliance measures; information gathering; costs-benefit analysis; de minimus threshold for emissions reduction requirements; voluntary actions for reductions; public hearings; updates to plan

(a) The secretary shall adopt the 2020 statewide greenhouse gas emissions limit pursuant to subsection (b) of section 3 which shall be between 10 per cent and 25 per cent below the 1990 emissions level and a plan for achieving said reduction. The secretary shall consult with all state agencies and regional authorities with jurisdiction over sources of greenhouse gases on all elements of the emissions limit and plan that pertain to energy-related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service and statewide fuel supplies, to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the secretary are complementary, non-duplicative and can be implemented in an efficient and cost-effective manner. The 2020 statewide emissions limit and implementation plan shall comply with this section.

(b) The secretary shall analyze the feasibility of measures to comply with the emissions limit established in subsection (a). Such measures shall include, but not be limited to, the electric generating facility aggregate limit established pursuant to section 12, direct emissions reduction measures from other sectors of the economy, alternative compliance mechanisms, market-based compliance mechanisms and potential monetary and nonmonetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of greenhouse gas emissions limits.

(c) The secretary shall consider all relevant information pertaining to greenhouse gas emissions reduction goals and programs in other states and nations.

(d) The secretary shall evaluate the total potential costs and economic and noneconomic benefits of various reduction measures to the economy, environment and public health, using the best available economic models, emissions estimation techniques and other scientific methods.

(e) The secretary shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions and shall recommend a de

minimis threshold of greenhouse gas emissions below which emissions reduction requirements shall not apply.

(f) The secretary shall identify opportunities for emissions reduction measures from all verifiable and enforceable voluntary actions.

(g) The secretary shall conduct public hearings on the proposed 2020 emission limit and implementing plan. The secretary shall conduct a portion of these workshops in regions that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The secretary shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every 5 years, including the plans to implement the 2030, 2040 and 2050 statewide emission limits.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 5. Report of implementation of regulations relative to climate change

The secretary shall monitor the implementation of regulations relative to climate change and shall, every 5 years, publish a report which shall include recommendations regarding such implementation. The report shall include, without limitation: (i) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth and encourage early action to reduce greenhouse gas emissions; (ii) whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities; (iii) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this chapter receive appropriate credit for early voluntary reductions; (iv) whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions; (v) consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources and other benefits to the economy, environment and public health; (vi) whether state actions minimize the administrative burden of implementing and complying with these regulations; (vii) whether state actions minimize leakage; (viii) consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases; (ix) whether greenhouse gas emissions reductions achieved are real, permanent, quantifiable, verifiable and enforceable; and (x) recommendations for future policy action. The report shall be filed with the clerk of the house of representatives, the clerk of the senate, the chairs of the

house and senate committees on ways and means, the chairs of the joint committee of telecommunications, utilities and energy and the chairs of the joint committee on the environment, natural resources and agriculture.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 6. Promulgation of regulations that reduce energy use, increase efficiency and encourage renewable sources of energy

In implementing its plan for statewide greenhouse gas emissions limits, the commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings and transportation.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 7. Market-place compliance mechanisms; regulations; out-state cooperation; enforcement

(a) The secretary, in consultation with the executive office of administration and finance, may consider the use of market-based compliance mechanisms to address climate change concerns; provided, however, that prior to the use of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the secretary shall: (1) consider the potential for direct, indirect and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution; (2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide and mercury; and (3) maximize additional environmental and economic benefits for the commonwealth, as appropriate.

(b) The secretary may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emissions limits and mandatory emissions reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(c) The executive office and the department may work with the participating regional greenhouse gas initiative states and other interested states and Canadian Provinces to develop a plan to expand market-based compliance mechanisms such as the regional greenhouse gas initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(d) The executive office shall monitor compliance with and enforce any rule, regulation, order, emissions limitation, emissions reduction measure or market-based compliance mechanism adopted by the executive office or department pursuant to this chapter. The department may impose a civil administrative penalty pursuant to section 16 of chapter 21A for a violation of any rule, regulation, order, emissions limitation, emissions reduction measure or other measure adopted by the executive office pursuant to this chapter.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 8. Advisory committee

The secretary shall convene an advisory committee to advise the executive office in overseeing the greenhouse emissions reduction measures. The advisory committee shall consist of representatives from the following sectors: commercial, industrial and manufacturing; transportation; low-income consumers; energy generation and distribution; environmental protection; energy efficiency and renewable energy; local government; and academic institutions.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

G.L. c. 21N, § 9. Applicability of chapter

Nothing in this chapter shall affect the authority of the public utility commission or the obligation of an electrical utility to provide customers with safe and reliable electric service. Nothing in this chapter shall preclude, prohibit or restrict the construction of a new facility or the expansion of an existing facility subject to regulation under this chapter, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this chapter.

Credits: Added by St. 2008, c. 298, § 6, eff. Nov. 5, 2008.

SUMMARY OF REGULATIONS:
310 CMR 7.74 (Reducing Carbon Dioxide Emissions from Electricity Generating Facilities) and 310 CMR 7.75 (Clean Energy Standard)

The Executive Office of Energy and Environmental Affairs (EEA) and the Department of Environmental Protection (MassDEP) are now finalizing six regulations in two sections of the Code of Massachusetts Regulations, 310 CMR 7.00 and 310 CMR 60.00. All six regulations are designed to work together with the other Massachusetts Clean Energy and Climate Plan for 2020 policies established by EEA pursuant to M.G.L. c. 21N (commonly known as the Global Warming Solutions Act or GWSA) to assist the Commonwealth in achieving the reductions of statewide greenhouse gas emissions established pursuant to the GWSA, namely a twenty-five (25%) percent reduction by 2020 and at least an eighty percent (80%) reduction by 2050, both from a 1990 baseline. On May 17, 2016, the Supreme Judicial Court in Kain v. Department of Environmental Protection, 474 Mass. 278 (2016), found that MassDEP had not complied with the requirements of Section 3(d) of the GWSA to promulgate regulations that require mass-based, annually declining limits on sources or categories of sources of greenhouse gas emissions, with the particular sources or categories of sources to be determined in MassDEP's discretion, in consultation with EEA. On September 16, 2016, the Governor issued Executive Order No. 569, "Establishing an Integrated Climate Change Strategy for the Commonwealth," directing EEA to adopt new strategies to comply with the GWSA and directing the MassDEP to adopt regulations consistent with the Supreme Judicial Court's decision.

To achieve these purposes, EEA and MassDEP are jointly promulgating two final regulations on the electric sector pursuant to Sections 3(c) and Section 3(d) of the GWSA and other statutory authorities. Sections 3(c) and 3(d) authorize EEA and MassDEP to regulate the electric sector, including electricity generating facilities and retail electricity sellers, to achieve the emission reductions as established under the GWSA. Section 3(d) requires annually declining aggregate emissions limits on in-state sources and categories of sources of greenhouse gas emissions. Section 3(c) requires MassDEP and EEA, in consultation with the Department of Energy Resources (DOER), to base emissions levels and limits on the electric sector upon "consumption and purchases of electricity" from the regional grid, and requires EEA and MassDEP to take into account the Regional Greenhouse Gas Initiative (RGGI) and Renewable Portfolio Standard (RPS) programs.

310 CMR 7.74 (Reducing Carbon Dioxide Emissions from Electricity Generating Facilities) establishes mass-based, annually declining aggregate CO_2 emissions limits on electricity generating facilities located in the Commonwealth, and 310 CMR 7.75 (Clean Energy Standard) establishes clean energy portfolio levels for retail sellers of electricity to Massachusetts customers. 310 CMR 7.74 and 310 CMR 7.75 are designed to work together to maximize the reduction of greenhouse gas emissions. Specifically, 310 CMR 7.74 will limit emissions from power plants in Massachusetts and 310 CMR 7.75 complements 310 CMR 7.74 by increasing the amount of clean, non-emitting energy supplied to the regional electricity system and available for consumption in Massachusetts. In exercising their broad authority under M.G.L. c. 21N, §§ 3(c) and 3(d), EEA and MassDEP have determined that the emissions limits imposed on in-state electricity generating facilities along with other climate policies and programs, including 310 CMR 7.75, will ensure achievement of the emissions reduction limits as established under M.G.L. c. 21N, and that the 310 CMR 7.74 and 7.75 limits and levels will minimize adverse impacts to the regional electricity grid, including leakage, and are consistent with regional programs such as RGGI and RPS.

Pursuant to Sections 3, 4 and 7 of the GWSA, 310 CMR 7.74 and 7.75 were also designed to protect public health and the environment and to maximize environmental benefits by establishing limits and levels that will assist in reducing greenhouse gases to meet the GWSA limits (including in those

communities already adversely impacted by air pollution), and to minimize costs and to maximize economic benefits to the extent possible. In response to public comment claiming that the electric sector regulations would increase greenhouse gas emissions and thereby cause adverse impacts on public health and the environment, and public comment that costs impacts were excessive, EEA and MassDEP commissioned an analysis of the emissions and cost impacts of 310 CMR 7.74 and 310 CMR 7.75. That analysis demonstrated that the regulations would reduce greenhouse gas emissions both within the borders of Massachusetts and across the New England electricity system region. The study also showed that retail customer costs and impacts to wholesale electricity prices would be small. The analysis did not identify any impacts to allowance prices for the RGGI program, and showed that impacts to prices for renewable energy certificates (RECs) for the RPS program would be within acceptable ranges. Finally, EEA and MassDEP have consulted with the Secretary of the Executive Office of Administration and Finance on the impacts of these electric sector regulations and the use of market-based mechanisms, such as an allowance auction in 310 CMR 7.74 and an alternative compliance payment (ACP) in 310 CMR 7.75. Together, these mechanisms provide flexibility for the regulated community while ensuring that the regulations achieve cost-effective emissions reductions in Massachusetts.

EEA and MassDEP have worked in concert throughout the effort to establish the draft regulations, review and incorporate public comments where appropriate, and prepare final regulations for promulgation. Their collaboration has included:

- Co-hosting a meeting with agency leadership from DOER and the Department of Public Utilities (DPU) in the Fall of 2016 to obtain feedback on the policy approaches for setting the emissions levels and limits on greenhouse gases to present for public comment;
- Attending frequent meetings with DOER and DPU to consult with these energy agencies regarding the regional consumption of electricity and the interaction of these regulations with the existing RGGI and RPS programs;
- Developing materials to explain the design of the electric sector regulatory programs to stakeholders;
- Attending MassDEP-hosted stakeholder meetings in November 2016, prior to publication of draft regulations, to solicit further input on stakeholder discussion drafts of the regulations;
- Co-presenting at meetings of the GWSA Implementation Advisory Committee in Fall 2016 to update stakeholders on the status of potential 3(d) regulations and solicit continued input;
- Attending a joint meeting with ISO-NE to consult on electric grid reliability, impacts on wholesale prices, the potential for leakage, emissions and other electricity related issues
- Joint review of all public comments received; and
- Formal approval of draft and final regulations by EEA and ANF.

In addition, MassDEP is promulgating four additional regulations pursuant to Section 3(d) of the GWSA, and other broad statutory authorities, to achieve greenhouse gas emissions reductions in addition to those that will be achieved by the two electric sector regulations to meet the 2020 limit: amendments to 310 CMR 7.72 (setting emissions limits for Sulfur Hexafluoride emissions from Gas-Insulated Switchgear); a new regulation 310 CMR 7.73 (setting emissions limits for Methane Emissions from Natural Gas Distribution Mains and Services); amendments to 310 CMR 60.05 (setting emissions limits for Carbon Dioxide from the Massachusetts Department of Transportation (MassDOT) operations and setting targets for statewide Carbon Dioxide emissions from Transportation); and a new regulation 310 CMR 60.06 (setting emissions limits for Carbon Dioxide from State Fleet Passenger Vehicles). MassDEP also consulted with EEA, DOER and DPU on the design of 310 CMR 7.72 and 310 CMR 7.73, with EEA and MassDOT on the design of 310 CMR 60.05, and with all of the Executive Offices on the design of 310 CMR 60.06.

7.73: continued

(9) Program Review. Not later than December 31, 2020, the Department shall complete a review, including an opportunity for public comment on the program review, of the requirements of 310 CMR 7.73 to determine whether the program should be amended or extended. This review shall evaluate whether to require the use of feasible technologies to detect and quantify gas leaks and any other information relevant to review of the program.

7.74: Reducing CO_2 Emissions from Electricity Generating Facilities

(1) Purpose, Authority and Scope. The purpose of 310 CMR 7.74, promulgated in conjunction with 310 CMR 7.75, is to assist the Commonwealth in achieving the greenhouse gas emissions reduction goals adopted pursuant to M.G.L. c. 21N, § 3(b), by establishing declining annual aggregate CO_2 emissions limits that will reduce CO_2 emissions from electricity generating facilities. To achieve those goals, the Executive Office of Energy and Environmental Affairs (EEA) and the Department pursuant to M.G.L. c. 21A, §§ 2 and 8 and M.G.L. c. 21N, §§ 3(c), 4 and 7 hereby jointly promulgate 310 CMR 7.74, following consultation with the Department of Energy Resources and based on the considerations specified in M.G.L. c. 21N, § 3(c). 310 CMR 7.74 is also promulgated pursuant to M.G.L. c. 21A, § 16, M.G.L. c. 21N, § 3(d), and M.G.L. c. 111, §§ 2C and 142A through 142E. In exercising their broad authority and discretion under M.G.L. c. 21N, §§ 3(c) and 3(d), EEA and MassDEP have determined that additional emissions limits on in-state electricity generating facilities' greenhouse gas emissions, along with other climate policies and programs, will ensure achievement of the greenhouse gas emissions limits as established under M.G.L. c. 21N, and that the 310 CMR 7.74 limits are consistent with, and take account of, regional programs such as the Regional Greenhouse Gas Initiative (RGGI) and the Renewable Portfolio Standard (RPS).

(2) Definitions. The terms used in 310 CMR 7.74 are defined in 310 CMR 7.74(2) and 310 CMR 7.00: *Definitions*. Where a term is defined in 310 CMR 7.00: *Definitions* and 310 CMR 7.74 the definition in 310 CMR 7.74 shall apply.

Allowance means a limited authorization to emit one metric ton of CO_2 in compliance with 310 CMR 7.74.

Allowance Registry means the database that tracks allowances held by electricity generating facilities and used for compliance. The Department shall establish an account in the allowance registry for each electricity generating facility.

Annual CO_2 Emissions means the total amount of CO_2 emissions measurements recorded and reported for a calendar year in accordance with the Massachusetts CO_2 Budget Trading Program at 310 CMR 7.70(8)(e)4., converted from short tons to metric tons and adjusted, as applicable, for the production of useful net thermal energy pursuant to the Massachusetts CO_2 Budget Trading Program at 310 CMR 7.70(8)(i).

Bidder means a party qualified, pursuant to 310 CMR 7.74(6)(h)4.a., to participate in an auction.

Calendar Year or Year means January 1st through December 31st.

Deduct or Deduction means the permanent removal of allowances from an account in the allowance registry by the Department.

Designated Representative means the person who is authorized by the owner and operator of an electricity generating facility to represent and legally bind the owner and operator in matters pertaining to 310 CMR 7.74.

Electricity Generating Facility means a facility that includes one or more electricity generating units for which the owner or operator is required to report CO_2 emissions pursuant to the Massachusetts CO_2 Budget Trading Program at 310 CMR 7.70(8); provided, however, that the following facilities are not electricity generating facilities for purposes of 310 CMR 7.74: MWRA Deer Island and MBTA South Boston Power.

Emergency means a period during when the regional transmission organization has issued an alert that an abnormal condition affecting the reliability of the power system exists or is anticipated in Massachusetts.

7.74: continued

Existing Electricity Generating Facility means an electricity generating facility listed in 310 CMR 7.74(5)(b): *Table B.*

Existing Facility Aggregate CO_2 Emissions Limit means, with respect to calendar year 2018, the sum of all existing facilities' CO_2 emissions limits, as listed in 310 CMR 7.74(5)(a): *Table A.*

Massachusetts CO_2 Budget Trading Program means the program the Department promulgated at 310 CMR 7.70 to reduce greenhouse gas emissions from CO_2 Budget Sources as defined in 310 CMR 7.70.

New Facility Aggregate CO_2 Emissions Limit means, with respect to calendar year 2018, the sum of all new electricity generating facility CO_2 emissions limits, as listed in 310 CMR 7.74(5)(a): *Table A.*

New Electricity Generating Facility means, with respect to calendar year 2018, an electricity generating facility that is not an existing electricity generating facility.

Offset means to use allowances to cover CO_2 emissions from an electricity generating facility pursuant 310 CMR 7.74.

Operator means any person or group of persons who operates, controls, or supervises an electricity generating facility including, but not limited to, any holding company, utility system, plant manager, or operations manager of the electricity generating facility.

Owner means any of the following persons or group of persons:

(a) Any holder(s) of any portion of the legal or equitable title in an electricity generating facility; or

(b) Any holder(s) of a leasehold interest in an electricity generating facility.

Reserve Price means the minimum acceptable price for each allowance in a specific auction.

Sealed Bid, Uniform Price Auction means a single or multiple round sealed-bid auction in which bidders may submit multiple bids at different prices; the price paid by all awarded bidders will be uniform.

Serial Number means, when referring to allowances, the unique identification number assigned by the Department to each allowance.

Total Aggregate CO_2 Emissions Limit means, with respect to a particular calendar year, the maximum allowable aggregate limit on CO_2 emissions from all electricity generating facilities subject to 310 CMR 7.74, as listed in 310 CMR 7.74(5)(a): *Table A.*

(3) Applicability. 310 CMR 7.74 applies to all owners and operators of an electricity generating facility.

(4) Compliance with CO_2 Emissions Limits. The owner or operator of an electricity generating facility shall offset all CO_2 emissions using allowances in its allowance registry account pursuant to 310 CMR 7.74 (6) through (7).

(5) CO_2 Emissions Limits.

(a) Total Aggregate CO_2 Emissions Limits. The total aggregate CO_2 emissions limit for 2018 is 9,149,979 metric tons of CO_2. The total aggregate CO_2 emissions limit for 2019 is 8,731,175. The total aggregate CO_2 emissions limit declines by 223,876 metric tons each year thereafter until it reaches 8,507,299 metric tons of CO_2 in 2020 and 1,791,019 metric tons of CO_2 in 2050. For 2018, the existing facility aggregate CO_2 emissions limit and the new facility aggregate CO_2 emissions limit were calculated from the total aggregate CO_2 emissions limit, such that their sum equals the total aggregate CO_2 emissions limit. The existing facility aggregate CO_2 emissions limit, and new facility aggregate CO_2 emissions limit for calendar year 2018 are shown in 310 CMR 7.74(5)(a): *Table A.*

7.74: continued

310 CMR 7.74(5)(a): *Table A*
2018 Existing Facility Aggregate and New Facility Aggregate
CO_2 Emissions Limits in Metric Tons

Year	Existing Facility Aggregate CO_2 Emissions Limit	New Facility Aggregate CO_2 Emissions Limit
2018	7,649,979	1,500,000

(b) Existing Individual Electricity Generating Facility CO_2 Emissions Limits for 2018. The CO_2 emissions limits for existing electricity generating facilities are shown in 310 CMR 7.74(5)(b): *Table B.*

310 CMR 7.74(5)(b): *Table B*
Existing Individual Electricity Generating Facility CO_2 Emissions Limits in Metric Tons

Facility	Limit
ANP Bellingham	860,250
ANP Blackstone	787,429
Bellingham	233,789
Berkshire Power	437,049
Braintree Electric	24,425
Canal Station	101,922
Cleary Flood	50,453
Dartmouth Power	48,348
Dighton	330,396
Fore River Energy	1,433,568
Kendall Square	502,191
MASSPOWER	304,108
Medway Station	1,603
Milford Power, LLC	148,912
Millennium Power	667,082
Mystic	1,516,066
Pittsfield Generating	79,959
Stony Brook	68,844
Tanner Street	36,655
Waters River	1,587
West Springfield	15,343

(c) Apportionment of New Facility Aggregate CO_2 Emissions Limit for 2018. By February 15, 2019, the Department shall apportion the 2018 new facility aggregate CO_2 emissions limit among electricity generating facilities. The apportionment shall be based on CO_2 emissions reported by new electricity generating facilities pursuant to 310 CMR 7.74(7) by February 1, 2019, and shall be completed pursuant to 310 CMR 7.74(5)(c)1. through 3.

1. New Electricity Generating Facilities' CO_2 Emissions Limits for 2018. The Department shall determine whether the sum of CO_2 emissions from new electricity generating facilities reported pursuant to 310 CMR 7.74(7) is less than, equal to, or greater than the new facility aggregate CO_2 emissions limit for 2018.

7.74: continued

a. If the sum of new electricity generating facility CO_2 emissions is less than or equal to the new facility aggregate CO_2 emissions limit for 2018, then the Department shall set each new electricity generating facility's 2018 emissions limit equal to its CO_2 emissions for 2018.

b. If the sum of new electric generating facility CO_2 emissions is greater than the new facility aggregate CO_2 emissions limit for 2018, the Department shall ensure that the sum of all new facility CO_2 emissions limits equals the new facility aggregate CO_2 emissions limit for the year by completing the following calculations:

i. Calculate a discount factor by dividing the new facility aggregate CO_2 emissions limit by the total amount of CO_2 emitted by all new electricity generating facilities in 2018; and

ii. Calculate each new electricity generating facility's 2018 limit as the product of the facility's CO_2 emissions and the discount factor.

2. Distribution of Excess New Facility CO_2 Emissions Limit. If the Department determines pursuant to 310 CMR 7.74(5)(c)1. that the sum of CO_2 emissions from new electricity generating facilities is less than the new facility aggregate CO_2 emissions limit for 2018, then the Department shall:

a. Calculate the difference between the new facility aggregate CO_2 emissions limit and the sum of CO_2 emissions from new electricity generating facilities;

b. Calculate the product of such difference and each existing electricity generating facility's fraction of the existing facility aggregate CO_2 emissions limit for 2018; and

c. Deposit allowances equal to the product, minus any allowances distributed pursuant to 310 CMR 7.74(5)(c)3., in the allowance registry account of each existing electricity generating facility.

3. Early Distribution of Excess New Facility CO_2 Emissions Limit. By November 15, 2018, the Department may determine that the sum of CO_2 emissions from new electricity generating facilities will be less than the new facility aggregate CO_2 emissions limit for the year. In making this determination, the Department shall consider CO_2 emissions reported pursuant to the Massachusetts CO_2 Budget Trading Program at 310 CMR 7.70(8)(e)4. for the months of January through September 2018, and any physical or permitted limits on the potential for the facility to emit (*e.g.*, on hourly fuel combustion) during the months of October through December 2018. If the Department determines that the sum of CO_2 emissions from new electricity generating facilities will be less than the new facility aggregate CO_2 emissions limit for 2018, then by December 1, 2018 the Department shall:

a. Calculate the minimum possible difference between the new facility aggregate CO_2 emissions limit and the sum of CO_2 emissions from new electricity generating facilities for 2018;

b. Calculate the product of such minimum possible difference and each existing electricity generating facility's fraction of the existing facility aggregate CO_2 emissions limit for 2018; and

c. Deposit allowances equal to the product in the allowance registry account of each existing electricity generating facility.

(6) Allocation, Transfer, and Use of Allowances.

(a) Allocation of Allowances. For 2018, the Department shall allocate allowances to new and existing electricity generating facilities in accordance with the quantities, processes, and schedule for establishing individual facility CO_2 emissions limits specified in 310 CMR 7.74(5)(b) through (c), and deposit them in the allowance registry accounts of the electricity generating facilities. For 2019 and all future years, the Department shall allocate allowances using an auction in accordance with 310 CMR 7.74(6)(h). Once allocated, allowances may be used or transferred pursuant to 310 CMR 7.74(6)(b) or (c), regardless of the year or method of allocation.

(b) Use of Allowances.

1. The owner or operator of an electricity generating facility may use allowances to offset CO_2 emissions for a particular year pursuant to 310 CMR 7.74(6)(e), provided that the allowances used are in the electricity generating facility's allowance registry account on March 1st of the year following the year in which the CO_2 emissions occurred.

2. Allowances may be used exclusively by the owners or operators of electricity generating facilities to comply with 310 CMR 7.74 and are not property rights.

7.74: continued

(c) Transfer of Allowances.

1. The owner or operator of an electricity generating facility may transfer allowances to the owner or operator of another electricity generating facility by submitting a notice of transfer to the Department at any time except during the month of March.
2. The notice of transfer shall include the electricity generating facility's allowance registry account number, the number of allowances to be transferred, the serial numbers of the allowances to be transferred, the name and account number of the electricity generating facility to which the allowances will be transferred, and the certification statement required by 310 CMR 7.74(7)(c) that has been signed by the designated representative of the transferring electricity generating facility, or his or her designee, allowing the transfer of allowances.
3. The Department may require reporting of a price for transfers of allowances between electricity generating facilities that have different owners or operators through submission of a form as specified by the Department.

(d) Emergency Deferred Compliance. If an electricity generating facility emits CO_2 during an emergency that occurs during the last 45 days of a calendar year, the electricity generating facility owner or operator may choose to defer for one year a portion or the entirety of the electricity generating facility's compliance obligation with respect to CO_2 emissions emitted during such emergency, provided that such CO_2 emissions shall be offset in the following year on a two for one basis pursuant to 310 CMR 7.74(6)(e)2. If an electricity generating facility owner or operator chooses to defer the electricity generating facility's compliance obligation with respect to any CO_2 emissions emitted during an emergency pursuant to 310 CMR 7.74(6)(e), then the owner or operator shall complete the following steps:

1. Identify the quantity of such CO_2 emissions emitted during the emergency, and the hours and dates during which the emergency occurred, in the facility's CO_2 emissions report submitted pursuant to 310 CMR 7.74(7)(a) for the calendar year during which the CO_2 emissions occurred; and
2. Offset such CO_2 emissions on a two for one basis pursuant to 310 CMR 7.74(6)(e)2. by identifying the necessary number of allowances in its compliance certification report submitted pursuant to 310 CMR 7.74(7)(b) for the following calendar year.

(e) Compliance with CO_2 Emissions Limits. On March 1st of each year, each electricity generating facility's allowance registry account shall hold a number of allowances that is equal to or greater than the sum of:

1. The amount of CO_2 emissions that the electricity generating facility emitted during the prior calendar year, minus any emissions for which compliance is being deferred pursuant to 310 CMR 7.74(6)(d); and
2. Twice the amount of CO_2 emissions that the electricity generating facility emitted during the year before the prior calendar year (*e.g.*, on March 1, 2020 for 2018 emissions), but was not offset because compliance was deferred pursuant to 310 CMR 7.74(6)(d).

(f) Banking of Allowances. Allowances may be retained for use in future years, provided that the total amount of CO_2 emitted by all electricity generating facilities in any year is less than the total aggregate CO_2 emissions limit for the prior year, before accounting for any emergency deferred compliance. In order to enforce this limitation on banking, the Department shall complete the following steps by April 1st of each year:

1. Divide 223,876 metric tons by the total aggregate emission limit for the prior year;
2. Multiply the resulting fraction by the number of allowances in each electricity generating facility's allowance registry account on March 1st, as reported to the Department pursuant to 310 CMR 7.74(7)(b)4.; and
3. If necessary, deduct allowances pursuant to 310 CMR 7.74(6)(g)3. to ensure that the number of allowances in the electricity generating facility's allowance registry account does not exceed the quantity calculated pursuant to 310 CMR 7.74(6)(f)2.

(g) Deduction of Allowances for Compliance. By April 1st of each year, the Department shall deduct allowances from each electricity generating facility's allowance registry account in the following order:

1. To address any emergency deferred compliance obligation accrued during the year before the prior calendar year pursuant to 310 CMR 7.74(6)(e);
2. To offset CO_2 emissions that occurred during the prior calendar year; and
3. To ensure that the number of allowances remaining in the allowance registry account is less than the limitation on banking calculated pursuant to 310 CMR 7.74(6)(f)2.

7.74: continued

(h) Allowance Auctions. For the years 2019 through 2050, the Department shall conduct a series of auctions pursuant to 310 CMR 7.74(6)(h) to sell allowances to be used by owners or operators of electricity generating facilities to offset CO_2 emissions.

1. Allowance Auction Procedures.
   a. Auctions shall be conducted quarterly, but the Department may adjust the frequency of such auctions as it deems necessary to effectuate the objectives 310 CMR 7.74, provided at least one auction is conducted annually.
   b. The implementation of any auction conducted pursuant to 310 CMR 7.74 may be transferred by the Department to an agent deemed qualified by the Department to conduct such auction, provided that such agent shall perform all such duties under the direction and oversight of the Department.
   c. The auction format shall be a Sealed Bid, Uniform Price Auction.
   d. Prior to the end of each calendar year, allowances in a quantity equal to the total aggregate CO_2 emissions limit will be available for sale by auction. Such allowances will be available for sale by auction for each calendar year. The Department may require that allowances are sold in minimum lot sizes. In such event, such lot sizes shall be published in the auction notice pursuant to 310 CMR 7.74(6)(h)2. No more than 50% of the allowances from a calendar year may be available for sale in advance of the respective calendar year, up to four years in advance of such calendar year.
   e. The Department shall post a calendar of proposed auction dates on its web site. The calendar shall include the auction format and the number and years of allowances to be auctioned at each auction. The Department may periodically modify the contents of the calendar, provided that the information relevant to the next scheduled auction shall be fixed in the auction notice no later than 45 calendar days prior to such auction, consistent with 310 CMR 7.74(6)(h)2.a.
   f. Auctions of allowances may be held with a reserve price. The Department is not obligated to sell allowances if the reserve price is not met.
   g. No bidder, including any affiliate or agent of such bidder, shall purchase more than 50% of the allowances offered for sale in any one auction. Such limitation shall be published in the auction notice pursuant to 310 CMR 7.74(6)(h)2. and may be reduced for one or more bidders if the Department is so-advised by a qualified agent or market monitor employed pursuant to 310 CMR 7.74(6)(h)1.b. or 5.a.
   h. The Department may periodically evaluate the auction program performance and may retire any allowances that were offered for sale by auction but were not sold.
   i. Proceeds of such auctions shall be paid to the Department and deposited in a segregated account and administered by a Trustee appointed by EEA and the Department. The funds shall be expended to further the goals of M.G.L. c. 21N by supporting programs or projects to reduce greenhouse gas emissions in order to mitigate the impacts of climate change, including but not limited to, clean energy and vehicle electrification projects; programs and projects to support adaptation to the impacts of climate change; mitigation or adaptation programs or projects involving communities that are already adversely impacted by air pollution, including but not limited to, environmental justice communities; and for the administration of any such programs or projects. Auction proceeds may also be used for the administration of 310 CMR 7.74. Auction proceeds shall be expended at the direction of the Trustee, in consultation with EEA and the Department. The Trustee, EEA and the Department may consult with and enter into agreements with other agencies within the EEA Secretariat to assist in the administration and expenditure of auction proceeds.
2. Auction Notice.
   a. Notice of each auction shall be published no later than 45 calendar days prior to such auction, and may be transmitted electronically to parties requesting such notification.
   b. Each notice shall include but not be limited to, the following information:
      i. Date, time and location of the auction, including the internet address or electronic address for auction location, as applicable;
      ii. Auction format;
      iii. Categories of bidders who will be eligible to bid;
      iv. Quantity and years of allowances to be auctioned;
      v. Reserve Price;
      vi. Required bid format;

7.74: continued

vii. Instructions for submitting the qualification application;
viii. Instructions for submitting acceptable financial surety;
ix. Procedures for the conduct of the auction;
x. Participation limitations; and
xi. Other pertinent rules or procedures of the auction as may be required to ensure a transparent, fair and competitive auction.

3. Participant Eligibility. Only owners and operators of electricity generating facilities are eligible to participate in auctions.

4. Bid Submittal Requirements.

a. Qualification Application.

i. Only qualified bidders will be permitted to submit bid(s) or otherwise participate in any auction.

ii. Only parties with accounts in the allowance registry may participate in the auction.

iii. Potential bidders shall submit a qualification application to the Department at least 30 calendar days prior to the bid submittal date of such auction or by such deadline as the Department shall stipulate in the auction notice. Qualification applications shall contain the information set forth in 310 CMR 7.74(6)(h)4.a. and the auction notice.

iv. The applicant shall provide information and documentation relating to its corporate structure, financial ability to participate in the auction and authority to execute bids and honor contractual obligations. Such information may include, but is not limited to the following:

(i) Documentation regarding the corporate identity, ownership, and capital structure of the applicant; identification of any agency relationship between the applicant and any third party related to the auction;

(ii) Audited annual reports and credit reports of the applicant and/or the entity represented by the applicant;

(iii) Corporate background and recent adverse conditions, which may include:

-1. Identification of any indictment or felony conviction of the applicant, or any member, director, principle, partner or officer of the applicant or any affiliate or related entity;

-2. A statement by the applicant as to prior findings of non-responsibility with regard to any state procurement including findings under state law or regulation;

-3. A statement by the applicant as to certification under any state tax registration requirement;

-4. Identification of any previous or pending investigation with respect to any alleged violation any rule, regulation, or law associated with any commodity market or exchange;

-5. Evidence demonstrating that such applicant has an allowance registry account;

-6. Identification of relationships with any other account holder.

v. The Department shall review each qualification application and make determinations as to whether the applicant is qualified to submit bids in the auction. Applicants may be denied eligibility based on the information provided or upon information obtained independent of the application process. Failure to provide the required information may result in the qualification application being declared incomplete or otherwise deficient. The Department shall notify applicants in writing or by electronic mail if the qualification application is complete and meets the requirements for participation in the auction. If the qualification application does not meet such requirements, notification shall include the reasons therefore, and applicants will be given a reasonable opportunity to provide additional information to cure such deficiencies.

vi. Once an application has been approved, that bidder shall be eligible to participate in all subsequent auctions, provided there has been no material change to the information provided in the qualification application, and provided that the applicant meets the eligibility criteria of 310 CMR 7.74(6)(h)3. If there is any material change to the information submitted in the bidder's qualification application, the qualification expires and a new qualification application is required to be submitted.

7.74: continued

vii. The Department may suspend or revoke its approval of a qualification application if the bidder fails to comply with 310 CMR 7.74(6)(h)4.

viii. In order to reduce the administrative burden for the Department and electricity generating facilities, the Department may, on a case-by-case basis, consider applicants that have been approved as bidders by DOER pursuant to 225 CMR 13.09(e) to be qualified bidders pursuant to 310 CMR 7.74(6)(h)4.a.v.

b. Surety Requirement.

i. Bidders shall be required to provide financial surety in the form of a bond, cash, certified funds, or an irrevocable stand-by letter of credit, in a form acceptable to the Department. A bidder's eligibility to bid in any auction shall be limited to the level of financial security provided. Financial surety may be forfeited to and retained by the Department in the event the bidder's offer is accepted in an auction and the bidder fails to tender payment of the full amount when due.

ii. Bidders may request return of their surety at any time prior to or following any auction, and the Department shall return said surety provided that the Commonwealth has no current or pending claim to such surety as a result of a failure of the bidder to comply with 310 CMR 7.74(6)(h)4.b. or to pay the full amount of its accepted bid when due. Return of such surety to the bidder voids the bidder's ability to participate in subsequent auctions unless a new surety is submitted to the Department pursuant to the provisions of 310 CMR 7.74(6)(h)4.

iii. The surety requirements of 310 CMR 7.74(6)(h)4. may be modified by the Department at any time prior to the applicable auction date, and shall be published no later than 45 calendar days prior to such auction.

iv. In the event that the Department modifies the surety requirements, bidders shall meet the new surety requirements before the next auction.

c. Bid Submittal.

i. Once an application has been approved, and provided there has been no material change to the information provided in the application, bidders seeking to bid in any subsequent auction shall complete and submit an intent to bid on or before the deadline specified in the Auction Notice.

ii. All bids shall be on a form prescribed by the Department, which shall be made available electronically.

iii. All bids submitted shall be considered binding offers for the purchase of allowances under the rules of the auction.

iv. All qualified maximum bids shall be limited to the amount of financial surety provided by the qualified bidder pursuant to 310 CMR 7.74(6)(h)4.b.

v. Bids shall be submitted on-line and shall conform to the format and protocol of bid submission as set forth in the auction notice pursuant to 310 CMR 7.74(6)(h)2.

vi. If the Department determines that a bidder has provided false or misleading information, fails to honor an accepted bid, or has withheld pertinent information in its qualification documentation, or has otherwise failed to comply with any material provision of 310 CMR 7.74(6)(h)4., the surety amount may be forfeited to the Commonwealth, and the bidder may be prohibited from participating in any future auctions.

5. Bid Selection.

a. The Department may employ a market monitor to observe the conduct and outcome of each auction. As a condition to participation in any auction, bidders shall agree to provide, and shall provide on request, any data to the Department that the Department deems necessary to support this function and the proper monitoring of such auctions.

b. The Department will rank all bids. Allowances will be sold in the quantities specified in the accepted bids until there are no remaining allowances available for the specified auction. In the event that there is more than one winning bidder submitting the same price and the total number of allowances requested in all such winning bids exceeds the number of allowances remaining, the Department may award the remaining allowances randomly, or based on the *pro rata* share of the number of allowances bid on by each winning bidder.

c. The Department shall approve or disapprove the outcome of the auction following the completion of the auction event.

7.74: continued

6. Transfer of Allowances. Following approval of the outcome of the auction and upon payment in full of the amount owed by the successful bidders, the Department shall transfer allowances into the corresponding bidders' allowance registry account, provided that transfers resulting from auctions that occur before April 1st of a calendar year shall occur on April 1st.

7. Return of Unsuccessful Bids. Subject to 310 CMR 7.74(6)(h)4.b.ii. and 310 CMR 7.74 (6)(h)4.c.vi., following each auction the Department will return upon written request all financial securities or payments to unsuccessful bidders and to bidders unwilling to purchase fewer allowances than requested in its bid.

8. Announcement of Results. The Department reserves the right to publish the names of qualified bidders, the closing price, and the total quantity of allowances sold at each auction.

(7) Reporting Requirements.

(a) Annual CO_2 Emissions Report. By February 1, 2019, and February 1st of each year thereafter, the owner or operator of an electricity generating facility shall submit a CO_2 emissions report. The report shall include the following:

1. The name, address, contact person, and phone number of the facility;
2. The facility's annual CO_2 emissions for the previous calendar year as reported pursuant to the Massachusetts CO_2 Budget Trading Program at 310 CMR 7.70(8), in short tons and metric tons;
3. The amount, if any, of CO_2 emissions for which compliance will be deferred pursuant to 310 CMR 7.74(6)(d), in short and metric tons, and the hours during which such CO_2 emissions occurred during the emergency; and
4. The electronic signature of the designated representative submitting the form and certification by the designated representative in accordance with 310 CMR 7.74(7)(c).

(b) Compliance Certification Reporting. By March 1, 2019, and March 1st of each year thereafter, the owner or operator of an electricity generating facility subject to 310 CMR 7.74 shall demonstrate compliance with the electricity generating facility's CO_2 emission limit by submitting a compliance certification report covering the CO_2 emissions from the prior calendar year. The compliance certification report shall include, among other information as requested by the Department, the following:

1. The name, address, contact person, and phone number of the electricity generating facility;
2. The electricity generating facility's assigned CO_2 emissions limit for 2018;
3. The electricity generating facility's annual CO_2 emissions for the prior calendar year as reported pursuant to 310 CMR 7.70(8), in short tons and metric tons;
4. The total number of allowances in the electricity generating facility's allowance registry account on March 1st;
5. The number of allowances in the electricity generating facility's allowance registry account that the owner or operator of the facility is using to offset CO_2 emissions that occurred during the prior calendar year;
6. The number of allowances in the electricity generating facility's allowance registry account that the owner or operator of the electricity generating facility is using to offset CO_2 emissions that occurred during an emergency in the year before the prior calendar year, on a two for one basis pursuant to 310 CMR 7.74(6)(d);
7. The total number of allowances remaining in the electricity generating facility's allowance registry account after offsetting CO_2 emissions pursuant to 310 CMR 7.74(7)(b)5. and 6.; and
8. The electronic signature of the designated representative submitting the form and certification by the designated representative in accordance with 310 CMR 7.74(7)(c).

(c) Certification of Reports and Other Documents. All reports and other documents submitted to the Department under 310 CMR 7.74 must be signed and attested to by the designated representative and shall include the following statement: "I certify that I have personally examined the information that I am submitting and I am familiar with the information submitted and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including possible fines and imprisonment."

(d) Reporting Format and Process. The Department may specify the format and process for any submission required pursuant to 310 CMR 7.74, including electronic submission requirements.

7.74: continued

(e) Compliance Verification. The Department may verify compliance with 310 CMR 7.74 by conducting inspections, requesting information and records, and requiring the collection of information. 310 CMR 7.74(7)(e) does not limit the authority of the Department as otherwise provided by law or in an authorization, determination, modification, permit, or other approval, or by the terms of any order or other enforcement document.

1. Access to Information. Where necessary to ascertain compliance with 310 CMR 7.74, including actual or potential CO_2 emissions, the Department may request information or records from any owner or operator of an electricity generating facility. The owner or operator shall, within a reasonable time, furnish the requested information or records and shall permit Department personnel or authorized representatives to have access to and to take images of such records.

2. Requirement to Collect Information. When the Department determines that any electricity generating facility has failed to offset its CO_2 emissions limit or violated any other condition in 310 CMR 7.74, the Department may require the owner or operator of said electricity generating facility to submit the necessary information or records. In doing so, the Department may require the electricity generating facility owner or operator to:

a. Establish and maintain records;

b. Perform audits on CO_2 emissions records or monitoring equipment using standard procedures and methods;

c. Quantify CO_2 emissions in accordance with any procedures and methods that the Department may prescribe;

d. Keep records on control equipment parameters, production variables, and other indirect data when direct monitoring of CO_2 emissions is not practical;

e. Perform additional CO_2 emissions monitoring, including conducting stack tests in accordance with 310 CMR 7.13 when continuous CO_2 emissions monitoring equipment information is unavailable;

f. Make periodic reports to the Department, as necessary, to assure continuous compliance with 310 CMR 7.74; and

g. Maintain other records and provide any other information the Department requires.

(8) Recordkeeping Requirements. The owner or operator of an electricity generating facility shall keep on-site at the electricity generating facility all records, data, reports and other information required by 310 CMR 7.74 for a period of three years from the date the record is created. The Department may extend this period for cause, in writing, at any time before the end of the three years.

(9) Authorized Designated Representative.

(a) Assigning an Authorized Designated Representative. The owner and operator of an electricity generating facility shall authorize one designated representative to act on behalf of the owner and operator with regard to all matters under 310 CMR 7.74.

(b) Responsibilities of Designated Representative. The designated representative shall be responsible for submitting electronically any or all of the following: a notice of transfer of allowances; a CO_2 emissions report; the Compliance Certification Report, and any other documents requested by the Department.

(c) Delegation by Designated Representative. A designated representative may delegate his or her authority to submit a notice of transfer of allowances by submitting a certificate of representation that includes the information specified at 310 CMR 7.74(9)(d)6.

(d) Certification of Representation. The owner or operator of an electricity generating facility shall submit to the Department a complete certificate of representation that identifies the designated representative acting on behalf of the owner and operator for the electricity generating facility. The submission shall be on a form prescribed by the Department, and shall include, but not be limited to, the following:

1. Identification of the electricity generating facility;
2. The name, address, email address, and telephone number of the designated representative;
3. A list of the owner(s) and operator(s) of the electricity generating facility;
4. The following certification statements by the designated representative.
   a. "I certify I was selected as the designated representative, by an agreement binding on the owner and operator of the facility."

7.74: continued

b. "I certify that I have all the necessary authority to carry out my duties and responsibilities under 310 CMR 7.74 on behalf of the owner and operator of the facility and that the owner and operator shall be fully bound by my representations, action, inactions, or submissions;"

5. The signature of the designated representative and the date signed; and

6. If applicable, a list of persons authorized to submit Notices of Transfer of allowances pursuant to 310 CMR 7.74(9)(c), and the following:

a. The name, address, email address, and telephone number of such persons.

b. The following certification statement by the designated representative. "I certify any notice of transfer of allowances submitted by any person identified by me as authorized to submit a notice of transfer of allowances under 310 CMR 7.74 shall be deemed a notice of transfer of allowances submitted by me."

(10) Penalties and Enforcement.

(a) The failure of an owner or operator to offset its CO_2 emissions limit in compliance with 310 CMR 7.74(6)(e) shall be deemed a release of air pollutants into the environment without the approval or authorization of the Department and shall be presumed to constitute a significant impact to public health, welfare, safety, or the environment.

(b) If the owner or operator of an electricity generating facility is not holding sufficient allowances in its allowance registry account by March 1st of each year to offset its CO_2 emissions as calculated in accordance with the requirements of 310 CMR 7.74(6)(e), then within 14 calendar days of receipt of notice by the Department, the owner or operator shall transfer into the electricity generating facility's allowance registry account, three additional allowances for every one ton of CO_2 emissions not offset, and then the Department will deduct the allowances from the allowance registry account.

(c) In addition to the requirements of 310 CMR 7.74(10)(a) and (b), the Department may enforce the requirements of 310 CMR 7.74 in accordance with applicable federal and Massachusetts law, including but not limited to M.G.L. c. 21A, § 16 and 310 CMR 5.00: *Administrative Penalty*; M.G.L. c. 111, § 2C; M.G.L. c. 111, §§ 142A through 142E and M.G.L. c. 21N, § 7(d).

(11) Program Review. Not later than December 31, 2021 and every ten years thereafter, the Department shall complete a review, including an opportunity for public comment, of the requirements of 310 CMR 7.74 to determine whether the program should be amended. This review shall evaluate CO_2 emissions, costs, consistency with statewide CO_2 emissions limits established pursuant to M.G.L. c. 21N, and any other information relevant to review of the program.

(12) Declining CO_2 Emissions Limits in Existing Plan Approvals. The requirements in 310 CMR 7.74 supersede the declining annual GHG or CO_2 emissions limits in an electricity generating facility's plan approval issued pursuant to 310 CMR 7.02. All other terms and conditions of such plan approval remain in effect unless a modification of such plan approval is issued by the Department in accordance with 310 CMR 7.02.

(13) Compliance with all Applicable Requirements. An owner or operator of an electricity generating facility subject to 310 CMR 7.74 shall comply with all other state and federal applicable statutes and regulations.

(14) Owner and Operator Responsible for Compliance. Whenever any provision in 310 CMR 7.74 requires an action to be taken by an owner or operator, any owner or operator of an electricity generating facility may take the action; provided that all owners and operators of the electricity generating facility are responsible for ensuring that the proper action is taken, and all owners and operators are jointly and severally liable for compliance with 310 CMR 7.74.

7.75: Clean Energy Standard

(1) Purpose, Authority and Scope. The purpose of 310 CMR 7.75, promulgated in conjunction with 310 CMR 7.74, is to assist the Commonwealth in achieving the greenhouse gas emissions reduction goals adopted pursuant to M.G.L. c. 21N, § 3(b), by establishing a clean energy standard (CES) that will increase the level of clean electricity that is purchased from the regional electric grid for consumption in Massachusetts. To achieve those goals, the Executive Office of Energy and Environmental Affairs (EEA) and the Department, pursuant to M.G.L. c. 21A, §§ 2 and 8 and M.G.L. c. 21N, §§ 3(c), 4 and 7, hereby jointly promulgate 310 CMR 7.75 following consultation with the Department of Energy Resources (DOER) and based on the considerations specified in M.G.L. c. 21N, § 3(c). In exercising their broad authority and discretion under M.G.L. c. 21N, § 3(c), EEA and the Department have determined that establishing the CES, along with the Commonwealth's other climate programs and policies, will ensure achievement of the greenhouse gas emissions limits as established under M.G.L. c. 21N, and that the 310 CMR 7.75 levels are consistent with, and take account of, regional programs such as the Regional Greenhouse Gas Initiative (RGGI) and the Renewable Portfolio Standard (RPS). The Department is also consolidating in 310 CMR 7.75 a requirement previously codified at 310 CMR 7.71(9) for retail sellers of electricity to report statewide greenhouse gas emissions and to monitor and ensure compliance with the reporting provisions of M.G.L. c. 21N, § 2(a)(5). 310 CMR 7.75 is also promulgated pursuant to M.G.L. c. 21A, § 16 and M.G.L. c. 111, §§ 2C and 142A through 142E.

(2) Definitions. The terms used in 310 CMR 7.75 are defined in 310 CMR 7.75(2) and 310 CMR 7.00: *Definitions*. Where a term is defined in both 310 CMR 7.00: *Definitions* and 7.75, the definition in 310 CMR 7.75 shall apply.

Biogenic Greenhouse Gas Emissions means emissions of carbon dioxide that result from the combustion of biogenic (plant or animal) material, excluding fossil fuels.

Business Day means Monday through Friday, exclusive of state and federal legal holidays.

Carbon Dioxide Equivalent means the amount of carbon dioxide by weight that would produce the same amount of global warming impact as a given weight of another greenhouse gas.

Certificates Obligation means a term defined in the NEPOOL GIS operating rules at Rule 4.1(b).

CES Alternative Compliance Credit means a credit obtained by a retail seller of electricity upon making a CES alternative compliance payment. Such credit is used to document compliance with 310 CMR 7.75(4). One unit of credit shall be equivalent to one clean generation attribute.

CES Alternative Compliance Payment (CES ACP) means a payment of a certain dollar amount per MWh, resulting in the issuance of CES alternative compliance credits, which a retail seller of electricity may submit to the Department in *lieu* of providing clean generation attributes required under 310 CMR 7.75(4).

CES Statement of Qualification means a written document from the Department that qualifies a generation unit as a clean generation unit, or that qualifies a portion of the annual electrical energy output of a generation unit as clean generation.

Clean Generation means the electrical energy output excluding any electrical energy utilized for parasitic load of a clean generation unit, or that portion of the electrical energy output excluding any electrical energy utilized for parasitic load of a clean generation unit that qualifies under:

(a) the special provisions for a generation unit located in a control area adjacent to the ISO-NE control area, pursuant to 310 CMR 7.75(7)(b); or

(b) any other applicable provision of 310 CMR 7.75 or 225 CMR 14.00: *Renewable Energy Portfolio Standard - Class I.*

Clean Generation Attribute. The generation attribute that is either:

(a) a generation attribute of the electrical energy output of a specific clean generation unit that derives from the unit's production of clean generation; or

(b) any other generation attribute that is retained pursuant to St. 2008, c. 169, § 83D(h), as inserted by St. 2016, c. 188, § 12. All generation attributes retained pursuant to St. 2008, c. 169, § 83D(h), as inserted by St. 2016, c. 188, § 12, including such generation attributes that derive from generation units that do not satisfy all limitations in 310 CMR 7.75(7), are clean generation attributes.

7.75: continued

Clean Generation Unit means a generation unit or aggregation that has received a CES statement of qualification from the Department, or that has received an RPS statement of qualification from DOER.

Commercial Operation Date means the date that a generation unit first produces electrical energy for sale within the ISO-NE control area or within an adjacent control area. In the case of transmission capacity that is used to transmit clean energy, the date on which the transmission capacity first transmitted energy into the ISO-NE control area or an adjacent control area.

Compliance Filing means a document filed annually by a retail seller of electricity in a format determined by the Department documenting compliance with 310 CMR 7.75(4), submitted no later than the first day of July, or the first business day thereafter, of the subsequent compliance year.

Compliance Year means a calendar year beginning January 1st and ending December 31st, for which a retail seller of electricity that is not an Municipal Electric Department or Municipal Light Board must demonstrate that it has met the requirements of 310 CMR 7.75(4) and (5).

Control Area means a geographic region in which a common generation control system is used to maintain scheduled interchange of electrical energy within and without the region.

Dedicated Transmission Line means a transmission line with a commercial operation date after December 31, 2017 that is not electrically connected to any generation unit that is not a clean generation unit.

Emitting Electricity Generators means electricity generators that are powered by any fossil or biogenic fuels.

Emitting Megawatt Hours means megawatt hours that are generated by emitting electricity generators.

End-use Customer means a person or entity in Massachusetts that purchases electrical energy at retail from a retail seller of electricity, except that a generation unit taking station service at wholesale from ISO-NE or self-supplying from its owner's other generating stations, shall not be considered an end-use customer.

Generation Attribute means a non-price characteristic of the electrical energy output of a generation unit including, but not limited to, the unit's fuel type, emissions, vintage and eligibility for renewable or clean energy programs.

GIS Certificate means an electronic record produced by the NEPOOL GIS that identifies generation attributes of each MWh accounted for in the NEPOOL GIS.

Greenhouse Gas means any chemical or physical substance that is emitted into the air and that the Department may reasonably anticipate will cause or contribute to climate change including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

Intermittent Generation Unit means as determined by the Department, a generation unit that utilizes resources regarding which the timing or magnitude is not predictable or controllable.

ISO-NE means ISO New England Inc., the independent system operator for New England, the regional transmission organization for most of New England, which is authorized by the Federal Energy Regulatory Commission (FERC) to exercise for the New England Control Area the functions required pursuant to the FERC's Order No. 2000 and the FERC's corresponding regulations.

ISO-NE Settlement Market System means the ISO-NE's electronic database system into which all real-time load and generation data are entered and from which such data are provided to the NEPOOL GIS.

7.75: continued

Lifecycle Greenhouse Gas Emissions means the aggregate quantity of greenhouse gas emissions, including, but not limited to, direct emissions and significant indirect emissions such as significant emissions from land use changes, and temporal changes in forest carbon sequestration and emissions resulting from biomass harvests, regrowth, and avoided decomposition as determined by the department, related to the full fuel lifecycle, including all stages of fuel and feedstock production and distribution, from feedstock generation or extraction through the distribution and delivery of the finished fuel to the ultimate consumer, where the mass values for all greenhouse gases are adjusted to account for their relative global warming potential.

Massachusetts Department of Energy Resources or DOER means the Massachusetts agency established pursuant to M.G.L. c. 25A, §§ 1 through 13.

Megawatt-hour (Mwh) means a unit of electrical energy or work equivalent to one million watts of power operating for one hour.

Municipal Electric Department (MED) means a municipal electric department as defined in M.G.L. c. 164A, § 1.

Municipal Light Board (MLB) means a municipal light board as defined in M.G.L. c. 164A, § 1.

NEPOOL GIS means the NEPOOL Generation Information System, which includes a generation information database and certificate system, operated by the New England Power Pool (NEPOOL), its designee or successor entity, that accounts for generation attributes of electrical energy consumed and generated within, imported into, or exported from the ISO-NE control area.

NERC Tag means a document that identifies an electrical energy interchange transaction and its associated participants, assigned in accordance with rules set forth by the North American Electric Reliability Corporation (NERC), a non-profit corporation granted by the FERC the legal authority to enforce mandatory reliability standards for the U.S. bulk power system, subject to FERC oversight.

Non-emitting Electricity Generators means electricity generators powered by hydro, nuclear, ocean, solar or wind power.

Non-emitting Megawatt Hours means megawatt hours that are generated by non-emitting electricity generators.

Operator means any person or entity that has charge or control of a generation unit subject to 310 CMR 7.75(7) through (9), including without limitation a duly authorized agent or lessee of the owner, or a duly authorized independent contractor.

Owner means any person or entity that, alone or in conjunction with others, has legal ownership, a leasehold interest, or effective control over the real property or property interest upon which a generation unit is located, or the airspace above said real property, including without limitation a duly authorized agent of the owner. For the purposes of 310 CMR 7.75, Owner does not mean a person or entity holding legal title or security interest solely for the purpose of providing financing.

Retail Electricity Product means electrical energy offering that is distinguished by its generation attributes and that is offered for sale by a retail seller of electricity to end-use customers.

Retail Seller of Electricity or Retail Seller means a competitive supplier licensed by the Department of Public Utilities or, as each is defined in M.G.L. c. 164A, § 1, an electric utility, municipal electric department or municipal light board that is connected to the regional electric grid.

RPS Alternative Compliance Credit means a credit obtained by a retail seller of electricity upon making a payment pursuant to 225 CMR 14.08(3), and used to comply with 225 CMR 14.07: *Renewable Energy Portfolio Standard - Class I.*

7.75: continued

RPS Class I Renewable Generation Unit means a generation unit or aggregation that has received a statement of qualification as an RPS Class I renewable generation unit from DOER pursuant to 225 CMR 14.00: *Renewable Energy Portfolio Standard - Class I.*

RPS Statement of Qualification means a written document issued by DOER pursuant to 225 CMR 14.06: *Qualification Process for RPS Class I, Solar Carve-out Renewable Generation Units, and Solar Carve-out II Renewable Generation Units* that qualifies a generation unit or aggregation as an RPS Class I qualified generation unit, or that qualifies a portion of the annual electrical energy output of a generation unit.

Short Ton means 2000 pounds or 0.9072 metric tons.

(3) Applicability. Retail sellers are required to comply with 310 CMR 7.75.

(4) Clean Energy Standard. Beginning in calendar year 2018, the total annual sales of each retail electricity product sold to Massachusetts end-use customers by a retail seller that is not an MED or MLB shall include a minimum percentage of electrical energy sales with clean generation attributes. For calendar years 2018 through 2050, percentage requirements are listed in 310 CMR 7.75(4): *Table A.*

Table A

Year	Retail Sellers, except Municipal Electric Departments and Municipal Light Boards
2018	16%
2019	18%
2020	20%
2021	22%
2022	24%
2023	26%
2024	28%
2025	30%
2026	32%
2027	34%
2028	36%
2029	38%
2030	40%
2031	42%
2032	44%
2033	46%
2034	48%
2035	50%
2036	52%
2037	54%
2038	56%
2039	58%

7.75: continued

Table A - continued

Year	Retail Sellers, except Municipal Electric Departments and Municipal Light Boards
2040	60%
2041	62%
2042	64%
2043	66%
2044	68%
2045	70%
2046	72%
2047	74%
2048	76%
2049	78%
2050, and each year thereafter	80%

(5) Compliance Procedures for Retail Sellers that are not MEDs or MLBs.

(a) Standard Compliance. Each retail seller subject to 310 CMR 7.75(4) shall be deemed to be in compliance with 310 CMR 7.75 if the information provided in the compliance filing submitted pursuant to 310 CMR 7.75(5) is true and accurate and demonstrates compliance with 310 CMR 7.75(4). Such retail seller shall demonstrate, using a form provided by the Department or DOER that clean generation attributes used for compliance have not otherwise been, nor will be, sold, retired, claimed, used or represented, as part of electrical energy output or sales, or used to satisfy obligations in jurisdictions other than Massachusetts.

(b) Banked Compliance.

1. Beginning in 2021, a retail seller subject to 310 CMR 7.75(4) may use clean generation attributes produced in either or both of the two prior compliance years, subject to the limitations in 310 CMR 7.75(5)(b) and provided that the retail seller is in compliance with 310 CMR 7.75 for all previous compliance years. In addition, the retail seller shall demonstrate, using a form provided by the Department or DOER, that such attributes:

a. Were in excess of the clean generation attributes needed for compliance in the compliance year in which they were generated, and that such excess attributes have not previously been used for compliance with 310 CMR 7.75;

b. Do not exceed 30% of the clean energy generation attributes needed by the retail seller for compliance with 310 CMR 7.75(4) in the year they were generated, subject to 310 CMR 7.75(5)(b)1.d.;

c. Were produced during the compliance year in which they are claimed as excess by the generation of electrical energy sold to end-use customers in the ISO-NE control area; and

d. Have not otherwise been, nor will be, sold, retired, claimed or represented as part of electrical energy output or sales, or used to satisfy obligations in jurisdictions other than Massachusetts.

2. Any RPS-eligible renewable generation attributes claimed for compliance with RPS pursuant to 225 CMR 14.08(2) and used to comply with 225 CMR 14.07: *Renewable Energy Portfolio Standard - Class I* in a particular year shall be counted toward compliance with 310 CMR 7.75 in that year.

(c) Alternative Compliance. Any RPS alternative compliance credits claimed pursuant to 225 CMR 14.08(3)(a) and used to comply with 225 CMR 14.07: *Renewable Energy Portfolio Standard - Class I* shall be counted toward compliance with 310 CMR 7.75. A retail seller subject to 310 CMR 7.75(4) may discharge its obligations under 310 CMR 7.75(4), in whole or in part, by making a CES ACP to the Department. Such funds shall be deposited in a segregated account, which may be the same account established to receive auction proceeds under 310 CMR 7.74(6)(h)1.i., administered by a Trustee appointed by EEA and the Department, and used for the purposes set forth in 310 CMR 7.75(5)(c)2.

7.75: continued

1. Procedures. A retail seller subject to 310 CMR 7.75(4) shall receive CES alternative compliance credits from the Department, subject to the following:

a. The quantity of credits, specified in MWh, that can be applied to its obligations under 310 CMR 7.75(4) shall be determined by calculating the ratio of the total of CES ACPs paid for the compliance year to the CES ACP rate for that compliance year.

b. The CES ACP rate in dollars shall be 0.75 times the rate calculated annually by DOER pursuant to 225 CMR 14.08(3)(a)2. for years 2018 through 2020, and 0.50 times the rate calculated annually by DOER pursuant to 225 CMR 14.08(3)(a)2. for years 2021 through 2050.

2. Use of Funds. CES ACP funds shall be expended to further the goals of M.G.L. c. 21N by supporting programs and projects to reduce greenhouse gas emissions to mitigate the impacts of climate change, including but not limited to clean energy and vehicle electrification projects; programs or projects to support adaptation to the impacts of climate change; mitigation or adaptation programs or projects involving communities that are already adversely impacted by air pollution, including but not limited to environmental justice communities; and for the administration of any such programs or projects. CES ACP funds may also be used for the administration of 310 CMR 7.75. CES ACP funds shall be expended at the direction of the Trustee, in consultation with EEA and the Department. The Trustee, EEA and the Department may consult with and enter into agreements with other agencies within the Energy and Environmental Affairs Secretariat to assist in the administration and expenditure of CES ACP funds.

(d) Treatment of Existing Contracts. Notwithstanding 310 CMR 7.75(4), in determining the total CES-qualified MWh applied to each retail seller subject to 310 CMR 7.75(4) in 2018 and 2019, the Department shall not include that portion of electrical energy sales that were subject to a contract executed or extended prior to August 11, 2017, provided that the electricity was sold at a price specified in the contract and the retail seller provides the Department with satisfactory documentation of the terms of such contracts. Contracted electrical energy delivered after December 31, 2019 shall be included in the CES, regardless of the contract's date of execution or extension.

1. In order to demonstrate eligibility of contracts for exemption under 310 CMR 7.75(5)(d), retail sellers shall provide the relevant documentation by December 31, 2017 in accordance with a form prescribed by the Department, including, but not limited to, the execution and expiration dates of the contracts and the projected annual volume of electric energy supplied at a contract-specified price.

2. In order to demonstrate eligibility of electrical energy sales for exemption under 310 CMR 7.75(5)(d), retail sellers shall provide the relevant documentation by July 1st of the year after the sales occurred, along with information required in accordance with a form prescribed by the Department, including, but not limited to, the execution and expiration dates of the contracts and the actual annual volume of electric energy supplied at a contract-specified price.

(6) Annual Compliance Filings for Retail Sellers That Are Not MEDs or MLBs.

(a) Date of Annual Compliance Filing. For each compliance year, each retail seller subject to 310 CMR 7.75(4) shall file an annual compliance filing with the Department no later than the first day of July, or the first business day thereafter, of the subsequent compliance year. Such retail sellers shall complete an annual compliance report for compliance years 2018 through 2050.

(b) Contents of Annual Compliance Filing. For each retail electricity product, the filing shall document compliance with the provisions of 310 CMR 7.75(4) and (5) using a form provided by the Department and shall include, but not be limited to, the following:

1. Total Electrical Energy Sales to End-use Customers. Documentation of the total MWh of electrical energy allocated by the retail seller to end-use customers in the compliance year. Such allocation is defined as the total quantity of such seller's certificates obligation that the seller correctly allocated or should have allocated to all of the seller's Massachusetts retail subaccounts in the NEPOOL GIS, in compliance with all relevant provisions of Part 4 of the NEPOOL GIS Operating Rules, as specified in the Guideline on the Determination of Sales to End-use Customers.

7.75: continued

2. Electrical Energy Sales to End-use Customers by Product. Documentation of the total MWh of each retail electricity product allocated by the retail seller to end-use Massachusetts customers in the compliance year, verified by an independent third party satisfactory to the Department. Such allocation is defined as the quantity of the seller's certificates obligation that the seller correctly allocated or should have allocated to each of the seller's Massachusetts retail subaccounts at the NEPOOL GIS, in compliance with all relevant provisions of Part 4 of the NEPOOL GIS Operating Rules, as specified in the Guideline on the Determination of Sales to End-use Customers.

3. Attributes Allocated from the Compliance Year. Documentation of the total MWh of each retail electricity product allocated by the retail seller to end-use Massachusetts customers that had clean generation attributes during the compliance year, as follows:

a. For electrical energy transactions included in the ISO-NE Settlement Market System, the compliance filings shall include documentation from the NEPOOL GIS administrator of the retail seller's ownership of GIS certificates representing clean generation attributes during the compliance year.

b. For electrical energy transactions not included in the ISO-NE Settlement Market System, but for which the retail seller has secured GIS certificates from the NEPOOL GIS, the compliance filings shall include documentation from the NEPOOL GIS of the retail electricity seller's ownership of GIS Certificates representing clean generation attributes during the compliance year.

4. Attributes Allocated from Banked Compliance. Allocation by each retail seller, itemized by retail electricity product, of any quantity of clean generation attributes banked from one or both of the two previous years pursuant to 310 CMR 7.75(5)(b) that are used to demonstrate compliance with the clean energy standard in the current compliance year.

5. CES Alternative Compliance Credits. Allocation by each retail seller, itemized by retail electricity product, of any CES alternative compliance credits claimed pursuant to 310 CMR 7.75(5)(c)1. or RPS alternative compliance credits claimed pursuant to 225 CMR 14.08(3)(a), along with a copy of any alternative compliance payment receipt(s).

6. Attributes Banked for Future Compliance. Identification of any quantity of clean generation attributes, that the retail seller anticipates claiming for purposes of banked compliance in subsequent years under the banked compliance provisions of 310 CMR 7.75(5)(b).

7. Attributes Retained Pursuant to St. 2008, c. 169, § 83D(h), as inserted by St. 2016, c. 188, § 12. For the purpose of determining compliance with 310 CMR 7.75(4), clean generation attributes that are retained by an electric utility pursuant to St. 2008, c. 169, § 83D(h), as inserted by St. 2016, c. 188, § 12, and that are not attributed to RPS Class I eligible resources, shall be assigned to all end use customers served by all retail sellers subject to 310 CMR 7.75(4). The number of attributes assigned to each such retail seller's customers shall be based on the retail seller's proportion of the total retail electricity product sold statewide by all such retail sellers.

(7) Eligibility Criteria for Clean Generation Units.

(a) Eligibility Criteria. A generation unit may qualify as a clean generation unit subject to the limitations in 310 CMR 7.75(7). The Department shall consider all limitations in 310 CMR 7.75(7), including the emissions criteria in 310 CMR 7.75(7)(a)1.a.ii., when considering whether to provide the owner or operator of such unit with a CES statement of qualification pursuant to 310 CMR 7.75(8)(c).

1. Fuels, Energy Resources and Technologies. In order to be considered by the Department for qualification, a generation unit must satisfy at least one of the two eligibility criteria in 310 CMR 7.75(7)(a)1.a. and not be excluded by 310 CMR 7.75(7)(a)1.b.

a. A generation unit must satisfy at least one of the following two eligibility criteria:

i. The generation unit has been issued an RPS statement of qualification as an RPS Class I renewable generation unit pursuant to 225 CMR 14.06(3);

ii. The generation unit has net lifecycle GHG emissions, over a 20 year life cycle, that yield at least a 50% reduction of greenhouse gas emissions per unit of useful energy relative to the lifecycle greenhouse gas 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;

7.75: continued

b. A generation unit that does not satisfy applicable fuel, energy resource, or technology-specific provisions or limitations in 225 CMR 14.05(1)(a)5. through 7. shall not qualify under 310 CMR 7.75(7); provided, however, that any generation unit that is a hydroelectric generator that has a nameplate capacity greater than 30 megawatts may qualify under 310 CMR 7.75(7) if it satisfies the emissions criteria in 310 CMR 7.75(7)(a)1.a.ii.

2. Commercial Operation Date. For a generation unit that qualifies as a clean generation unit pursuant to 310 CMR 7.75(7)(a)1.a.ii., the commercial operation date shall be after December 31, 2010.

3. Metering. For a generation unit that qualifies as a clean generation unit pursuant to 310 CMR 7.75(7)(a)1., the electrical energy output from the generation unit shall be verified by the ISO-NE or by an independent verification system or person participating in the NEPOOL GIS accounting system as an independent Third Party Meter Reader, as defined in Rule 2.5(j) of the NEPOOL GIS Operating Rules, and approved by the Department.

4. Capacity Obligation. For a generation unit that qualifies as a clean generation unit pursuant to 310 CMR 7.75(7)(a)1., the generation unit's generating capacity is subject to the obligations in 310 CMR 7.75(7)(a)4.

a. The amount of the generation capacity of the generation unit whose electrical energy output is claimed as clean generation shall not be committed to any control area other than the ISO-NE control area, unless such generation unit has entered into a capacity obligation in another control area before the start of the first available compliance year for the ISO-NE forward capacity market, in which case 310 CMR 7.75(7)(a)4.a. shall apply upon the expiration of that capacity obligation.

b. The generation unit owner or operator of a generation unit that is not an intermittent generation unit shall commit to the ISO-NE Control Area the amount of the capacity of that unit claimed as clean generation by submitting, by the applicable deadline, a show of intent for the ISO-NE forward capacity auction that is the earliest available for the unit after the owner or operator has submitted a CES statement of qualification application, unless the owner or operator can provide to the Department documentation of its prior commitment to the ISO-NE control area of such capacity. The owner or operator of any unit that cannot demonstrate such prior commitment must also clear the forward capacity auction for which it has qualified, even if it must participate as a price taker.

c. A clean generation unit that was deemed unqualified by the ISO-NE for participation in the ISO-NE forward capacity market for technical reasons may commit capacity to another control area and may receive GIS certificates for the energy sold into the ISO-NE control area, subject to a determination by the Department.

(b) Special Provisions for a Generation Unit Located in a Control Area Adjacent to the ISO-NE Control Area. The portion of the total electrical energy output of a clean generation unit located in a control area adjacent to the ISO-NE control area that qualifies as clean generation shall meet the requirements in Rule 2.7(c) and all other relevant sections of the NEPOOL GIS Operating Rules, and the requirements in 310 CMR 7.75(7)(b).

1. The generation unit owner or operator shall provide documentation, using a form provided by the Department or DOER, of a contract or other legally enforceable obligation, that is executed between the generation unit owner or operator and an electrical energy purchaser located in the ISO-NE control area for delivery of the unit's electrical energy to the ISO-NE control area. Such documentation shall include provisions for obtaining associated transmission rights for delivery of the unit's electrical energy from the unit to the ISO-NE Control Area using transmission capacity with a commercial operation date after December 31, 2016. The generation unit owner or operator shall pay for evaluation and verification of the provisions of such documentation by an independent party that is engaged or approved by the Department.

2. The generation unit owner or operator shall provide documentation using a form provided by the Department or DOER, that:

a. The electrical energy delivered pursuant to the legal obligation was settled in the ISO-NE Settlement Market System;

b. The generation unit produced, during each hour of the applicable month, the amount of MWh claimed, as verified by the NEPOOL GIS administrator; if the originating control area employs a generation information system that is comparable to the NEPOOL GIS, information from that system may be used to support such documentation;

7.75: continued

c. The electrical energy delivered under the legal obligation received a NERC tag confirming transmission from the adjacent control area to the ISO-NE control area using transmission capacity with a commercial operation date after December 31, 2016; and

d. The clean generation attributes have not otherwise been, nor will be, sold, retired, claimed, used or represented as part of electrical energy output or sales, or used to satisfy obligations in jurisdictions other than Massachusetts.

3. The generation unit owner or operator must provide an attestation in a form approved by the Department that it will not itself or through any affiliate or other contracted party, knowingly engage in the process of importing clean generation into the ISO-NE control area for the creation of clean GIS certificates, and then exporting that energy or a similar quantity of other energy out of the ISO-NE control area during the same hour.

4. The quantity of electrical energy output from a clean generation unit outside the ISO-NE control area that can qualify as clean generation at the NEPOOL GIS during each hour is limited to the lesser of the clean generation actually produced by the unit or the clean generation actually scheduled and delivered into the ISO-NE control area.

5. For the purpose of determining compliance with 310 CMR 7.75(7)(b) and all other provisions of 310 CMR 7.75, a clean generation unit that delivers clean energy into the ISO-NE control area or an adjacent control area through a dedicated transmission line shall be considered to be located in the control area to which the clean energy is delivered.

(8) Qualification Process for Clean Energy Generation Units.

(a) CES Statement of Qualification Application. For clean generation units that have not received an RPS statement of qualification, a CES statement of qualification application shall be submitted to the Department by the owner or operator of the generation unit. The applicant must use the most current forms and associated instructions provided by the Department, and must include all information, documentation, and assurances required by such forms and instructions.

(b) Review Procedures.

1. The Department shall notify the applicant when the CES statement of qualification application is administratively complete or if additional information is required pursuant to 310 CMR 7.75(8)(a).

2. The Department may, in its sole discretion, provide an opportunity for public comment on any CES statement of qualification application.

(c) Issuance or Non-issuance of a CES Statement of Qualification.

1. If the Department finds that all or a portion of the electrical energy output of a generation unit meets the requirements for eligibility as clean generation pursuant to 310 CMR 7.75(7)(a), and the generation unit is not eligible to receive an RPS statement of qualification from DOER, the Department shall provide the owner or operator of such unit with a CES statement of qualification.

2. The CES statement of qualification shall include any applicable restrictions and conditions that the Department deems necessary to ensure compliance by a particular generation unit with the provisions of 310 CMR 7.75.

3. If the generation unit does not meet the requirements for eligibility as a clean generation unit, the Department shall provide written notice to the Owner or Operator, including the Department's reasons for such finding.

(d) Notification Requirements for Change in Eligibility Status. The owner or operator of a clean generation unit shall notify the Department of any changes in the technology, operation, emissions, fuel sources, energy resources, capacity commitment, or other characteristics of the generation unit that may affect the eligibility of the unit as a clean generation unit. The owner or operator shall submit the notification to the Department no later than five days following the end of the month during which such changes were implemented. The notice shall state the date the changes were made to the clean generation unit and describe the changes in sufficient detail to enable the Department to determine if a change in eligibility is warranted.

(e) Notification Requirements for Change in Ownership, Generation Capacity, or Contact Information. The owner or operator of a clean generation unit shall notify the Department of any changes in the ownership, operating entity, generation capacity, NEPOOL GIS account, independent verification system for the unit's electrical energy output, or contact information for the generation unit. The owner or operator shall submit the notification to the Department no later than five days following the end of the month during which such changes were implemented.

7.75: continued

(f) Time Limit for Project Implementation. Any CES statement of qualification shall expire 48 months after the issuance date of the CES statement of qualification (the expiration date) unless the commercial operation date of the generation unit is on or before the expiration date. The Department may, at its discretion, grant an extension of the expiration date of the CES statement of qualification upon petition by the owner or operator of the generation unit. If the owner or operator of such unit desires an extension, such owner or operator must submit a new CES statement of qualification application, and the decision of the Department on such new application may be made in accordance with the regulations and criteria that are applicable on the date that the Department receives that application.

(g) Suspension or Revocation of CES Statement of Qualification. The Department may suspend or revoke a CES statement of qualification if the owner or operator of a clean generation unit fails to comply with 310 CMR 7.75.

(h) Identification of Clean Generation Units. The Department shall inform the NEPOOL GIS administrator which generation units should be designated clean generation units pursuant to 310 CMR 7.75.

(9) Reporting Requirements.

(a) Certification. Any person required by 310 CMR 7.75 to submit documentation to the Department shall provide:

1. The person's name, title and business address;
2. The person's authority to certify and submit the documentation to the Department; and
3. The following certification: "I hereby certify, under the pains and penalties of perjury, that I have personally examined and am familiar with the information submitted herein and, based upon my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties, both civil and criminal, for submitting false information, including possible fines and imprisonment."

(b) Annual Clean Energy Resource Report. The Department shall produce and make available to the public an annual report that summarizes information submitted to the Department by retail sellers subject to 310 CMR 7.75(4) in the annual compliance filings submitted to the Department pursuant to 310 CMR 7.75(6)(b). Such report shall include non-confidential data that provides the following:

1. The extent to which the retail sellers complied with the minimum clean energy standard, both separately and combined;
2. The extent to which the retail sellers used standard compliance, banked compliance, and alternative compliance, in meeting the minimum standards; and
3. The names, locations, and types of clean generation from which the retail sellers, as an aggregate, obtained the clean energy attributes used in meeting the minimum standards.

(c) Greenhouse Gas Emissions Reporting.

1. Each retail seller shall report annually to the Department its MWh sold and associated greenhouse gas emissions. The first required reporting year for retail sellers which are new competitive suppliers is the first year after 2017 in which they sell electricity in Massachusetts. Biogenic and non-biogenic greenhouse gas emissions shall be reported separately. This report shall be on a form provided by the Department.
2. Deadlines.
   a. Beginning with 2018 calendar year generation, retail sellers subject to 310 CMR 7.75(4) shall report the MWh required in 310 CMR 7.75(9)(c)4.a. through c. on a form provided by the Department no later than the first day of July after the calendar year in which the MWh were generated.
   b. Beginning with 2018 calendar year emissions, the annual GHG emissions report shall be submitted no later than the 15th day of the second September following each calendar year. The report shall be submitted using the final annual emission factors provided by the Department for the purpose of calculating greenhouse gas emissions pursuant to 310 CMR 7.75(9)(c)3.
   c. In order to finalize the annual biogenic and non-biogenic emission factors, the Department shall:

7.75: continued

i. post draft annual emission factors, including methodologies and data sources, on its website for public comment for 30 days and notify retail sellers of the posting and the deadline for submittal of public comment; and

ii. post final annual emission factors, including methodologies and data sources, on its website.

d. Beginning with 2018 calendar year generation, MEDs and MLBs choosing to report under 310 CMR 7.75(9)(c)5.b. and c. shall submit those reports on a form provided by the Department no later than the first day of July after the calendar year in which the MWh were generated.

3. For the report required in 310 CMR 7.75(9)(c)2.b., all retail sellers shall use the following formula to calculate greenhouse gas emissions:

GHG = (EF * MWh / 2000 pounds per short ton) + emissions reported in 310 CMR 7.75(9)(c)6.

Where:

GHG = Short tons of greenhouse gases (in carbon dioxide equivalents) associated with electricity sold in MA in a particular calendar year.

EF = Emission factors supplied by the Department each year for biogenic and non-biogenic greenhouse gas emissions (pounds carbon dioxide equivalents per MWh).

MWh = Annual electricity consumed by customers in a particular calendar year, increased to account for the portion of electricity lost during transmission and distribution (line losses), as reported pursuant to 310 CMR 7.75(6)(b)1. or 310 CMR 7.75(9)(c)5.a., less the sum of certificates reported pursuant to 310 CMR 7.75(9)(c)4.b. and c. or MWh reported pursuant to 310 CMR 7.75(9)(c)5.b. and c.

4. Source of Megawatt Hour and Emissions Data for Retail Sellers Subject to 310 CMR 7.75(4).

a. In calculating biogenic and non-biogenic greenhouse gas emissions, retail sellers shall report the same number of MWh used to calculate any CES certificates obligation under 310 CMR 7.75(6)(b)1., inclusive of line losses.

b. Retail sellers shall report, by fuel and by state or province, the number of emitting and non-emitting MWh of electricity generated by emitting and non-emitting electricity generators represented by GIS renewable energy certificates or clean energy certificates retired in such seller's NEPOOL GIS Massachusetts Retail Subaccount, as defined in the NEPOOL GIS Operating Rules.

c. If the number of GIS certificates retired in a retail seller's NEPOOL GIS Massachusetts Retail Subaccount and reported pursuant to 310 CMR 7.75(9)(c)4.b. are greater than the MWh reported pursuant to 310 CMR 7.75(9)(c)4.a., the retail seller shall indicate, on the 310 CMR 7.75(9)(c)4.b. report, which certificates will be excluded from GHG reporting so that the number of certificates does not exceed the MWh reported.

5. Source of Megawatt Hour and Emissions Data for Retail Sellers That Are MEDs or MLBs.

a. In calculating biogenic and non-biogenic greenhouse gas emissions, MEDs and MLBs shall use the same number of MWh reported in the annual return to the Department of Public Utilities, inclusive of line losses.

b. Optional MED and MLB Reporting of Non-emitting Electricity. MEDs and MLBs may choose to subtract any MWh of electricity generated by non-emitting electricity generators from the amount of MWh reported in 310 CMR 7.75(9)(c)5.a., if such non-emitting MWh are reported in the annual report due under 310 CMR 7.75(9)(c)1., and provided the following criteria are met:

i. the MED or MLB reports MWh by fuel and by state or province;

ii. the MED or MLB provides information from the NEPOOL GIS showing that the certificates associated with the non-emitting MWh of electricity were unsettled certificates whose attributes were aggregated in residual mix certificates, both as defined in the NEPOOL GIS Operating Rules; and

iii. for non-emitting electricity generators not owned by the MED or MLB, the MED or MLB provides a copy of the contract or contracts establishing that it has purchased electricity from such non-emitting electricity generators and reports such Mwh.

7.75: continued

c. Optional MED and MLB Reporting of Emitting Electricity. MEDs and MLBs may choose to report calculations of biogenic and non-biogenic greenhouse gas emissions, based on the methodology provided in 310 CMR 7.75(9)(c)6., if such emitting MWh are reported in the annual report due under 310 CMR 7.75(9)(c)1., and provided the following criteria are met:

i. the MED or MLB reports MWh by fuel and by state or province;

ii. the MED or MLB provides information from the NEPOOL GIS showing that the certificates associated with the emitting MWh of electricity were unsettled certificates whose attributes were aggregated in residual mix certificates, both as defined in the NEPOOL GIS Operating Rules; and

iii. for emitting electricity generators not owned by the MED or MLB, the MED or MLB provides a copy of the contract or contracts establishing that the MED or MLB has purchased electricity from such emitting electricity generators.

d. The total of all optional non-emitting and emitting MWh reported under 310 CMR 7.75(9)(c)5.b. and c. shall not be greater than the MWh reported in 310 CMR 7.75(9)(c)5.a.

6. Carbon dioxide, methane and nitrous oxide emissions from any emitting electricity generator shall be reported as follows:

GHGi = (EFi * MWhi / 2000 pounds per short ton)

Where:

GHGi = Short tons of greenhouse gases for each emitting fuel type i (in carbon dioxide equivalents) associated with electricity sold in MA in a particular calendar year.

EFi = Emission factors supplied by the Department each year for biogenic and non-biogenic greenhouse gas emissions for each emitting fuel type i (pounds carbon dioxide equivalents per MWh).

MWhi = as reported for fuel type i pursuant to 310 CMR 7.75(9)(c)4.b.

(d) The Department may specify the format and process by which any submission required pursuant to 310 CMR 7.75 shall occur, including electronic submission requirements.

(10) Not later than December 31, 2017, the Department shall complete a review, including an opportunity for public comment, of options for including generators that meet all requirements of 310 CMR 7.75, except for the commercial operation date requirements in 310 CMR 7.75(7)(a)2. and (b)1., in the clean energy standard. This review shall also examine options for including annual standards for MEDs and MLBs in the clean energy standard.

(11) Not later than December 31, 2021, the Department shall complete a review, including an opportunity for public comment on the program review, of the requirements of 310 CMR 7.75 to determine whether the program should be amended. This review shall evaluate projected clean energy credit supply and costs, and any other information relevant to review of the program.

(12) Inspection and Record Retention.

(a) Document Inspection. The Department may audit the accuracy of all information submitted pursuant to 310 CMR 7.75. The Department may request and obtain from any owner, operator or authorized agent of a clean generation unit, and from any retail seller, information that the Department determines necessary to monitor compliance with and enforcement of 310 CMR 7.75.

(b) Audit and Site Inspection. Upon reasonable notice to a retail seller or to a clean generation unit owner, operator or authorized agent, the Department may conduct audits, which may include inspection and copying of records and/or site visits to a clean energy generation unit, or a retail seller's facilities, including, but not limited to, all files and documents that the Department determines are related to compliance with 310 CMR 7.75.

(c) Record Retention. All documentation used to comply with any provision of 310 CMR 7.75 shall be retained for five years and provided to the Department electronically or in hard copy as requested by the Department.

(13) Enforcement.

(a) If a retail seller that is not an MED or MLB does not comply with the requirements of 310 CMR 7.75(4) and (5), then such retail seller shall be deemed to have caused air pollutant emissions releases to the environment without the approval or authorization of the department.

7.75: continued

(b) The requirements of 310 CMR 7.75 shall be enforced in accordance with applicable federal and Massachusetts law, including but not limited to, the issuance of an administrative order or civil administrative penalties pursuant to M.G.L. c. 21A, § 16, 310 CMR 5.00: *Administrative Penalty*, M.G.L. c. 111, §§ 2C, 142A through 142M, and M.G.L. c. 21N, § 7(d).

REGULATORY AUTHORITY

310 CMR 7.00: M.G.L. c. 111, § 142A through J.

7.29: Emissions Standards for Power Plants

(1) Purpose and Scope. The purpose of 310 CMR 7.29 is to control emissions of nitrogen oxides (NO_x), sulfur dioxide (SO_2), mercury (Hg), carbon monoxide (CO), carbon dioxide (CO_2) and fine particulate matter (PM 2.5) (together "pollutants") from affected facilities in Massachusetts. 310 CMR 7.29 accomplishes this by establishing output-based emission rates for NO_x, SO_2 and CO_2 and establishing a cap on CO_2 and Hg emissions from affected facilities. CO_2 emissions standards set forth in 310 CMR 7.29(5)(a)5.a. and b. shall not apply to emissions that occur after December 31, 2008.

(2) Definitions. The definitions in 310 CMR 7.00 apply to 310 CMR 7.29. However, the terms below have the following meanings when they appear in 310 CMR 7.29. If a term is defined both in 310 CMR 7.00 and in 310 CMR 7.29(2), the definition in 310 CMR 7.29(2) applies for the purpose of 310 CMR 7.29.

Actual Emissions for a facility means that facility's total annual emissions expressed in tons for each pollutant, as measured and reported in accordance with 310 CMR 7.29(7).

Affected Facility means a facility which emitted greater than 500 tons of SO_2 and 500 tons of NO_x during any of the calendar years 1997, 1998 or 1999 and which includes a unit which is a fossil fuel fired boiler or indirect heat exchanger that:

(a) is regulated by 40 CFR Part 72 (the Federal Acid Rain Program);
(b) serves a generator with a nameplate capacity of 100 MW or more;
(c) was permitted prior to August 7, 1977; and
(d) had not subsequently received a Plan Approval pursuant to 310 CMR 7.00: *Appendix A* or a Permit pursuant to the regulations for Prevention of Significant Deterioration, 40 CFR Part 52, prior to October 31, 1998.

Alternate Hg Designated Representative means, for a coal-fired affected facility and each coal-fired unit at the facility, the natural person who is authorized by the owners and operators of the facility and all such units at the facility in accordance with 40 CFR 60.4110 through 60.4114, to act on behalf of the Hg designated representative in matters pertaining to mercury monitoring, recordkeeping, reporting and compliance.

Alternative Monitoring System means a system or a component of a system designed to provide direct or indirect data of mass emissions per time period, pollutant concentrations, or volumetric flow, that is demonstrated to the Administrator as having the same precision, reliability, accessibility, and timeliness as the data provided by a certified CEMS or certified CEMS component in accordance with 40 CFR Part 75.

Ash means bottom ash, fly ash or ash generated by an ash reduction process derived from combustion of fossil fuels, carbon or other substances.

Automated Data Acquisition and Handling System or DAHS means that component of the mercury continuous emission monitoring system (CEMS), or other emissions monitoring system approved for use under 40 CFR 60.4170 though 60.4176, designed to interpret and convert individual output signals from pollutant concentration monitors, flow monitors, diluent gas monitors, and other component parts of the monitoring system to produce a continuous record of the measured parameters in the measurement units required by 40 CFR 60.4170 through 60.4176.

Block Hourly Average means the average of all valid emission concentrations when the affected unit is operating, measured over a one-hour period of time from the beginning of an hour to the beginning of the next hour.

Calendar Quarter means any consecutive three-month period (nonoverlapping) beginning January 1st, April 1st, July 1st or October 1st.

Calendar Year means any period beginning January 1st and ending December 31st.

Continuous Emission Monitoring System or CEMS means the equipment required by 40 CFR Part 75 used to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of SO_2, NO_x or CO_2 emissions or stack gas volumetric flow rate.

7.29: continued

Historical Actual Emissions or Historical Actual Emission Rate means the average annual emissions or output-based emission rate averaged over 1997, 1998 and 1999. A different three-year period within the past five years may be used if requested by the owner of an affected facility, and if the Department determines that period is more representative of historical actual emissions.

Mercury (Hg) Designated Representative means, for a coal-fired affected facility and each coal-fired unit at the facility, the natural person who is authorized by the owners and operators of the facility and all such units at the facility, in accordance with 40 CFR 60.4110 through 60.4114, to represent and legally bind each owner and operator in matters pertaining to mercury monitoring, recordkeeping, reporting and compliance.

Mercury Continuous Emission Monitoring System or Mercury CEMS means the equipment required under 40 CFR 60.4170 through 60.4176 to sample, analyze, measure, and provide, by means of readings recorded at least once every 15 minutes (using an automated data acquisition and handling system (DAHS)), a permanent record of Hg emissions, stack gas volumetric flow rate, stack gas moisture content, and oxygen or carbon dioxide concentration (as applicable), in a manner consistent with 40 CFR Part 75. The following systems are the principal types of CEMS required under 40 CFR 60.4170 through 60.4176:

(a) A flow monitoring system, consisting of a stack flow rate monitor and an automated data acquisition and handling system and providing a permanent, continuous record of stack gas volumetric flow rate, in units of standard cubic feet per hour (SCFH);

(b) A Hg concentration monitoring system, consisting of a Hg pollutant concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of Hg emissions in units of micrograms per dry standard cubic meter (μg/dscm);

(c) A moisture monitoring system, as defined in 40 CFR 75.11(b)(2) and providing a permanent, continuous record of the stack gas moisture content, in percent H_2O.

(d) A carbon dioxide monitoring system, consisting of a CO_2 concentration monitor (or an oxygen monitor plus suitable mathematical equations from which the CO_2 concentration is derived) and an automated data acquisition and handling system and providing a permanent, continuous record of CO_2 emissions, in percent CO_2; and

(e) An oxygen monitoring system, consisting of an O_2 concentration monitor and an automated data acquisition and handling system and providing a permanent, continuous record of O_2, in percent O_2.

Mercury Monitoring System means a mercury continuous emission monitoring system, an alternative monitoring system, or a sorbent trap monitoring system under 40 CFR Part 60 or 75 but does not mean the low mass emissions excepted monitoring methodology in 40 CFR 75.81(d).

MWh means megawatt-hours of net electrical output.

Net Electrical Output of a Facility means the total actual net electrical output of the facility used by the New England Independent System Operator to determine settlement resources of energy market participants.

Output-based Emission Rate means an emission rate for any pollutant, expressed in terms of actual emissions in pounds over a specified time period per megawatt-hour of net electrical output produced over the same time period.

Output-based Emission Standard means the emission standards for each applicable pollutant, expressed in terms of pounds of pollutant emitted per megawatt-hour of net electrical output produced, as set forth in 310 CMR 7.29(5).

Repowering means:

(a) Qualifying Repowering Technology as defined by 40 CFR Part 72 or,

(b) The replacement of the heat or power from a unit subject to 40 CFR Part 72 at an affected facility with either a new combustion unit, regardless of the fuel used, or the purchase of heat or power from the owner of a new combustion unit, regardless of the fuel used, provided the replacement unit:

7.29: continued

1. (Regardless of owner) is on the same, or contiguous property as the replaced unit;
2. Has a maximum heat output rate or power output rate equal to or greater than the maximum heat output rate or power output rate of the replaced unit; and, the replaced unit is physically removed from the affected facility, or the heat or power available from the replaced unit is limited by limiting hours of operation, maximum heat input or some other method approved by the Department; and,
3. Incorporates technology capable of controlling multiple combustion pollutants simultaneously with improved fuel, boiler or generation efficiency and significantly greater waste reduction relative to the performance of technology in widespread commercial use as determined by the Department.

Rolling with respect to an average means the calculation of an average by dropping the earliest month or calendar quarter value and incorporating the latest month or calendar quarter value for the period over which an average is calculated.

Sorbent Trap Monitoring System means the equipment required by 40 CFR Part 75 for the continuous monitoring of mercury emissions, using paired sorbent traps containing iodinized charcoal (IC) or other suitable reagent(s). This excepted monitoring system consists of a probe, the paired sorbent traps, a heated umbilical line, moisture removal components, an airtight sample pump, a dry gas meter, and an automated data acquisition and handling system. The monitoring system samples the stack gas at a rate proportional to the stack gas volumetric flow rate. The sampling is a batch process. Using the sample volume measured by the dry gas meter and the results of the analyses of the sorbent traps, the average mercury concentration in the stack gas for the sampling period is determined, in units of micrograms per dry standard cubic meter (µg/dscm). Mercury mass emissions for each hour in the sampling period are calculated using the average mercury concentration for that period, in conjunction with contemporaneous hourly measurements of the stack gas flow rate, corrected for the stack gas moisture content.

Total Mercury means the sum of particulate-bound and vapor-phase (elemental and oxidized) mercury in combustion gases or emitted to the atmosphere.

(3) Applicability. The provisions of 310 CMR 7.29 apply to any person who owns, leases, operates or controls an affected facility.

(4) General Provisions.

(a) Each affected facility shall comply with the applicable emission standards established in 310 CMR 7.29(5).

(b) Any person subject to 310 CMR 7.29 shall comply with all other applicable regulations, including, but not limited to: 310 CMR 7.02: *U Plan Approval and Emission Limitations*; 310 CMR 7.19: *Reasonably Available Control Technology (RACT) for sources of Oxides of Nitrogen (NO_x)*; 310 CMR 7.28: *NO_x Allowance Trading Program*; 310 CMR 7.70 *CO_2 Budget Trading Program*; 310 CMR 7.00: *Appendix A: Emissions Offsets and Nonattainment Review*; and 310 CMR 7.00: *Appendix C: Operating Permit and Compliance Program*. If provisions or requirements from any other regulation or permit conflict with a provision of 310 CMR 7.29, the more stringent of the provisions will apply unless otherwise determined by the Department in the affected facility's operating permit. Regardless of the Department's determination in the operating permit, any person subject to 310 CMR 7.29 shall comply with all applicable federal requirements.

(c) In the case of imminent threat to the reliability of New England's electricity system, the Department may promulgate an emergency regulation, as per M.G.L. c. 30A, §§ 2 and 3, to mitigate the emergency situation.

(5) Emission Requirements.

(a) Emission Standards for Affected Facilities.

1. Nitrogen Oxides Emission Standards.

a. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of nitrogen oxides shall not exceed an emission rate of 1.5 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly; and,

b. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of nitrogen oxides shall not exceed an emission rate of 3.0 lbs./MWh calculated over any individual calendar month.

7.29: continued

2. Sulfur Dioxide Emission Standards.
   a. Effective on the applicable date in 310 CMR 7.29(6)(c), emissions of sulfur dioxide shall not exceed an emission rate of 6.0 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly.
   b. Effective on the applicable date in 310 CMR 7.29(6)(c),
      i. Emissions of sulfur dioxide shall not exceed an emission rate of 3.0 lbs./MWh calculated over any consecutive 12 month period, recalculated monthly; and,
      ii. Emissions of sulfur dioxide shall not exceed an emission rate of 6.0 lbs./MWh calculated over any individual calendar month.
3. Mercury Emissions.
   a. By December 1, 2002, the Department will complete an evaluation of the technological and economic feasibility of controlling and eliminating emissions of mercury from the combustion of solid fossil fuel in Massachusetts in accordance with the Mercury Action Plan of the Conference of New England Governors and Eastern Canadian Premiers.
   b. Deleted.
   c. The Emission Control Plan submitted to the Department under 310 CMR 7.29(6) shall demonstrate, and any person who owns, leases, operates or controls an affected facility shall ensure, that beginning at the time of the affected facility's earliest applicable compliance date in 310 CMR 7.29(6)(c), or at the time of the facility's earliest applicable Phase 1 NOx and SO_2 compliance date under an administrative order existing prior to June 4, 2004, whichever is later, total annual mercury emissions from combustion of solid fuels in units subject to 40 CFR Part 72 located at an affected facility or from re-burn of ash in Massachusetts will not exceed the average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii.. The average annual emissions calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii. equal the average measured pounds of mercury emitted per million Btu consumed multiplied by the heat input in million Btu averaged over 1997, 1998 and 1999. A different three-calendar-year period within the five years prior to May 11, 2001 may be used if requested by the owner of an affected facility, and if the Department determines that the different period is more representative of historical actual heat input. Total annual mercury emissions equal the total emissions from:
      i. combustion of solid fossil fuel in units subject to 40 CFR Part 72 located at an affected facility, determined using emissions testing at least every other calendar quarter from October 1, 2006 until a certified mercury monitoring system is used to demonstrate compliance with the standards in 310 CMR 7.29(5)(a)3.e. or f., and using a certified mercury monitoring system thereafter, and
      ii. re-burn of ash, where such ash was produced by the combustion of fossil fuel or ash at any affected facility. When ash is re-burned at an affected facility, the associated mercury emissions shall be attributed to the affected facility at which the ash is re-burned. When ash produced by an affected facility is used in Massachusetts as a cement kiln fuel, as an asphalt filler, or in other high temperature processes that volatilize mercury,
         (i) the mercury content of the utilized ash shall be measured weekly using a method acceptable to the Department,
         (ii) all of the mercury in the utilized ash shall be assumed to be emitted, unless it can be demonstrated with data acceptable to the Department that a lesser amount of mercury is emitted,
         (iii) the associated mercury emissions shall be attributed to the affected facility from which the ash is shipped to the cement kiln, asphalt batching plant or other high temperature processing location, and
         (iv) a proposal shall be submitted for Department approval at least 45 days prior to such use, or at least 45 days prior to October 1, 2006, whichever is later, detailing the proposed measurement methods to be used to comply with 7.29(5)(a)3.c.ii.(i) and (ii).

7.29: continued

d. Fuel Sampling and Stack Testing.

i. Beginning on May 11, 2001 until August 1, 2002, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel in a Part 72 unit shall test each shipment of coal at the time received. The test shall be conducted by a method approved by the Department, and report the mercury and chlorine content of the coal. The results of each interim fuel testing shall be reported to the Department with the results of the next stack test as required in 310 CMR 7.29(5)(a)3.d.ii.

ii. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall perform stack tests for mercury. The stack tests shall:

- Be conducted using a DEP-approved test method detailed in a test protocol submitted to the Department at least 45 days before commencement of testing, and notify the Department of the specific date the test will be conducted at least 30 days prior to conducting the test;
- Test the mercury concentrations and species before all add-on air pollution control equipment (inlet) and after (outlet);
- Be conducted as follows: One test shall be performed before August 1, 2001,

A second test shall be performed after December 1, 2001 but not later than February 1, 2002,

A third test shall be performed after June 1, 2002 but not later than August 1, 200_.

- The results of each stack test shall be reported to the Department within 30 days after conducting each stack test.

iii. Until a certified mercury monitoring system is installed, stack tests for mercury shall consist at a minimum of three runs at full load on each unit firing solid fossil fuel or ash according to a testing protocol acceptable to the Department. Unless a mercury monitoring system that measures particulate-bound mercury, either combined with or separate from the measurement of vapor-phase mercury, is installed at a unit for purposes of determining compliance with the standards in 310 CMR 7.29(5)(a)3.c., e. and f., stack tests for mercury, and certification tests and Relative Accuracy Test Audits for mercury monitoring systems, shall determine total and particulate-bound mercury. Relative accuracy shall be calculated as specified in 40 CFR Part 75. The results of each stack test shall be reported to the Department within 45 days after conducting each stack test.

e. Effective on January 1, 2008, or 15 months after the facility's earliest applicable Phase 1 NO_x and SO_2 compliance date under an administrative order existing prior to June 4, 2004, whichever is later, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least one of the following mercury emissions standards:

i. a facility average total mercury removal efficiency of 85% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency based on a mercury monitoring system shall be calculated based on the average historic mercury inlet emissions determined under 310 CMR 7.29(5)(a)3.d.ii. using the methodology approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. and shall be calculated on a rolling 12 month basis; or

ii. a facility average total mercury emissions rate of 0.0075 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emissions rate based on a mercury monitoring system shall be calculated using the mercury mass emissions methodology specified in 40 CFR Part 75 and approved by the Department in the monitoring plan required under 310 CMR 7.29(5)(a)3.g. and shall be calculated on a rolling 12 month basis.

7.29: continued

iii. Notwithstanding 310 CMR 7.29(5)(a)3.e.i. and ii., any person who owns, leases, operates or controls an affected unit which combusts solid fossil fuel or ash and has an enforceable commitment with the Department to terminate operations by January 1, 2010, may comply with 310 CMR 7.29 (5)(a)3.e.i. or ii. through January 1, 2010 by complying with an approved 310 CMR 7.29 emission control plan modification achieving early or off-site reductions. To comply with the foregoing, such person shall propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan. Such early or off-site reductions shall be in an amount of at least the equivalent mass of mercury reductions required under 310 CMR 7.29 (5)(a)3.e.i. or ii. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310 CMR 7.29(5)(a)3.e. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

f. Effective on October 1, 2012, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall comply with at least one of the following mercury emissions standards:

i. a facility average total mercury removal efficiency of 95% or greater for those units combusting solid fossil fuel or ash. The mercury removal efficiency shall be calculated based on a mercury monitoring system as provided in 310 CMR 7.29(5)(a)3.e.i.; or

ii. an average total mercury emission rate of 0.0025 lbs./GWh or less for those units combusting solid fossil fuel or ash. The mercury emission rate shall be calculated based on a mercury monitoring system as provided in 310 CMR 7.29(5)(a)3.e.ii.

g. Mercury Monitoring Systems.

i. By January 1, 2008, any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel or ash shall install, certify, and operate a mercury monitoring system in accordance with 40 CFR Part 75 and 40 CFR 60.4106(b)(1) to measure mercury stack emissions from each solid fossil fuel- or ash-fired unit at a facility subject to 310 CMR 7.29. Any person required to install a mercury monitoring system shall submit a monitoring plan for Department approval and shall propose to amend the approved emission control plan in accordance with 310 CMR 7.29(6)(n)1. to incorporate the mercury monitoring approach at least 45 days prior to the commencement of initial certification testing.

ii. Affected facilities must include in their monitoring plan a proposed methodology to demonstrate compliance with the emission standards in 310 CMR 7.29(5)(a)3.e. and f.

iii. If a mercury monitoring system capable of measuring only vapor-phase mercury is installed at a unit for purposes of determining compliance with the standards in 310 CMR 7.29(5)(a)3.c., e. and f., total mercury shall be determined by taking into account the average particulate-bound mercury measured during the most recent stack test on that unit in combination with the total vapor-phase mercury measured by the mercury monitoring system until such time as a mercury monitoring system to measure particulate-bound mercury is installed and operational at a unit.

iv. (i) Notwithstanding 310 CMR 7.29(5)(a)3.g.i., a unit with an enforceable commitment to terminate operations by January 1, 2010 and that qualifies to use the mercury low mass emissions excepted monitoring methodology under 40 CFR 75.81(b) may choose between quarterly stack testing and a mercury monitoring system to document mercury emissions in the period from January 1, 2008 until the time such unit terminates operation or January 1, 2009, whichever is earlier.

7.29: continued

(ii) Notwithstanding 310 CMR 7.29(5)(a)3.g.i., a unit with an enforceable commitment to terminate operations by January 1, 2010 and that qualifies to use the mercury low mass emissions excepted monitoring methodology under 40 CFR 75.81(b) may choose between the low mass emissions excepted monitoring methodology with retests conducted at least every calendar quarter and a mercury monitoring system to document mercury emissions in the period from January 1, 2009 until the time such unit terminates operation or January 1, 2010, whichever is earlier; however, if such a unit must install a mercury monitoring system to meet a federal requirement, then the mercury monitoring system shall document mercury emissions instead of stack testing.

4. Carbon Monoxide Emission Standards. (Reserved.)

5. Carbon Dioxide Emission Standards.

a. By September 1, 2009, any person who owns, leases, operates or controls an affected facility shall demonstrate that emissions of carbon dioxide from the affected facility in calendar years 2006, 2007, and 2008, expressed in tons, from Part 72 units located at the affected facility did not exceed historical actual emissions. If the Department has received a technically complete plan approval application under 310 CMR 7.02 for a new or repowered electric generating unit subject to 40 CFR Part 72 at an affected facility prior to May 11, 2001, then the emissions from the new or repowered unit may be included in the calculation of historical actual emissions. The calculation of historical actual emissions which includes emissions from a new or repowered unit shall not include emissions from any unit shutdown or removed from operation at the affected facility that is included in the technically complete plan approval application pursuant to 310 CMR 7.02. These emissions standards shall not apply to the emissions of CO_2 that occur after December 31, 2008.

b. By September 1, 2009, any person who owns, leases, operates or controls an affected facility shall demonstrate to the Department that the average emission rate of carbon dioxide from Part 72 units located at the affected facility did not exceed an emission rate of 1800 lbs./MWh in calendar year 2008. The average emission rate is calculated by dividing the total number of pounds of CO_2 emitted by the affected facility in the calendar year by the net electrical output for the affected facility for the same calendar year. These emissions standards shall not apply to the emissions of CO_2 that occur after December 31, 2008.

c. Compliance with 310 CMR 7.29(5)(a)5.a. may be demonstrated by using emission reductions, avoided emissions or sequestered emissions verified under 310 CMR 7.00: *Appendix B*(7) to offset emissions above the historical actual emissions, provided the Department determines such emission reductions, avoided emissions or sequestered emissions are real, additional, verifiable, permanent, and enforceable, as defined in 310 CMR 7.00: *Appendix B*(7) or by using the GHG Expendable Trust under the conditions specified in 310 CMR 7.00: *Appendix B*(7)(d)5.

d. Compliance with 310 CMR 7.29(5)(a)5.b. may be demonstrated by using emission reductions, avoided emissions or sequestered emissions verified under 310 CMR 7.00: *Appendix B*(7) to offset excess emissions, provided the Department determines such emission reductions, avoided emissions or sequestered emissions are real, additional, verifiable, permanent, and enforceable as defined in 310 CMR 7.00: *Appendix B*(7) or by using the GHG Expendable Trust under the conditions specified in 310 CMR 7.00: *Appendix B*(7)(d)5. Excess emissions are any emissions above the net electrical output of the facility times 1800 lbs./MWh.

6. Fine Particulate Matter Emissions Standards. (Reserved.)

(b) Compliance with the emission standards in 310 CMR 7.29(5)(a), may be demonstrated by any combination of the following:

1. Dividing the total emissions of each pollutant by the total net electrical output from all electric generating units subject to 40 CFR Part 72 located at the affected facility as of May 11, 2001 or repowered at the affected facility after May 11, 2001. For demonstrating compliance with the mercury emissions standards in 310 CMR 7.29(5)(a)3., the person who owns, leases, operates or controls an affected facility shall include in the calculation only units that fire solid fossil fuel or ash, or that repowered a unit that fired solid fossil fuel or ash.

7.29: continued

2. For the SO_2 emission standards in 310 CMR 7.29(5)(a)2., using SO_2 reductions at the affected facility below historical actual emissions which were made after May 11, 2001, and prior to the earliest applicable date set in 310 CMR 7.29(6). The total amount of tons produced through early reductions each year is calculated by multiplying the facility's net electrical output for that year times (the historical actual emission rate minus that year's actual emission rate in lbs./MWh) divided by 2000. The amount of early reductions, with supporting information, shall be provided to the Department prior to use for compliance with 310 CMR 7.29(5)(a)2.a.. Each ton of reduction may be used, once, to offset one ton of excess emissions from the facility. Excess emissions are any emissions above a level equal to the net electrical output of the facility times the applicable emission standard in 310 CMR 7.29(5)(a)2.

3. For the emission standards in 310 CMR 7.29(5)(a)2.b., using SO_2 allowances created pursuant to 40 CFR Part 72 (the Federal Acid Rain Program). Three allowances shall be used to offset each ton of excess emissions above the emission standard. Such SO_2 allowances shall be in addition to those allowances used by the facility to comply with the requirements of 40 CFR part 72, and shall be transferred to the Department and retired for the benefit of the environment.

(6) Emission Control Plans, Compliance Paths and Compliance Dates.

(a) Emission Control Plan Deadline and General Provisions.

1. Any person who owns, leases, operates or controls an affected facility shall submit an emission control plan for Department approval under 310 CMR 7.29 on or before January 1, 2002 regardless of the compliance path chosen.

2. Any person who owns, leases, operates or controls an affected facility who is required to submit an application for a plan approval under 310 CMR 7.02 shall submit an application for plan approval pursuant to 310 CMR 7.02 on or before January 1, 2003.

3. Any person who owns, leases, operates, or controls an affected facility which installs mercury control equipment that is not already contained in an emission control plan approval under 310 CMR 7.29 shall submit a mercury emissions control plan amendment application under 310 CMR 7.29(6)(h) at least 90 days before intended installation and may not install such equipment until receiving approval of the revision.

4. Any person who owns, leases, operates or controls an affected facility which combusts solid fossil fuel shall by December 4, 2004, propose under 310 CMR 7.29(6)(h)1. to amend the approved emission control plan to incorporate the mercury emission cap established in 310 CMR 7.29(5)(a)3.c. Notwithstanding 310 CMR 7.29(5)(a)3.c., any facility with average annual emissions of less than five pounds, calculated using the results of the stack tests required in 310 CMR 7.29(5)(a)3.d.ii., may propose and be approved to use early or off-site reductions to demonstrate compliance with 310 CMR 7.29(5)(a)3.c. through September 30, 2012. Any early reductions shall be accrued on-site at the stack prior to the compliance date effective under 310 CMR 7.29(5)(a)3.c. Any off-site mercury air emission reductions shall be accrued on at least a one pound reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit. Any other off-site mercury reductions shall be accrued on at least a ten pounds reduced for one pound credited basis from facilities located in the same DEP Region as the affected unit.

(b) Emission Control Plan Contents. The emission control plan submitted pursuant to 310 CMR 7.29(6) shall include, but is not limited to, the following:

1. The name of the company and the affected facility.

2. A list of units at the affected facility that will be used to demonstrate compliance with 310 CMR 7.29(5), including which units will be incl ded in calculating historical actual emissions.

3. The name of the company contact responsible for compliance with 310 CMR 7.29.

4. A statement that the affected facility has a monitoring plan in place which meets the requirements of 40 CFR Part 72. Any modifications to an affected facility's monitoring methodology approved pursuant to the requirements of 40 CFR 72 are hereby incorporated into the approved emission control plan under 310 CMR 7.29.

5. Signature of the company contact responsible for compliance with 310 CMR 7.29.

7.29: continued

6. Identification of the affected facility, including plant name and the ORIS or facility code assigned to the facility by the U.S. Energy Information Administration, if applicable.

7. A description of how the affected facility will comply with the emission standards contained in 310 CMR 7.29(5), by the applicable compliance dates contained in 310 CMR 7.29(6)(c), including, but not limited to, the control equipment the affected facility intends to use.

8. A proposed schedule with interim milestones for each activity leading to compliance with the requirements in 310 CMR 7.29(5). Such information shall include, but not be limited to, sufficient information to allow DEP to consult with the Division of Energy Resources and the Department of Telecommunications and Energy, to address any concerns with potential impacts to the reliability of the New England power system.

9. A description of how emission reduction measures implemented to achieve reductions in one pollutant will optimize reductions in other pollutants.

10. A description of the sampling and testing protocol(s) meeting the requirements of 310 CMR 7.29(5)(a)3.d.

11. Any other information requested by the Department.

(c) Compliance Paths and Compliance Dates.

1. Any person who owns, leases, operates or controls an affected facility who does not choose to comply with the emissions standards in 310 CMR 7.29(5) by repowering a unit subject to 40 CFR Part 72 at the affected facility, or is not required to receive a plan approval pursuant to 310 CMR 7.02 for construction, substantial reconstruction or alteration of a unit at the affected facility subject to 40 CFR Part 72 for the purpose of compliance with 310 CMR 7.29, shall begin to comply with the emission standards in 310 CMR 7.29(5) by the following dates:

a. For the emission standards in 310 CMR 7.29(5)(a)1.a. and (5)(a)2.a., October 1, 2004; and,

b. For the emission standards in 310 CMR 7.29(5)(a)1.b., and (5)(a)2.b., October 1, 2006.

2. Any person who owns, leases, operates or controls an affected facility who chooses to comply with the emissions standards in 310 CMR 7.29(5) by repowering at least one unit at the affected facility subject to 40 CFR Part 72, or is required to receive a plan approval pursuant to 310 CMR 7.02 for construction, substantial reconstruction or alteration of a unit at the affected facility subject to 40 CFR Part 72 for the purpose of compliance with 310 CMR 7.29, and submits, on or before January 1, 2003, an administratively complete application pursuant to 310 CMR 7.02, shall begin to comply with the emission standards in 310 CMR 7.29(5) by the following dates:

a. For the emissions standards contained in 310 CMR 7.29(5)(a)1.a. and (5)(a)2.a., October 1, 2006, and

b. For the emissions standards contained in 310 CMR 7.29(5)(a)1.b. and (5)(a)2.b, October 1, 2008.

3. If an affected facility has units with different applicable compliance dates for a particular standard, the later compliance date applies to all units at the affected facility.

(d) Interaction with 310 CMR 7.02. A plan approval under 310 CMR 7.02(1) may be required for construction, substantial reconstruction or alteration of a unit at an affected facility to comply with 310 CMR 7.29. If such construction, substantial reconstruction or alteration to the facility triggers any applicable section under 310 CMR 7.02(4)(a) and 310 CMR 7.02(5)(a), a plan approval under 310 CMR 7.02 is required. If a plan approval is required under 310 CMR 7.02, then upon the Department's issuance of the plan approval, the Department will modify the affected facility's emission control plan pursuant to 310 CMR 7.29(6)(g).

(e) Public Comment. If the Department proposes to approve an emission control plan or approve a plan with conditions, the Department shall issue a draft emission control plan approval. Upon issuance, the Department will publish a notice of public hearing and comment on the draft emission control plan approval, in accordance with M.G.L. c. 30A, at least 30 days before the public hearing.

7.29: continued

(f) Approval of the Emission Control Plan.

1. After the close of the public comment period, and consideration of any public comments, the Department shall issue a disapproval of the emission control plan, a final approval of the emission control plan, or a final approval of the emission control plan with conditions, based on whether the emission control plan as submitted meets the requirements of 310 CMR 7.29.

2. Upon final approval of an emission control plan, any person who owns, leases operates or controls an affected facility shall implement and comply with the approved emission control plan.

(g) Modification to an Affected Facility's Operating Permit. For any person who owns, leases, operates or controls an affected facility, the facility's operating permit will be modified upon approval of the emission control plan in accordance with the procedures in 310 CMR 7.00: *Appendix C(8)*. No additional application or fee is necessary to modify the operating permit at the same time the emission control plan is approved.

(h) Modifications to an Affected Facility's Emission Control Plan.

1. Any person subject to 310 CMR 7.29 may propose amendments to the approved emission control plan. If the Department proposes to approve such amendments, or approve such amendments with conditions, then the Department will publish a notice of public comment on the draft approval, in accordance with M.G.L. c. 30A. The Department will allow a 30 day public comment period following publication of the notice, and may hold a public hearing. Modifications to an affected facility's monitoring system approved pursuant to the requirements of 40 CFR Part 72 are not subject to such public comment prior to approval.

2. For the purposes of evaluating system performance, testing new technology or control technologies, diagnostic testing, or other related activities that are anticipated to reduce air pollution or advance the state-of-the-art technology for controlling facility mercury emissions, the Department may issue an ECP approval in the form of a limited amendment to the ECP for a limited period of time for the purpose of achieving compliance with the requirements of 310 CMR 7.29(5)(a)3.e. and f. The Department approval will detail the duration of the time period and how the facility shall report under 310 CMR 7.29(7)(b) for the duration of the time period. The Department will publish a notice of public comment on the draft approval. The Department will allow a ten day public comment period following publication of the notice, and may hold a public hearing.

(7) Reporting, Compliance Certification, and Recordkeeping.

(a) By January 30 of the year following the earliest applicable compliance date for the affected facility under 310 CMR 7.29(6)(c), and January 30 of each calendar year thereafter, the company representative responsible for compliance at each affected facility shall submit a report to the Department demonstrating compliance with the emission standards contained in 310 CMR 7.29(5)(a) and in an approved emission control plan. The report shall demonstrate compliance with any applicable monthly emission rate for each month of the previous calendar year, and with any applicable 12-month emission rate for each of the 12 previous consecutive 12-month periods. For the mercury standards at 310 CMR 7.29(5)(a)3.c., the compliance reports due January 30, 2007 and 2008 shall include quarterly emissions for each quarter beginning October 1, 2006. For the mercury standards at 310 CMR 7.29(5)(a)3.c., e., and f., the compliance report due January 30, 2009 and each report thereafter shall demonstrate compliance with any applicable annual standard for the previous calendar year and with any applicable 12-month standard for each of the 12 previous consecutive 12-month periods.

(b) The compliance report shall contain the following:

1. Actual emissions for each pollutant, expressed in tons for SO_2, CO_2, and NO_x, for each of the preceding 12 months and expressed in thousandths of ounces for mercury, for each of the preceding four calendar quarters beginning October 1, 2006 and preceding 12 months beginning January 1, 2008. Actual emissions shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance. Actual emissions provided under 310 CMR 7.29 shall be reported in accordance with:

a. 40 CFR Part 75 for SO_2, CO_2, and NO_x, and, no later than January 1, 2009, for mercury,

7.29: continued

b. for the standards at 310 CMR 7.29(5)(a)3.c.i. based on stack tests, by calculating the thousands of ounces of mercury from:

i. the average measured pounds of mercury emitted per million Btu consumed for the calendar year multiplied by

ii. the heat input determined under 40 CFR Part 75 for the calendar year. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid-fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

c. for the standards at 310 CMR 7.29(5)(a)3.c.ii., by assuming all of the mercury in the utilized ash is emitted, unless a lesser amount of mercury has been approved under 310 CMR 7.29(5)(a)3.c.ii.(iv).

d. Any particulate-bound mercury accounted for under the provisions of 310 CMR 7.29(5)(a)3.g.ii. shall be calculated from:

i. the most recent average measured pounds of particulate mercury emitted per million Btu consumed multiplied by

ii. the heat input determined under 40 CFR Part 75 for each calendar month. Affected facilities may choose to subtract the heat input attributable to combustion of fuels other than solid-fossil fuel and ash if such heat input is determined using the procedures of 40 CFR Part 75 Appendix D.

2. Actual net electrical output for each of the preceding 12 months, expressed in megawatt-hours. Actual net electrical output shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

3. The resulting output-based emission rates for each of the preceding 12 months, and each of the 12 consecutive rolling month time periods, expressed in pounds per megawatt-hour for SO_2, CO_2, and NO_x and pounds per gigawatt-hour for mercury. Output-based emission rates shall be provided for individual units and as a facility total for all units included in the calculation demonstrating compliance.

4. A compliance certification report, which shall contain the following elements:

a. A statement certifying that the monitoring data reflects operations at the affected facility.

b. A statement that all SO_2, CO_2, and NO_x emissions, and, beginning January 1, 2009, all mercury emissions, from the affected facility were accounted for, either through the applicable monitoring or through application of the appropriate missing data procedures and reported in the quarterly reports. If provisionally certified data were reported, the company representative responsible for compliance with 310 CMR 7.29 shall indicate whether the status of all provisionally certified data was resolved and all necessary quarterly reports were submitted.

c. A statement certifying that the MWhs of net electrical output used in compliance calculations reflect the total actual electrical output of the facility used by the New England Independent System Operator to determine settlement resources of energy market participants.

d. A statement notifying the Department of any changes in the method of operation at the affected facility or the method of monitoring the units at the affected facility during the previous year. If a change is reported, then specify the nature of the change, the reason for the change, when the change occurred, and how the facility's compliance status was determined subsequent to the change, including what method was used to determine emissions when a change mandated the need for monitor re-certification.

e. A certification statement stating (verbatim): "I am authorized to make this submission on behalf of the owners, lessees, operators and controllers of the affected facilities for which the submission is made. I certify that I have personally examined the foregoing and am familiar with the information contained in this document and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including possible fines or imprisonment."

(c) The Department may verify compliance by whatever means necessary, including but not limited to:

1. Inspection of a unit's operating records;

7.29: continued

2. Requiring the person who owns, leases, operates or controls an affected facility to submit information on actual electrical output of company generating units provided to that person by the New England Independent System Operator;

3. Testing emission monitoring devices; and,

4. Requiring the person who owns, leases, operates or controls an affected facility to conduct emissions testing under the supervision of the Department.

(d) Any person who owns, leases, operates or controls an affected facility shall keep all measurements, data, reports and other information required by 310 CMR 7.29 for five years, or any other period consistent with the affected facility's operating permit.

(e) For units that apply carbon or other sorbent injection for mercury control, the following records shall be kept until such time as a mercury monitoring system is installed at that unit:

1. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated during the initial mercury optimization test and all subsequent mercury emissions tests, with supporting calculations.

2. The average carbon or other sorbent mass feed rate (in lbs/hr) estimated for each hour of operation, with supporting calculations.

3. The total carbon or other sorbent usage for each calendar quarter, with supporting calculations.

4. The carbon or other sorbent injection system operating parameter data for the parameter(s) that are the primary indicator(s) of carbon or other sorbent feed rate.

5. Identification of the calendar dates when the average carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)2. was less than the hourly carbon feed rate estimated during and recorded under 310 CMR 7.29(7)(e)1., with reasons for such feed rates and a description of corrective actions taken.

6. Identification of the calendar dates when the carbon injection or other sorbent system operating parameter(s) that are the primary indicator(s) of carbon or other sorbent mass feed rate recorded under 310 CMR 7.29(7)(e)4. are below the level(s) estimated during the optimization tests for mercury with reasons for such occurrences and a description of corrective actions taken.

(f) For units that apply technology other than carbon or other sorbent for mercury control, the operating parameter records to be kept until such time as a mercury monitoring system is installed at that unit shall be proposed to the Department in the emission control plan application required under 310 CMR 7.29(6)(a)3.

(g) For mercury monitoring, recordkeeping and reporting, any person who owns, leases, operates or controls an EGU (as defined in 40 CFR 60.24(h)(8)) at an affected facility shall comply with all mercury monitoring, recordkeeping and reporting requirements in 40 CFR Part 75 and "Monitoring and Reporting" in 40 CFR Part 60 Subpart HHHH and any additional mercury monitoring, recordkeeping and reporting requirements the Department deems necessary and specifies in the facility's ECP or mercury monitoring plan approval. In implementing the provisions of 40 CFR Part 75 and 40 CFR Part 60 Subpart HHHH concerning monitoring of mercury mass emissions, the terms used therein shall have the meanings defined in 40 CFR Part 72 and Part 60 respectively; provided, however, that the term Permitting Authority shall mean the Department, the term Hg Budget Trading Program shall mean 310 CMR 7.02 and 7.29, and the term Hg Budget Unit shall mean an EGU (as defined in 40 CFR 60.24(h)(8)).

(h) For selection of a Hg Designative Representative, any person who owns, leases, operates or controls an EGU (as defined in 40 CFR 60.24(h)(8)) at an affected facility must select a Hg Designated Representative for each affected facility, and may select an Alternate Hg Designated Representative, pursuant to the requirements of "Hg Designated Representative For Hg Budget Sources" in 40 CFR Part 60 Subpart HHHH. In implementing the provisions of 40 CFR Part 60 Subpart HHHH, the terms used in that subpart shall have the meanings defined in 40 CFR Part 60; provided, however, that the term Permitting Authority shall mean the Department, the term Hg Budget Trading Program shall mean 310 CMR 7.02 and 7.29, and the term Hg Budget Unit shall mean an EGU (as defined in 40 CFR 60.24(h)(8)).

(i) Any person subject to 310 CMR 7.29(5)(a)3. shall submit the results of all mercury emissions, monitor, and optimization test reports, along with supporting calculations, to the Department within 45 days after completion of such testing.

SENATE . . . . . No. 534

By Mr. Pacheco, a petition (accompanied by bill, Senate, No. 534) of Marc R. Pacheco for legislation global warming solutions act of 2007 executive summary. Environment, Natural Resources and Agriculture.

The Commonwealth of Massachusetts

In the Year Two Thousand and Seven.

AN ACT GLOBAL WARMING SOLUTIONS ACT OF 2007 EXECUTIVE SUMMARY.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Chapter 21L, Section 1. Short Title Chapter 21L is added to the Massachusetts General Laws, and may be cited, as the Massachusetts Global Warming Solutions Act of 2007. Chapter 21L, Section 2. Findings and Declarations Section 2. The Legislature finds and declares all of the following:

(a) Global warming poses a serious threat to the economic well-being, public health, natural resources, and the environment of Massachusetts. The potential adverse impacts of global warming include the exacerbation of air quality problems, a loss of many of the state's indigenous species of plants and animals, a rise in sea levels resulting in the displacement of thousands of coastal businesses and residences, damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

(b) Global warming will have detrimental effects on some of Massachusetts's largest industries, including agriculture, syrup, tourism, skiing, recreational and commercial fishing, and forestry. It will also increase the strain on electricity supplies necessary to meet the demand for summer air-conditioning in the hottest parts of the state.

(c) Massachusetts has long been a national and international leader on energy conservation and environmental stewardship efforts, including the areas of air quality protections, energy

efficiency requirements, renewable energy standards, natural resource conservation, and greenhouse gas emission standards for passenger vehicles. The program established by this chapter will continue this tradition of environmental leadership by bringing Massachusetts back to the forefront of national and international efforts to reduce emissions of greenhouse gases by emulating statutory action in California, the only other state to have moved forward with this type of legislation.

(d) National and international actions are necessary to fully address the issue of global warming. However, action taken by Massachusetts to reduce emissions of greenhouse gases will have far-reaching effects by encouraging other states, the federal government, and other countries to act.

(e) By exercising a global leadership role, Massachusetts will also position its economy, technology centers, financial institutions, and businesses to benefit from national and international efforts to reduce emissions of greenhouse gases. More importantly, investing in the development of innovative and pioneering technologies will assist Massachusetts in achieving the 2020 statewide limit on emissions of greenhouse gases established by this chapter and will provide an opportunity for the state to take a global economic and technological leadership role in reducing emissions of greenhouse gases.

(f) It is the intent of the Legislature that the Department of Environmental Protection (DEP) coordinate with state agencies, as well as consult with the environmental justice community, industry sectors, business groups, academic institutions, environmental organizations, and other stakeholders in implementing this chapter.

(g) It is the intent of the Legislature that the DEP consult with the Public Utilities Commission in the development of emissions reduction measures, including limits on emissions of greenhouse gases applied to electricity and natural gas providers regulated by the Public

Utilities Commission in order to ensure that electricity and natural gas providers are not required to meet duplicative or inconsistent regulatory requirements.

(h) It is the intent of the Legislature that the DEP design emissions reduction measures to meet the statewide emissions limits for greenhouse gases established pursuant to this chapter in a manner that minimizes costs and maximizes benefits for Massachusetts' economy, improves and modernizes Massachusetts' energy infrastructure and maintains electric system reliability, and maximizes additional environmental and economic co-benefits for Massachusetts.

Chapter 21L, Section 3 Definition of Terms

Section 3. For the purposes of this chapter, the following terms have the following meanings:

(a) "Allowance" means an authorization to emit, during a specified year, up to one ton of carbon dioxide equivalent.

(b) "Alternative compliance mechanism" means an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emission reduction, and that is approved by the DEP. "Alternative compliance mechanism" includes, but is not limited to, a flexible compliance schedule, alternative control technology, a process change, or a product substitution.

(c) "Carbon dioxide equivalent" means the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

(d) "Cost-effective" or "cost-effectiveness" means the cost per unit of reduced emissions of greenhouse gases adjusted for its global warming potential.

(e) "Direct emission reduction" means a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.

(f) "Emissions reduction measure" means programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases.

(g) "Greenhouse gas" or "greenhouse gases" includes all of the following gases: carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, and sulfur hexafluoride.

(h) "Greenhouse gas emissions limit" means an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the DEP, expressed in tons of carbon dioxide equivalents.

(i) "Greenhouse gas emission source" or "source" means any source, or category of sources, of greenhouse gas emissions whose emissions are at a level of significance, as determined by the DEP, that its participation in the program established under this chapter will enable the DEP to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

(j) "Leakage" means a reduction in emissions of greenhouse gases within the state that is offset by an increase in emissions of greenhouse gases outside the state.

(k) "Market-based compliance mechanism" means either of the following:

(1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases.

(2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by the Massachusetts DEP or the Regional Greenhouse Gas Initiative, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by the DEP pursuant to this chapter.

(l) "Statewide greenhouse gas emissions" means the total annual emissions of greenhouse gases in the state, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in Massachusetts, accounting for transmission and distribution line losses, whether the electricity is generated in state or imported. Statewide emissions shall be expressed in tons of carbon dioxide equivalents.

(m) "Statewide greenhouse gas emissions limit" or "statewide emissions limit" means the maximum allowable level of statewide greenhouse gas emissions in 2020, as determined by the DEP pursuant to Section 5 of this chapter.

Chapter 21L, Section 4. Mandatory Greenhouse Gas Reporting Section 4. The DEP is the state agency charged with monitoring and regulating emissions of greenhouse gasses with the specific goal of reducing those emissions.

(a) On or before January 1, 2009, the DEP shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program.

(b) The regulations shall do all of the following:

(1) Require the monitoring and annual reporting of greenhouse gas emissions from greenhouse gas emission sources beginning with the sources or categories of sources that contribute the most to statewide emissions.

(2) Account for greenhouse gas emissions from all electricity consumed in the state, including transmission and distribution line losses from electricity generated within the state or imported from outside the state. This requirement applies to all retail sellers of electricity, including electric utilities, municipal electric departments, and municipal light boards as defined in Chapter 164A, Section 1 of the Massachusetts General Laws.

(3) Ensure rigorous and consistent accounting of emissions, and provide reporting tools and formats to ensure collection of necessary data.

(4) Ensure that greenhouse gas emission sources maintain comprehensive records of all reported greenhouse gas emissions.

(c) The DEP shall do both of the following:

(1) Periodically review and update its emission reporting requirements, as necessary.

(2) Review existing and proposed international, federal, and state greenhouse gas emission reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this part and other programs, and to streamline reporting requirements on greenhouse gas emission sources.

Chapter 21L, Section 5. Statewide Greenhouse Gas Emissions Limit

Section 5A. By January 1, 2009, the DEP shall, after one or more public workshops, with public notice, and an opportunity for all interested parties to comment, determine what the statewide greenhouse gas emissions level was in 2002, and approve in a public hearing, a statewide greenhouse gas emissions limit that is equivalent to 90 percent of that level, to be achieved by 2020. In order to ensure the most accurate determination feasible, the DEP shall evaluate the best available scientific, technological, and economic information on greenhouse gas emissions to determine the 1990 level of greenhouse gas emissions.

Section 5B. (a) The statewide greenhouse gas emissions limit shall remain in effect unless otherwise amended or repealed.

(b) It is the intent of the Legislature that the statewide greenhouse gas emissions limit continue in existence and be used to maintain and continue reductions in emissions of greenhouse gases

beyond 2020 with a goal of achieving reductions in emissions such that total statewide emissions of greenhouse gasses are at levels approximately 15% of those in 2002.

(c) The DEP shall make recommendations to the Governor and the Legislature on how to continue reductions of greenhouse gas emissions beyond 2020 so as to achieve levels of emissions such that total statewide emissions of greenhouse gasses are at levels approximately 15% of those in 2002 as determined in Section 5A

Chapter 21L, Section 6. Greenhouse Gas Emissions Reductions Section 6A. The DEP shall adopt rules and regulations in an open public process to achieve the maximum technologically feasible and cost-effective greenhouse gas emission reductions from sources or categories of sources, subject to the criteria and schedules set forth in this part.

(a) On or before July 31, 2008, the DEP shall publish and make available to the public a list of discrete early action greenhouse gas emission reduction measures that can be implemented prior to the measures and limits adopted pursuant to Section 5.

(b) On or before January 1, 2009, the DEP shall adopt regulations to implement the measures identified on the list published pursuant to subsection (a).

(c) The regulations adopted by the DEP pursuant to this section shall achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions from those sources or categories of sources, in furtherance of achieving the statewide greenhouse gas emissions limit.

(d) The regulations adopted pursuant to this section shall be enforceable no later than January 1, 2010.

Section 6B. (a) On or before January 1, 2009, the DEP shall prepare and approve a scoping plan, as that term is understood bythe DEP, for achieving the maximum technologically feasible

and cost-effective reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases by 2020 under this chapter. The DEP shall consult with all state agencies and regional authorities and agreements with jurisdiction over sources of greenhouse gases on all elements of its plan that pertain to energy related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, and statewide fuel supplies to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the DEP are complementary, non-duplicative, and can be implemented in an efficient and cost-effective manner.

(b) The plan shall identify and make recommendations on direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives for sources and categories of sources that the DEP finds are necessary or desirable to facilitate the achievement of the maximum feasible and cost-effective reductions of greenhouse gas emissions by 2020.

(c) In making the determinations required by subsection (b), the DEP shall consider all relevant information pertaining to greenhouse gas emissions reduction programs in other states, localities, and nations, including California, Canada, and the European Union.

(d) The DEP shall evaluate the total potential costs and total potential economic and non-economic benefits of the plan for reducing greenhouse gases to Massachusetts' economy, environment, and public health, using the best available economic models, emission estimation techniques, and other scientific methods.

(e) In developing its plan, the DEP shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions, and shall recommend a de-

minimis threshold of greenhouse gas emissions below which emission reduction requirements will not apply.

(f) In developing its plan, the DEP shall identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions..

(g) The DEP shall conduct a series of public workshops to give interested parties an opportunity to comment on the plan. The DEP shall conduct a portion of these workshops in regions of the state that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The DEP shall update its plan for achieving the maximum technologically feasible and cost-effective reductions of greenhouse gas emissions at least once every five years.

Section 6C. (a) On or before January 1, 2011, the DEP shall adopt greenhouse gas emission limits and emission reduction measures by regulation to achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions in furtherance of achieving the statewide greenhouse gas emissions limit, to become operative beginning on January 1, 2012.

(b) In adopting regulations pursuant to this section and section 7 to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the DEP shall do all of the following:

(1) Design the regulations, including distribution of emissions allowances where appropriate, in a manner that is equitable, seeks to minimize costs and maximize the total benefits to Massachusetts, and encourages early action to reduce greenhouse gas emissions.

(2) Ensure that activities undertaken to comply with the regulations do not disproportionately impact low-income communities.

(3) Ensure that entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions.

(4) Ensure that activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and to reduce toxic air contaminant emissions.

(5) Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health.

(6) Minimize the administrative burden of implementing and complying with these regulations.

(7) Minimize leakage.

(8) Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases.

(c) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the DEP may adopt a regulation that establishes a system of market-based declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that the DEP determines will achieve the maximum technologically feasible and cost-effective reductions in greenhouse gas emissions, in the aggregate, from those sources or categories of sources.

(d) Any market-based mechanism will be designed to work alongside but in no way undermine any existing greenhouse gas emissions markets in which the state, suppliers of electricity, generators of electricity, or industries, within the state may be participating.

(e) Any regulation adopted by the DEP pursuant to this section or section 7 shall ensure all of the following:

(1) The greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable by the DEP.

(2) If applicable, the greenhouse gas emission reduction occurs over the same time period and is equivalent in amount to any direct emission reduction required pursuant to this section.

(f) The DEP shall rely upon the best available economic and scientific information and its assessment of existing and projected technological capabilities when adopting the regulations required by this section.

(g) The DEP shall consult with the Public Utilities Commission in the development of the regulations as they affect electricity and natural gas providers in order to minimize duplicative or inconsistent regulatory requirements.

(h) After January 1, 2011, the DEP may revise regulations adopted pursuant to this section and adopt additional regulations to further the provisions of this chapter.

Section 6D. Nothing in this chapter restricts the DEP from adopting greenhouse gas emission limits or emission reduction measures prior to January 1, 2011, imposing those limits or measures prior to January 1, 2012, or providing early reduction credit where appropriate, nor shall this chapter be seen as preventing any more stringent limits on emissions.

Section 6E. The DEP shall consult with other states, and the federal government, and other nations to identify the most effective strategies and methods to reduce greenhouse gases, manage greenhouse gas control programs, and to facilitate the development of integrated regional, national, and international greenhouse gas reduction programs.

Section 6F. The DEP shall ensure that the greenhouse gas emission reduction rules, regulations, programs, mechanisms, and incentives under its jurisdiction, where applicable and to the extent feasible, direct public and private investment toward the most disadvantaged communities in Massachusetts and provide an opportunity for small businesses, schools, affordable housing associations, and other community institutions to participate in and benefit from statewide efforts to reduce greenhouse gas emissions.

Chapter 21L, Section 7. Market Based Compliance Mechanisms

Section 7A. (a) The DEP may include in the regulations adopted pursuant to Section 6 the use of market-based compliance mechanisms to comply with the regulations.

(b) Prior to the inclusion of any market-based compliance mechanism in the regulations, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the DEP shall do all of the following:

(1) Consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution.

(2) Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide, and mercury.

(3) Maximize additional environmental and economic benefits for Massachusetts, as appropriate.

(c) The DEP shall adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emission limits and mandatory emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

Section 7B. Nothing in this part or Section 6 confers any authority on the DEP to make less stringent any programs administered by other state agencies for the reduction of greenhouse gas emissions

Chapter 21L, Section 8: Enforcement

Section 8. (a) The DEP shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by the DEP pursuant to this chapter..

(b) In the instance of any violation, by either an incorporated entity or an individual, of any rule, regulation, order, emission limitation, emissions reduction measure, or other measure adopted by the DEP pursuant to this chapter, the violating entity shall be subject to those penalties set forth in Chapter 21I sections A and B of the Massachusetts General Laws.

Chapter 21L, Section 9: Miscellaneous Provisions

Section 9A. If the regulations adopted pursuant to vehicular emissions of greenhouse gas do not remain in effect, the DEP shall implement alternative regulations to control mobile sources of greenhouse gas emissions to achieve equivalent or greater reductions.

Section 9B. (a) The DEP, by January 1, 2008, shall convene an environmental justice advisory committee, of at least three members, to advise it in developing the scoping plan pursuant to

Section 6B and any other pertinent matter in implementing this chapter. The advisory committee shall be comprised of representatives from communities in the state with the most significant exposure to air pollution, including, but not limited to, communities with minority populations or low-income populations, or both.

(b) The DEP shall appoint the advisory committee members from nominations received from public interest groups, environmental justice organizations and community groups.

(c) The DEP shall provide reasonable per diem for attendance at advisory committee meetings by advisory committee members from nonprofit organizations.

(d) The DEP shall appoint an Economic and Technology Advancement Advisory Committee to advise the DEP on activities that will facilitate investment in and implementation of technological research and development opportunities, including, but not limited to, identifying new technologies, research, demonstration projects, funding opportunities, developing state, national, and international partnerships and technology transfer opportunities, and identifying and assessing research and advanced technology investment and incentive opportunities that will assist in the reduction of greenhouse gas emissions. The committee may also advise the DEP on state, regional, national, and international economic and technological developments related to greenhouse gas emission reductions.

Section 9C. (a) All state agencies shall consider and implement strategies to reduce their greenhouse gas emissions.

(b) Nothing in this chapter shall relieve any person, entity, or public agency of compliance with other applicable federal, state, or local laws or regulations, including state air and water quality requirements, and other requirements for protecting public health or the environment.

Section 9D. (a) Nothing in this chapter affects the authority of the Public Utilities Commission.

(b) Nothing in this chapter affects the obligation of an electrical utility to provide customers with safe and reliable electric service.

Section 9E. Nothing in this chapter shall preclude, prohibit, or restrict the construction of any new facility or the expansion of an existing facility subject to regulation under this chapter, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this chapter.

Section 9F. The provisions of this chapter are severable. If any provision of this chapter or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

Section 9G. (a)The DEP may adopt by regulation, after a public workshop, a schedule of fees to be paid by the sources of greenhouse gas emissions regulated pursuant to this chapter. The revenues collected pursuant to this section, shall be deposited into the Renewable Energy Trust and are available upon appropriation, by the Legislature, for purposes of carrying out this chapter..

(b) those funds deposited are available for appropriation by the legislature, but only in amounts not to exceed those deposited into the fund under subsection(a) of section 9G.

Section 9H. (a) Nothing in this chapter shall limit the existing authority of a state entity to adopt and implement greenhouse gas emissions reduction measures.

(b) Nothing in this chapter shall relieve any state entity of its legal obligations to comply with existing law or regulation.

Section 9I. (a) In the event of extraordinary circumstances or catastrophic events, the Governor may adjust the applicable deadlines for individual regulations, or for the state in the aggregate, to the earliest feasible date after that deadline.

(b) The adjustment period may not exceed one year unless the Governor makes an additional adjustment pursuant to subsection

(a) of section 9I.

(c) Nothing in this section shall be seen to limit the powers and duties of the Governor as executive during times of emergency.

(d) The Governor shall, within 10 days of invoking subsection (a), provide written notification to the Legislature of the action undertaken.

(e) The governor shall, within 90 days of invoking subsection (a), provide a detailed, written, and publicly available explanation of his reasons for invoking subsection (a) to the legislature.

SENATE . . . . . No. 535

By Mr. Pacheco, a petition (accompanied by bill, Senate, No. 535) of Marc R. Pacheco for legislation reducing the impact of the commonwealth on climate change. Environment, Natural Resources and Agriculture.

The Commonwealth of Massachusetts

In the Year Two Thousand and Seven.

AN ACT REDUCING THE IMPACT OF THE COMMONWEALTH ON CLIMATE CHANGE.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. The General Laws are hereby amended by inserting after chapter 30B the following chapter:-

CHAPTER 30C.

CLIMATE CHANGE POLICY ACT

Section 1. Short Title.

This Chapter shall be known and may be cited as the Climate Change Policy Act.

Section 2. Purpose.

The major purpose of this chapter and regulations and actions initiated under this chapter is to prevent or minimize damage to the environment, pursuant to section 7A of chapter 214.

Section 3. Findings.

It is hereby found and declared that:

(a) Atmospheric concentrations of carbon dioxide, methane, nitrous oxide, and other greenhouse gases are substantially higher than at any point in recent millennia and these concentrations are linked to human activity;

(b) Increased atmospheric concentrations of greenhouse gases has serious impacts on the global climate, causing, among other things, instability that will increase the frequency and severity of weather events;

(c) The risks posed by global climate change are real and will have serious consequences for Massachusetts;

(d) The government of Massachusetts has the opportunity to set an example for other political jurisdictions and for private actors by reducing the release of anthropogenic greenhouse gases from the Commonwealth and by participating in multi-state and regional efforts to expand these initiatives to a broader geographic territory and

(e) The implementation of programs that decrease the Commonwealth's contribution to climate change will also advance other important state objectives such as sustainable economic development, energy independence, and cleaner air.

Section 3. Definitions.

As used in this chapter, the following terms shall have the following meanings, unless the context otherwise requires:

"Agency", an agency, department, board, commission or authority of the Commonwealth, and any authority of any political subdivision which is specifically created as an authority under special or general law.

"De Minimis Emissions", GHG emissions that are below a threshold that the Department of Environmental Protection determines by rule may reasonably be considered too small to warrant reporting.

"Greenhouse Gas", a chemical or physical substance that, when emitted into the air, the Department of Environmental Protection determines by rule may reasonably be anticipated to

cause or contribute to climate change. Greenhouse Gas shall include, but is not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"GHG Emissions", the release of greenhouse gases into the atmosphere from human activities.

"Facility", a structure that, by any means, releases more than de minimis emissions of greenhouse gases. Facility refers to each separated or separable structure, even if owned or operated by the same entity. Facility shall include mobile power generators, but shall not include idling vehicles. Facility shall include structures that are owned or operated by the Commonwealth and meet the above requirements.

Section 4. Regulations to Enforce Greenhouse Gas Emission Reduction Targets

(a) The regulations promulgated under this section shall ensure that the following targets for reduction of GHG emissions are attained:

(1) Reduction by 2015 – Reduce GHG emissions to 10% below 1990 levels by January 1, 2015.

(2) Reduction by 2020 – Reduce GHG emissions to 20% below 1990 levels by January 1, 2020.

(3) Reduction by 2050 – Reduce GHG emissions to 85% below 1990 levels by January 1, 2050.

(b) By May 1, 2008, the Executive Office of Environmental Affairs, the Department of Environmental Protection, the Registry of Motor Vehicles, the Department of Telecommunications and Energy, the Department of Agriculture Resources, and the Board of Building Regulations and Standards, and such other agencies that the Department of Environmental Protection determines regulates or otherwise effects major sources of

greenhouse gas emissions, shall have promulgated or otherwise put into place regulations that the Department of Environmental Protection has determined are reasonably calculated to attain the targets in this section. These regulations shall include provisions requiring:

(1) Consideration of net impact on GHG emissions in connection with the consideration and issuance of permits, licenses and other administrative approvals and decisions;

(2) In connection with the issuance of permits, licenses and other administrative approvals and decisions, there shall be a presumption in favor of alternatives having a lesser net impact on GHG emissions so long as such alternatives do not entail a risk of substantially increased damage to the environment as compared with alternatives having a greater net impact on GHG emissions;

(3) In connection with the consideration and issuance of permits, licenses and other administrative approvals and decisions, the reasonably foreseeable impacts of climate change, including, for example, anticipated sea level rise, shall be taken into consideration;

(4) That all capital planning and infrastructure spending prioritization plans and decisions shall clearly state, using a methodology devised by the Department of Environmental Protection, the net impact of said plans and decisions on GHG emissions.

(c) The regulations promulgated under this section shall include, but not be limited to reducing:

(1) GHG emissions from both mobile and stationary sources in the Commonwealth,

(2) energy use in the Commonwealth resulting in the reduction of GHG emissions from sources both inside and outside the Commonwealth and

(3) dependency on energy sources that result in the release of GHG emissions.

(d) Beginning no later than January 1, 2008 agencies shall submit to the Department of Environmental Protection an annual plan that includes identification and prioritization of strategies to implement this section. Within 60 days the Department of Environmental Protection shall determine if such plan is adequate and if the regulations of the subject agency are still adequate and are being adequately implemented in a manner consistent with attaining the goals set forth in section 4(a) of this Chapter.

SENATE . . . . . No. 2423

The Commonwealth of Massachusetts

SENATE, November 19, 2007.

The committee on Environment, Natural Resources and Agriculture to whom was referred the petition (accompanied by petition, Senate, No. 534), relative to global warming solutions act of 2007 executive summary, reported, recommending that the same ought to pass, with an amendment substituting a new draft entitled An Act relative to the Massachusetts Global Warming Solutions Act (Senate, No. 2423).

For the committee,

PAMELA P. RESOR.

The Commonwealth of Massachusetts

In the Year Two Thousand and Seven.

AN ACT RELATIVE TO THE MASSACHUSETTS GLOBAL WARMING SOLUTIONS ACT.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Chapter 6A of the General Laws, as so appearing, is hereby amended by inserting after section 16G the following section:--

Section 16G1/2. Secretary, duties and responsibilities, programs for global warming. The secretary of the executive office of housing and economic development, in consultation with the executive office of energy and environmental affairs, shall create and administer programs and incentives to foster manufacturing, development and research in the renewable energy and energy efficiency sectors. At a minimum, the secretary of the executive office of housing and economic development shall develop the following programs, subject to appropriation:-

(a) The seed grant partnerships for research and venture investment programs, which shall foster public/private partnerships between the state and the venture

community. Such programs shall provide grants to qualified university researchers and validation stage ventures, expand the field of energy-focused entrepreneurs and spark the cooperative development of commercial clean energy companies through increased venture investment. The program shall include but not be limited to a focus of providing grants to university energy research projects and early-stage energy ventures seeking validation of their science and intellectual property; and the establishment of an Energy Entrepreneur program.

(b) Energy efficiency and renewable energy workforce development and training programs, to increase the number of trained skilled workers in the economic sectors of emerging clean energy, renewable energy, energy efficiency, and demand resources. The program shall develop a plan to address growing clean energy labor demands and talent gaps. Twenty percent of funding shall be allocated towards training services for low-income and disadvantaged adults. This program shall be designed to promote growth of the clean energy economy by helping build a pipeline of well-trained skilled workers and addressing emerging skills gaps in both the clean energy cluster and clean energy adoption. The initiative shall include but not be limited to providing grants to state universities, community colleges, vocational/technical schools and organized labor for educational and certification programs targeted at both engineering/technical needs in the cluster and serving end-user needs.

(c) Energy efficiency and renewable energy workforce development and training programs to increase the number of trained skilled workers in the emerging clean

energy and renewable energy economic sectors. The administrator of the program shall develop a plan to address growing clean energy labor demands and talent gaps. Twenty percent of funding shall be allocated towards training services for low-income and disadvantaged adults.

SECTION 2.

Section 19 of Chapter 6A of the General Laws, as so appearing, is hereby amended by striking subsection (f) and inserting in place thereof the following two subsections:--

"(f) The secretary shall collaborate with other state agencies to reduce greenhouse gas emissions in the Commonwealth, with the goal of reaching a 20% reduction in greenhouse gas emission levels by 2020, and 80% by 2050. Those reductions shall be based on 1990 levels.

(g) Nothing in this chapter shall be construed as conferring any powers or imposing any duties upon the secretary with respect to the foregoing agencies and authorities except as expressly provided by law."

SECTION 3.

Section 1 of Chapter 16, as appearing in the 2006 Official Edition, is hereby amended by striking clause (d) in its entirety and inserting in place thereof the following:--

"(d) The commissioner shall collaborate with other state agencies to reduce greenhouse gas emissions. The department shall be guided by Chapter 21N and other relevant state and federal laws, and in particular, by the stated goal of achieving 20% reduction in greenhouse gas emissions by 2020, and 80% by 2050. These reductions shall be based upon 1990 levels, as determined according to said Chapter 21N.

(e) The commissioner may promulgate rules and regulations to effectuate the purposes of this chapter."

SECTION 4.

Section 2 of Chapter 21A, as appearing in the 2006 Official Edition, is hereby amended by inserting after clause (29) the following clause:--

"(30) consistent with chapter 21N, oversee state agency efforts to address and diminish the impacts of global warming by coordinating state agency actions to reduce greenhouse gas emission levels by 20% from 1990 levels by 2020, and 80% by 2050."

SECTION 5. Section 8 of said Chapter 21A is hereby further amended by inserting after the second paragraph the following paragraph:--

"The department of environmental protection shall assist in the implementation of chapter 21N."

SECTION 6. Section 16 of said chapter 21A is hereby further amended by inserting at the end thereof the following new paragraph: --

"Any person who fails to comply with or otherwise violates chapter 21N or any regulation adopted thereunder shall be liable for a civil administrative penalty not to exceed $25,000 for each day the violation continues."

SECTION 7. The Massachusetts General Laws, as appearing in the 2006 Official Edition, are hereby amended by inserting after Chapter 21M the following chapter:--

Chapter 21N. Massachusetts Global Warming Solutions Act.

Section 1. Definitions.

For the purposes of this chapter, the following terms have the following meanings:

"Allowance" means an authorization to emit, during a specified year, up to one ton of carbon dioxide equivalent.

"Alternative compliance mechanism" means an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emission reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable, and enforceable.

"Carbon dioxide equivalent" means the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

"Direct emissions" means emissions from sources that are owned or operated, in whole or in part, by an entity or facility, including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company owned or leased motor vehicles.

"Department", the department of environmental protection.

"Direct emission reduction" means a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.

"Emissions reduction measure" means programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases.

"Entity" means a person as defined in section 16 of chapter 21A that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity

or a commercial or industrial site, which source may include, but not be limited to, a transportation fleet.

"EOEEA", means the executive office of energy and environmental affairs.

"Facility" means a building, structure or installation located on any one or more contiguous or adjacent properties of an entity.

"Greenhouse gas" means any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change, including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"Greenhouse gas emissions limit" means an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the department, expressed in tons of carbon dioxide equivalents.

"Greenhouse gas emission source" or "source" means any source, or category of sources, of greenhouse gas emissions whose emissions are at a level of significance, as determined by the department, that its participation in the program established under this chapter will enable the department to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

"Indirect emissions" means emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

"Leakage" means the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

"Market-based compliance mechanism" means either of the following:

(1) A system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases.

(2) Greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by EOEEA or the Regional Greenhouse Gas Initiative, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by EOEEA pursuant to this chapter.

"Secretary", the secretary of the executive office of energy and environmental affairs.

"Statewide greenhouse gas emissions" means the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in Massachusetts, accounting for transmission and distribution line losses, whether the electricity is generated in state or imported. Statewide emissions shall be expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit" or "statewide emissions limit" means the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the executive office of environmental affairs pursuant to this chapter.

Section 2. Greenhouse Gas Registry and Inventory

The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions.

On or before January 1, 2009, the department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. The regulations shall:

(1) Establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources. In establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium.

(2) Require that not later than April 15, 2009, and annually thereafter, the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases shall report annually to the regional registry direct stack emissions of greenhouse gases from such sources.

(3) Require that not later than April 15, 2009, the owner or operator of any facility that has stationary emissions sources that emit greenhouse gases in excess of five thousand tons of greenhouse gases per year in carbon dioxide equivalents shall report annually to the regional registry direct emissions of greenhouse gases from such sources. The department shall develop a simplified estimation form to assist facilities in determining who must report emissions. The secretary shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry.

(4) Not later than July 1, 2009, provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to subsections (2) and (3) of this section but which do so on a voluntary basis. The greenhouse gas

emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate.

(5) Not later than July 1, 2009, account for greenhouse gas emissions from all electricity consumed in the commonwealth, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth. This requirement applies to all retail sellers of electricity, including electric utilities, municipal electric departments, and municipal light boards as defined in section 1 of Chapter 164A.

(6) Ensure rigorous and consistent accounting of emissions, and provide reporting tools and formats to ensure collection of necessary data.

(7) Ensure that greenhouse gas emission sources maintain comprehensive records of all reported greenhouse gas emissions.

In furtherance of the provisions of this section, the department shall:

(1) Consult with the secretary on periodic review and updates of emission reporting requirements, as necessary.

(2) Review existing and proposed international, federal, and state greenhouse gas emission reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this part and other programs, and to streamline reporting requirements on greenhouse gas emission sources.

Not later than December 31, 2009, and triennially thereafter, the department shall publish a state greenhouse gas emissions inventory that includes comprehensive estimates of the quantity of greenhouse gas emissions in the state for the last three years in which data is available.

Section 3. Statewide Greenhouse Gas Emissions Limit

(a) On or before January 1, 2009, the department shall, after one or more public hearings, with public notice, and an opportunity for all interested parties to comment, determine what the statewide greenhouse gas emissions level was in 1990.

(b) The executive office, in consultation with the department and with the department of clean energy, shall adopt a statewide greenhouse gas emissions limit that is equivalent to 20 percent below the1990 level, to be achieved by 2020, and 80 percent below the 1990 level, to be achieved by 2050. The executive office shall also adopt incremental reduction targets for the years 2005 through 2019, inclusive, and 2021 through 2050, inclusive, that shall maximize the ability of the state to meet the statewide emissions limits.

(c) Emissions levels and limits associated with the electric sector shall be established by the executive office and the department, in consultation with the department of clean energy, based on consumption and purchases of electricity from the regional electric grid, taking into account the Regional Greenhouse Gas Initiative and the renewable portfolio standard.

(d) In furtherance of achieving the statewide greenhouse gas emissions limit, by January 1, 2011, the department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that are in theory sufficient to meet the targets established in this section.

Section 4. Statewide Emissions Reduction Plan

On or before January 1, 2009, the executive office shall prepare and approve a plan for achieving reductions in greenhouse gas emissions from sources or categories of sources of greenhouse gases sufficient to achieve the statewide emissions limits set by 2020. The executive office shall consult with all state agencies and regional authorities and agreements with jurisdiction over sources of greenhouse gases on all elements of its plan that pertain to energy related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, and statewide fuel supplies, to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the executive office are complementary, non-duplicative, and can be implemented in an efficient and cost-effective manner.

(b) The plan shall identify and make recommendations on direct emission reduction measures, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives for sources and categories of sources that the executive office finds are necessary or desirable to facilitate the achievement of reductions of greenhouse gas emissions limits.

(c) In making the determinations required by subsection (b), the executive office shall consider all relevant information pertaining to greenhouse gas emissions reduction programs in other states, localities, and nations, including California, Canada, and the European Union.

(d) The executive office shall evaluate the total potential costs and total potential economic and non-economic benefits of the plan for reducing greenhouse gases to Massachusetts' economy, environment, and public health, using the best available economic models, emission estimation techniques, and other scientific methods.

(e) In developing its plan, the executive office shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions, and shall recommend a *de minimis* threshold of greenhouse gas emissions below which emission reduction requirements will not apply.

(f) In developing its plan, the executive office shall identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions.

(g) The executive office shall conduct a series of public hearings to give interested parties an opportunity to comment on the plan. The executive office shall conduct a portion of these workshops in regions of the state that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The executive office shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every five years.

Section 5. Global Warming Report

The EOEEA shall monitor the implementation of regulations relative to global warming, and shall, by January 1, 2010, publish a report and recommendations regarding such implementation. The report shall include a discussion of the following:--

(1) Whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to Massachusetts, and encourage early action to reduce greenhouse gas emissions;

(2) Whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities;

(3) Whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions;

(4) Whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions;

(5) Consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health;

(6) Whether state actions minimize the administrative burden of implementing and complying with these regulations;

(7) Whether state actions minimize leakage;

(8) Consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases;

(9) Whether greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable; and

(10) Recommendations for future policy action, legislative or otherwise.

This report, first published in 2010, shall be updated and re-issued every 5 years. The secretary shall file the report with the house clerk, the joint committee on telecommunications, utilities and energy and the joint committee on the environment, natural resources and agriculture.

Section 6. Required Emission Reduction Measures

In developing its plan for achieving the statewide greenhouse gas emissions limits, the Commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings, and transportation.

Section 7. Green Building Revolving Loan Fund.

The secretary of the executive office of energy and environmental affairs or its designee shall, subject to appropriation, establish a green building revolving loan fund to provide low interest financing for new construction or major renovation projects that exceed the energy efficiency requirements of the state building code by 30%.

Section 8. Market Based Compliance Mechanisms

The executive office, in consultation with the fiscal agencies of the Commonwealth, may consider the use of market-based compliance mechanisms to address global warming concerns.

(a) Prior to the inclusion of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the executive office shall do all of the following:

(1) Consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution.

(2) Design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide, and mercury.

(3) Maximize additional environmental and economic benefits for Massachusetts, as appropriate.

(b) The executive office may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emission limits and mandatory emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(c) EOEEA and the department may work with the participating Regional Greenhouse Gas Initiative states, and other interested states and Canadian Provinces to develop a plan to expand market-based compliance mechanisms such as the Regional Greenhouse Gas Initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(d) The executive office shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure, or market-based compliance mechanism adopted by the executive office or department pursuant to this chapter. In the instance of any violation, by either an incorporated entity or an individual, of any rule, regulation, order, emission limitation, emissions reduction measure, or other measure adopted by the executive office pursuant to this chapter, the department shall impose a civil administrative penalty consistent with section 16 of chapter 21A.

Section 9. Greenhouse Gas Emissions Advisory Committee

The executive office shall convene an advisory committee, of at least five members, to advise it in overseeing the greenhouse emission reduction measures of this chapter and

elsewhere in general or special law. The advisory committee shall be comprised of representatives from communities in the state with the most significant exposure to air pollution, including, but not limited to, communities with minority populations or low-income populations, or both; representatives of organizations with expertise in environmental protection; representatives of organizations with expertise in energy efficiency and renewable energy; and representatives of organizations doing business in the Commonwealth.

Section 10. Economic and Technology Advancement Advisory Committee

The executive office shall appoint an Economic and Technology Advancement Advisory Committee to advise the EOEEA on activities that will facilitate investment in and implementation of technological research and development opportunities, including, but not limited to, identifying new technologies, research, demonstration projects, funding opportunities, developing state, national, and international partnerships and technology transfer opportunities, and identifying and assessing research and advanced technology investment and incentive opportunities that will assist in the reduction of greenhouse gas emissions. The committee may also advise the EOEEA on state, regional, national, and international economic and technological developments related to greenhouse gas emission reductions.

Section 11. Commonwealth Utilities; authority

Nothing in this chapter shall affect the authority of the Commonwealth Utilities Commission.

Nothing in this chapter shall affect the obligation of an electrical utility to provide customers with safe and reliable electric service.

Nothing in this chapter shall preclude, prohibit, or restrict the construction of any new facility or the expansion of an existing facility subject to regulation under this chapter, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this chapter.

Section 12. Power Plant Performance Standard

The Commonwealth shall not permit the construction of any new power plant or expansion of any existing power plant where such power plant would have an emissions rate of more than 1,100 lbs of carbon dioxide per megawatt-hour. In addition, to ensure a net emissions rate that is not more than a new natural gas combined cycle power plant, technologies for electric generation that qualify for energy portfolio standards shall not have a net emissions rate of more than 1,110 lbs of carbon dioxide per megawatt-hour inclusive of useful thermal output, gasification, fuel conversion, and sequestration.

Section 13. Climate Change Adaptation

(a) Definitions.

For the purposes of this section, the following words or phrases shall have the following meanings:-

"Adaptation," programs, projects and policies designed to strengthen, protect and restore habitat and improve the ability of plant and animal species and natural communities to adapt to and survive to climate change.

"Board," the climate change advisory board established by subsection (c).

"Habitat" a natural area which, due to its physical or biological features, provides critical elements for the growth and survival of plants or animals including but not limited to natural areas for breeding, feeding, resting, and migrating. Physical or biological

features of habitat include, but are not limited to, structure and composition of vegetation; faunal community; soils; water chemistry and quality; and geologic, hydrologic, and microclimatic factors.

(b) State Adaptation Plan

(1) The executive office of energy and environmental affairs, in consultation with the climate change advisory board established pursuant to subsection (c), shall promulgate a written climate change adaptation plan, subject to periodic revision.

(2) The plan shall include a comprehensive assessment of the statewide impacts of climate change on terrestrial, freshwater, estuarine, coastal, and marine habitat.

(3) The plan shall be used to develop and implement a statewide climate change adaptation program for the commonwealth. The program shall ensure that state agencies integrate adaptation into agency planning, projects, programs and policies. Said plan shall consist of the following components:

(i) "research and assessment" to assess adaptation projects and programs that will enable animals, plants and natural communities to adapt to climate change based on the best available science and data;

(ii) "prioritization" to identify and protect animals, plants and natural communities most adversely affected by climate change based on the best available science and data;

(iii) "program and policy development" to integrate the plan into state agency programs and policies;

(iv) "budget" to review existing public funding sources and develop budget recommendations; and

(v) "implementation" to implement the plan and assess the effectiveness of the plan once implemented.

(4) The executive office of energy and environmental affairs shall provide opportunities for public input during the development and implementation of the plan.

(5) The executive office of energy and environmental affairs shall complete the plan within eighteen months of the effective date of this act.

(c) Climate Change Adaptation Advisory Board

The governor shall appoint 13 members of a climate change adaptation advisory board to assist the secretary of energy and environmental affairs to develop and implement the plan pursuant to subsection (b). The advisory board shall include the secretary, or his designee, who shall serve as chair; the commissioner of the division of energy resources, or his designee; the commissioner of the department of fish and game, or his designee; the commissioner of the department of conservation and recreation, or his designee; the commissioner of the department of environmental protection, or his designee; and, the commissioner of the department of agricultural resources, or his designee; a representative of the massachusetts municipal association; and, a representative of a regional planning agency. The secretary shall request the directors of the nature conservancy, mass audubon, the trustees of reservations, environmental league of massachusetts, appalachian mountain club, trust for public land, the union of concerned scientists, and environment northeast to nominate eight candidates for the remaining members of the advisory board. From the nominations received from such organizations, the secretary shall select five candidates who he shall recommend to the governor. The governor shall appoint the remaining five members from the candidates recommended by the secretary.

SECTION 8. Chapter 30, as appearing in the 2006 official edition, is hereby amended by adding, after section 39S, the following sections:

Section 39T. Use of Ultra Low Sulfur Diesel Fuel and Best Available Retrofit Technology by the State

(a) For the purposes of this section only, the following terms shall have the following meanings:

"Best Available Retrofit Technology" means technology, verified by the United States Environmental Protection Agency or California Air Resources Board for reducing the emission of pollutants that achieves reductions in particulate matter emissions at the highest classification level for diesel emission control strategies that is applicable to the particular engine and application. Such technology shall in no event result in a net increase in the emission of nitrogen oxides.

"Heavy duty vehicle" or "vehicle" means any on-road or nonroad vehicle powered by diesel fuel and having a gross vehicle weight of greater than 14,000 pounds.

"Ultra low sulfur diesel fuel" means diesel fuel having sulfur content of 0.0015 per cent of sulfur or less.

"US EPA" means the United States Environmental Protection Agency.

(b) Any diesel powered heavy duty vehicle that is owned by, operated by or on behalf of, or leased by or operating under contract to a state agency or state or regional public authority shall be powered by ultra low sulfur diesel fuel.

(c) Any diesel powered heavy duty vehicle that is owned by, operated by or on behalf of, or leased by or operating under a contract to a state agency or state or regional public authority with more than half of its governing body appointed by the governor shall utilize best available retrofit technology for reducing the emission of pollutants. The commissioner shall promulgate regulations for the implementation of this subdivision specifying procedures for compliance according to the following schedule:

(1) Not less than 33% of the vehicles covered by this subdivision shall employ best available retrofit technology on or before December 31, 2008.

(2) Not less than 66% of the vehicles covered by this subdivision shall employ best available retrofit technology on or before December 31, 2009.

(3) All vehicles covered by this subdivision shall employ best available retrofit technology on or before December 31, 2010.

(d) This subdivision shall not apply to:

(1) any vehicle subject to a lease or public works contract entered into or renewed prior to July 1, 2008;

(2) vehicles that are specially equipped for emergency response by a state authority, office of emergency management, sheriff's office, police department or fire department, as well as timber harvesting equipment such as harvesters, wood chippers, log skidders, and other processing equipment used exclusively off highway for timber harvesting and logging purposes, and farm equipment;

(3) any on-road vehicle sold as "new" in compliance with the US EPA's 2007 Heavy-duty Highway Diesel Standards" promulgated by US EPA and published in the Federal Register at 66 Fed. Reg. 5002 on January 18, 2001, or

(4) any nonroad vehicle sold as "new" in compliance with the US EPA's Tier 4 Nonroad Diesel Standards" promulgated by US EPA and published in the Federal Register at 69 Fed. Reg. 38958 on June 29, 2004.

(e) In addition to other provisions for regulations in this section, the Commissioner shall promulgate regulations as necessary and appropriate to carry out the provisions of this act including but not limited to provision of waivers upon written finding by the Commissioner that best available retrofit technology for reducing the emissions of pollutants as required by subdivision (c) of this section is not available for an individual vehicle or class of vehicles.

(f) This section shall not apply where federal law precludes the state from imposing the requirement of this section.

(g) On or before January 1, 2008 and every year thereafter, the Commissioner shall report to the Governor and Legislature on the use of ultra low sulfur diesel fuel and the use of the best available retrofit technology as required under this section. The information contained in this report shall include, but not be limited to, for each state agency and public authority covered by this section:

(1) the total number of diesel fuel-powered motor vehicles owned or operated by such agency and authority;

(2) the number of such motor vehicles that were powered by ultra low sulfur diesel fuel;

(3) the total number of diesel fuel-powered motor vehicles owned or operated by such agency and authority having a gross vehicle weight rating of more than 14,000 pounds;

(4) the number of such vehicles that utilized the best available retrofit technology, including a breakdown by motor vehicle model, engine year and the type of technology used for each vehicle;

(5) the number of such motor vehicles that are equipped with an engine certified to the applicable 2007 US EPA standard for particulate matter as set forth in Section 86.007-11 of Title 40 of the Code of Federal Regulations or to any subsequent US EPA standard for particulate matter that is at least as stringent; and

(6) all waivers, findings, and renewals of such findings, which, for each waiver, shall include but not be limited to, the quantity of diesel fuel needed to power diesel fuel-powered motor vehicles owned or operated by such agency and authority; specific information concerning the availability of ultra low sulfur diesel fuel.

(h) The department shall, to the extent practicable, coordinate with regions which have proposed or adopted heavy duty emission inspection programs to promote regional consistency in such programs.

Section 39U. Use of Diesel Retrofit Devices for Waste Haulers

(a) For the purposes of this section only, the following terms shall have the following meanings:

"Level 2 Control" means a Verified Diesel Emission Control Device that achieves a particulate matter (PM) emission reduction of 50% or more compared to uncontrolled engine emission levels.

"Level 3 Control" means a Verified Diesel Emission Control Device that achieves a particulate matter (PM) emission reduction of 85% or more compared to uncontrolled engine emission levels, or that reduces emissions to less than or equal to 0.01 grams of PM per brake horsepower-hour. Level 3 Control includes repowering or replacing the existing diesel engine with an engine meeting USEPA's 2007 Heavy-duty Highway Diesel Standards, or in the case of a nonroad engine, an engine meeting the USEPA's Tier 4 Nonroad Diesel Standards.

(b) Any diesel powered waste collection and recycling vehicle in model years between and including 1994 and 2006 that is owned, leased, or contracted to perform the removal or transfer of municipal waste, including residential or commercial waste, or recycling services shall utilize level 3 control retrofit technology for reducing the emission of pollutants. As of January 1, 2012, no waste collection or recycling vehicle in model years between and including 1994 and 2006 may be permitted to register without proper demonstration of the required level 3 control retrofit technology. The Commissioner shall promulgate regulations for the implementation of this subdivision specifying procedures for compliance according to the following schedule:

(1) At least 25% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2008.

(2) At least 50% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2009.

(3) At least 75% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2010.

(4) All vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2011.

(c) Any diesel powered waste collection and recycling vehicle in model years 1993 and earlier that is owned, leased, or contracted to perform the removal or transfer of municipal waste, including residential or commercial waste, or recycling services shall utilize level 2 control retrofit technology for reducing the emission of pollutants. As of January 1, 2011, no waste collection or recycling vehicle in model years 1993 and earlier may be permitted to register without proper demonstration of the required level 2 control retrofit technology. The Commissioner shall promulgate regulations for the implementation of this subdivision specifying procedures for compliance according to the following schedule:

(1) At least 25% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2008.

(2) At least 50% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2009.

(3) At least 75% of the vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2010.

(4) All vehicles covered by this subdivision shall have level 3 control retrofit technology on or before December 31, 2011.

(d) On or before January 1, 2008 and every year thereafter, the Commissioner shall report to the Governor and Legislature on the use of level 3 and level 2 control retrofit technology on waste collection and recycling vehicles required under this section. The information contained in this report shall include, but not be limited to:

(1) the total number of diesel fuel-powered waste collection and recycling vehicles covered by this section;

(2) the number of such diesel vehicles that were powered by ultra low sulfur diesel fuel;

(3) the total number of diesel fuel-powered waste collection and recycling vehicles having a gross vehicle weight rating of more than 14,000 pounds;

(4) the number of such vehicles between and including model years 1994 and 2006;

(5) the number of such vehicles between and including model years 1994 and 2006 that utilized level 3 control retrofit technology, including a breakdown by motor vehicle model, engine year and the type of technology used for each vehicle;

(6) the number of such vehicles in model years 1993 and earlier;

(7) the number of such vehicles in model years 1993 and earlier that utilized level 2 control retrofit technology, including a breakdown by motor vehicle model, engine year and the type of technology used for each vehicle;

(8) the number of diesel waste collection and recycling vehicles that are equipped with an engine certified to the applicable 2007 US EPA standard for particulate matter as set forth in

Section 86.007-11 of Title 40 of the Code of Federal Regulations or to any subsequent US EPA standard for particulate matter that is at least as stringent; and

(9) all waivers, findings, and renewals of such findings, which, for each waiver, shall include but not be limited to, the quantity of diesel fuel needed to power diesel fuel-powered motor vehicles owned or operated by such agency and authority; specific information concerning the availability of ultra low sulfur diesel fuel.

SECTION 9.

Section 61 of Chapter 30, as so appearing, is hereby amended by inserting after the first paragraph the following paragraph:--

"In connection with the consideration and issuance of permits, licenses and other administrative approvals and decisions, reasonably foreseeable climate change impacts, such as additional greenhouse gas emissions, and effects, such as predicted sea level rise, shall be taken into consideration."

SECTION 10. Low carbon fuel standard

Section 142K of Chapter 111 of the General Laws, as so appearing, is hereby amended by striking clause (h) in its entirety and inserting in place thereof the following two clauses:--

(h) The department of environmental protection shall adopt a Low Carbon Fuel Standard ("LCFS") for transportation fuels by June 30, 2009. The LCFS shall apply to all refiners, blenders, producers or importers, collectively known as providers, of transportation fuels in Massachusetts. The LCFS shall be measured on a full fuels cycle basis; and may be met through market-based methods by which providers exceeding the performance required by a LCFS shall receive credits that may be applied to future

obligations, or traded to providers not meeting the LCFS. The process for establishing the LCFS shall be as follows:

(1) Not later than January 1, 2009, the department of environmental protection, in consultation with the department and the executive office of transportation, shall adopt regulations establishing a low carbon fuel standard for all motor vehicle fuels sold in the commonwealth. Such regulations shall establish a declining standard for greenhouse gas emissions measured in CO2-equivalent gram per unit of fuel energy sold, sufficient to achieve a ten percent reduction in the carbon content of all passenger vehicle fuels sold in the commonwealth by 2020.

(2) Said agencies shall examine the regulations and implementation of a low carbon fuel standard in California and other states and consider ways to coordinate and issue public findings on both such matters, and shall, if applicable, use the life-cycle analysis methods employed by the California Air Resources Board to determine the carbon intensity of fuel.

(3) Said agencies shall examine the possibility of a regional approach to implementing the low carbon fuel standard and issue public findings on such matter.

(j) The responsibilities hereunder shall be in addition to all other responsibilities imposed by any other general or special law or rule or regulation."

SECTION 11. Expanded Passenger and Freight Rail Service

The Governor, in cooperation with the New England Governors Association, shall investigate the opportunities for expansion of high speed and light rail passenger rail

service and expanded rail freight movement within the Northeast region. Such investigation shall include consideration of new rail corridors, opportunities to reduce vehicle miles traveled, and an analysis of the economic, environmental and greenhouse gas benefits of such expanded passenger and freight rail service.

SECTION 12.

Nothing in this act shall restrict the executive office from adopting greenhouse gas emission limits or emission reduction measures prior to January 1, 2011, imposing those limits or measures prior to January 1, 2012, or providing early reduction credit where appropriate, nor shall this act be seen as preventing any more stringent limits on emissions.

SECTION 13. Study Commission

There shall be a special commission to study the impacts and costs of potential measures and policy proposals to reduce greenhouse gas emissions in the Commonwealth.

The commission shall consist of three members of the house of representatives, two of the members to be appointed by the speaker of the house, and one member to be appointed by the minority leader of the house, and three members of the senate, two of the members to be appointed by the senate president, and one member to be appointed by the minority leader of the senate, as well as four members to be appointed by the governor. The governor's appointees shall include a representative from an environmental advocacy organization, a representative from the renewable energy industry, a representative from the Massachusetts Municipal Association, and a representative from the National Association of Industrial and Office Properties.

The commission shall consider the following:–

(1) Incentives for the development of residential wind turbines, including neighborhood turbines;

(2) Development of a model municipal zoning ordinance for siting of residential wind turbines;

(3) Incentives to encourage construction of green buildings;

(4) Statewide adoption of appliance efficiency standards; and

(5) Incentives to encourage growth of the renewable energy sector.

SECTION 14. Severability

The provisions of this act are severable. If any provision of this act or its application is held invalid, that invalidity shall not affect other provisions or applications that can be given effect without the invalid provision or application.

SENATE . . . . . No. 2531

The Commonwealth of Massachusetts

SENATE, March 4, 2008.

The committee on Ways and Means, to whom was committed the Senate Bill relative to the Massachusetts Global Warming Solutions Act (Senate, No. 2423), report recommending that the same ought to pass with an amendment, substituting a new draft entitled, "An Act establishing the Global Warming Solutions Act" (Senate, No. 2531).

For the committee,

STEVEN C. PANAGIOTAKOS.

The Commonwealth of Massachusetts

In the Year Two Thousand and Eight.

AN ACT ESTABLISHING THE GLOBAL WARMING SOLUTIONS ACT.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section 19 of chapter 6A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by striking out subsection (f) and inserting in place thereof the following 2 subsections:-

(f) The secretary shall collaborate with other state agencies to reduce greenhouse gas emissions to achieve the greenhouse gas emissions limits established in chapter 21N.

(g) Nothing in this chapter shall be construed to confer any powers or impose any duties upon the secretary with respect to the foregoing agencies and authorities except as expressly provided by law.

SECTION 2. Section 1 of chapter 16 of the General Laws, as so appearing, is hereby amended by striking out subsection (d) and inserting in place thereof the following 2 subsections:-

(d) The commissioner shall collaborate with other state agencies to reduce greenhouse gas emissions to the limits established in chapter 21N.

(e) The commissioner may promulgate rules and regulations to effectuate the purposes of this chapter.

SECTION 3. The first paragraph of section 2 of chapter 21A of the General Laws, as so appearing, is hereby amended by adding the following clause:-

(30) consistent with chapter 21N, oversee state agency efforts to address and diminish the impacts of global warming by coordinating state agency actions to achieve the greenhouse gas emissions limits established in chapter 21N.

SECTION 4. Said chapter 21A is hereby further amended by inserting after section 2 the following section:-

Section 2A. Subject to appropriation, the secretary of energy and environmental affairs, in consultation with the secretary of housing and economic development, shall create and administer programs and incentives to foster manufacturing, development and research in the renewable energy and energy efficiency sectors. At a minimum, the secretary of energy and environmental affairs shall develop, subject to appropriation, seed grant partnerships for research and venture investment programs, which shall foster public/private partnerships between the state and the venture community. This program shall provide grants to qualified university researchers and validation stage ventures, expand the field of energy-focused entrepreneurs and spark the cooperative development of commercial clean energy companies through increased venture investment. The program shall include but not be limited to a focus of providing grants to university energy research projects and early-stage energy ventures seeking

validation of their science and intellectual property, and the establishment of an Energy Entrepreneur program.

SECTION 5. Section 8 of said chapter 21A, as appearing in the 2006 Official Edition, is hereby amended by inserting after the second paragraph the following paragraph:-

The department of environmental protection shall assist in the implementation of chapter 21N.

SECTION 6. Section 16 of said chapter 21A, as so appearing, is hereby amended by adding the following paragraph:-

Any person who fails to comply with or otherwise violates chapter 21N or any regulation adopted thereunder shall be liable for a civil administrative penalty not to exceed $25,000 for each day the violation continues.

SECTION 7. The General Laws are hereby amended by inserting after chapter 21M the following chapter:-

CHAPTER 21N.

GLOBAL WARMING SOLUTIONS ACT.

Section 1. For the purposes of this chapter, the following terms shall have the following meanings:

"Allowance", an authorization to emit, during a specified year, up to 1 ton of carbon dioxide equivalent.

"Alternative compliance mechanism", an action undertaken by a greenhouse gas emissions source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emissions reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable and enforceable.

"Carbon dioxide equivalent", the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

"Department", the department of environmental protection.

"Direct emissions", emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company-owned or company-leased motor vehicles.

"Direct emissions reduction", a greenhouse gas emissions reduction action made by a greenhouse gas emissions source at that source.

"Emission", emission of greenhouse gas into the air.

"Emissions reduction measure", programs, measures, standards and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases.

"Entity", a person as defined in section 16 of chapter 21A that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity or a commercial or industrial site, which source may include, but not be limited to, a transportation fleet.

"Executive office", the executive office of energy and environmental affairs.

"Facility", a building, structure or installation located on contiguous or adjacent properties of an entity.

"Greenhouse gas", any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change

including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"Greenhouse gas emissions limit", an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the secretary, expressed in tons of carbon dioxide equivalents.

"Greenhouse gas emissions source", any source, or category of sources, of greenhouse gas emissions with emissions that are at a level of significance, as determined by the executive office, that its participation in the program established under this chapter will enable the executive office to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

"Indirect emissions", emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

"Leakage", the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

"Market-based compliance mechanism", (i) a system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking, credits and other transactions, governed by rules and protocols established by the executive office or the regional greenhouse gas initiative, that result in the same greenhouse gas emissions reduction, over the same time period, as direct compliance with a greenhouse gas emissions limit or emissions reduction measure adopted by executive office pursuant to this chapter.

"Secretary", the secretary of energy and environmental affairs.

"Statewide greenhouse gas emissions", the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in the commonwealth, accounting for transmission and distribution line losses, whether the electricity is generated in the commonwealth or imported, vehicle emissions and heating and cooling of buildings, expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit", the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the executive office pursuant to this chapter.

Section 2. (a) The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions.

(b) The department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. The regulations shall:

(1) establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources; provided, however, that in establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium;

(2) require the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases shall report annually to the regional registry direct stack emissions of greenhouse gases from such sources;

(3) require the owner or operator of any facility that has stationary emissions sources that emit greenhouse gases in excess of 5,000 tons of greenhouse gases per year in carbon

dioxide equivalents shall report annually to the regional registry direct emissions of greenhouse gases from such sources. The department shall develop a simplified estimation form to assist facilities in determining who must report emissions. The secretary shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry;

(4) provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to clauses (2) and (3) of this subsection but which do so on a voluntary basis; provided, however, that the greenhouse gas emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate;

(5) account for greenhouse gas emissions from all electricity consumed in the commonwealth, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments and municipal light boards as defined in section 1 of chapter 164A;

(6) ensure rigorous and consistent accounting of emissions and provide reporting tools and formats to ensure collection of necessary data; and

(7) ensure that greenhouse gas emissions sources maintain comprehensive records of all reported greenhouse gas emissions.

(c) In furtherance of this section, the department shall:

(1) consult with the secretary on periodic review and updates of emission reporting requirements, as necessary;

(2) review existing and proposed international, federal and state greenhouse gas emissions reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this chapter and other programs and to streamline reporting requirements on greenhouse gas emissions sources; and

(3) publish a state greenhouse gas emissions inventory every 3 years that includes comprehensive estimates of the quantity of greenhouse gas emissions in the state for the last 3 years in which data is available.

Section 3. Emissions levels and limits associated with the electric sector shall be established by the executive office and the department based on consumption and purchases of electricity from the regional electric grid, taking into account the Regional Greenhouse Gas Initiative and the renewable portfolio standard.

Section 4. (a) The secretary shall adopt a plan for achieving a 2020 statewide greenhouse gas emissions limit. The secretary shall consult with all state agencies and regional authorities and agreements with jurisdiction over sources of greenhouse gases on all elements of the statewide greenhouse gas emissions limit and plan that pertain to energy related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, and statewide fuel supplies, vehicle emissions and heating and cooling of buildings to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the secretary are complementary, non-duplicative, and can be implemented in an efficient and cost-effective manner

(b) The secretary shall analyze the feasibility of measures to meet the 2020 statewide greenhouse gas emissions limit. Such measures shall include, but not be limited to, direct emissions reduction measures, alternative compliance mechanisms, market-based compliance

mechanisms and potential monetary and nonmonetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of statewide greenhouse gas emissions limits.

(c) The secretary shall consider all relevant information pertaining to greenhouse gas emissions reduction programs in California, Canada, the European Union and any other states, localities and nations.

(d) The secretary shall evaluate the total potential costs and total potential economic and noneconomic benefits of various reduction measures to the economy, the environment and the public health, using the best available economic models, emissions estimation techniques and other scientific methods.

(e) The secretary shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions and shall recommend a *de minimis* threshold of greenhouse gas emissions below which emissions reduction requirements shall not apply.

(f) The secretary shall identify opportunities for emissions reduction measures from all verifiable and enforceable voluntary actions.

(g) The secretary shall conduct public hearings to provide interested parties with an opportunity to comment on a proposed implementing plan. The secretary shall conduct a portion of the workshops in regions that have the most significant exposure to air pollutants including, but not limited to, communities with minority populations, communities with low-income populations or both.

(h) The secretary shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every 5 years, including the plans to implement the 2030, 2040 and 2050 statewide emissions limits.

Section 5. (a) The executive office shall monitor the implementation of regulations relative to global warming, and shall publish a report and recommendations regarding such implementation. The report shall include a discussion of the following:

(1) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth, and encourage early action to reduce greenhouse gas emissions;

(2) whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities;

(3) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions;

(4) whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions;

(5) consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health;

(6) whether state actions minimize the administrative burden of implementing and complying with these regulations;

(7) whether state actions minimize leakage;

(8) consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases;

(9) whether greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable; and

(10) recommendations for future policy action, including legislation or other action.

(b) The report shall be updated and re-issued every 5 years. The secretary shall file the report with the clerk of the house of representatives, the clerk of the senate, the house and senate committee on ways and means, the joint committee on telecommunications, utilities and energy and the joint committee on the environment, natural resources and agriculture.

Section 6. In developing its plan for achieving the statewide greenhouse gas emissions limits, the commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings and transportation.

Section 7. (a) The secretary, in consultation with fiscal agencies of the commonwealth, may consider the use of market-based compliance mechanisms to address global warming concerns.

(b) Prior to the inclusion of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the secretary shall:

(1) consider the potential for direct, indirect and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution;

(2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide and mercury; and

(3) maximize additional environmental and economic benefits, as appropriate.

(c) The secretary may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emissions limits and mandatory emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(d) The executive office and the department may work with states participating in the Regional Greenhouse Gas Initiative, and other interested states and Canadian provinces to develop a plan to expand market-based compliance mechanisms such as the Regional Greenhouse Gas Initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(e) The executive office shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure or market-based compliance mechanism adopted by the executive office or a department pursuant to this chapter. The department shall impose a civil administrative penalty consistent with section 16 of chapter 21A for a violation, by either an incorporated entity or an individual, of a rule, regulation, order, emissions limitation, emissions reduction measure or other measure adopted by the executive office pursuant to this chapter.

Section 8. The secretary shall convene an advisory committee, of at least 5 members, to advise him in overseeing all greenhouse emissions reduction. The advisory committee shall consist of representatives from communities with the most significant exposure to air pollution

including, but not limited to, communities with minority populations or low-income populations or both, representatives of organizations with expertise in environmental protection, representatives of organizations with expertise in energy efficiency and renewable energy and representatives of organizations doing business in the commonwealth.

Section 9. The secretary shall appoint an economic and technology advancement advisory committee to advise the executive office on activities to facilitate investment in and implementation of technological research and development opportunities including, but not limited to, identifying new technologies, research, demonstration projects and funding opportunities, developing state, national and international partnerships and technology transfer opportunities and identifying and assessing research and advanced technology investment and incentive opportunities to assist in the reduction of greenhouse gas emissions. The committee may also advise the executive office on state, regional, national, and international economic and technological developments related to greenhouse gas emission reductions.

Section 10. Nothing in this chapter shall affect the authority of the commonwealth utilities commission.

Nothing in this chapter shall affect the obligation of an electrical utility to provide customers with safe and reliable electric service.

Section 11. No permit shall be granted for the construction of a new power plant or expansion of any existing power plant where the power plant would have an emissions rate of more than 1,100 pounds of carbon dioxide per megawatt-hour. In addition, technologies for electric generation that qualify for energy portfolio standards shall have a net emissions rate not to exceed the emissions rate of a new natural gas combined cycle power plant, inclusive of all emissions related to thermal delivery, combustion, gasification, fuel processing and

sequestration, whether or not such activities occur at the generating source or at another location.

Section 12. (a) For the purposes of this section, the following terms shall have the following meanings unless the context clearly requires otherwise:

"Adaptation", programs, projects and policies designed to strengthen, protect and restore habitat and improve the ability of plant and animal species and natural communities to adapt to and survive to climate change.

"Board", the climate change advisory board established in subsection (c).

"Built environment", buildings, roads, fixtures, parks and all other structures and improvements, including all buildings, spaces and products that are created or modified by people.

"Habitat", a natural area which, due to its physical or biological features, provides critical elements for the growth and survival of plants or animals including but not limited to, natural areas for breeding, feeding, resting and migrating; provided, however that physical or biological features of habitat include, but are not limited to, structure and composition of vegetation; faunal community; soils; water chemistry and quality; and geologic, hydrologic, and microclimatic factors.

(b) (1) The secretary, in consultation with the climate change advisory board established pursuant to subsection (c), shall promulgate a written climate change adaptation plan, subject to periodic revision.

(2) The plan shall include a comprehensive assessment of the statewide impacts of climate change on terrestrial, freshwater, estuarine, coastal and marine habitat and the built environment.

(3) The plan shall be used to develop and implement a statewide climate change adaptation program. The program shall ensure that state agencies integrate adaptation into agency planning, projects, programs and policies. The plan shall consist of the following components: (i) research and assessment to assess adaptation projects and programs to enable animals, plants and natural communities and the built environment to adapt to climate change based on the best available science and data; (ii) prioritization to identify and protect animals, plants, natural communities and elements of the built environment most adversely affected by climate change based on the best available science and data; (iii) program and policy development to integrate the plan into state agency programs and policies; (iv) budget to review existing public funding sources and develop budget recommendations; and (v) implementation to implement the plan and assess the effectiveness of the plan once implemented.

(4) The executive office of energy and environmental affairs shall provide opportunities for public input during the development and implementation of the plan.

(c) The climate change adaptation advisory board to assist the secretary in developing and implementing the plan shall include the secretary, or his designee, who shall serve as chair; the commissioner of energy resources, or his designee; the commissioner of fish and game, or his designee; the commissioner of conservation and recreation, or his designee; the commissioner of environmental protection, or his designee and the commissioner of agricultural resources, or his designee; and 7 persons to be appointed by the governor, 1 of whom shall be a representative of the Massachusetts Municipal Association; and 1 of whom shall be a representative of a regional planning agency. For the remaining 5 persons to be appointed by the governor, each of the following organizations will each nominate 1 candidate and submit the name of the candidate to the secretary: the Nature Conservancy, Massachusetts Audubon

Society, the Trustees of Reservations, Environmental League of Massachusetts, Appalachian Mountain Club, Trust for Public Land, the Union of Concerned Scientists and Environment Northeast. Of the 8 names received by the secretary, the secretary shall select 5 names and submit those names to the governor so that the governor may appoint them to the advisory board.

SECTION 8. Chapter 23 of the General Laws is hereby amended by inserting after section 3A the following section:-

Section 3B. Subject to appropriation, the secretary of labor and workforce development, in consultation with the secretary of energy and environmental affairs, shall establish and administer programs and incentives to foster manufacturing and development in the renewable energy and energy efficient sectors. At a minimum, the secretary of labor and workforce development shall develop, subject to appropriation, energy efficiency and renewable energy workforce development and training programs to increase the number of trained skilled workers in the economic sectors of emerging clean energy, renewable energy, energy efficiency and demand resources. The program shall develop a plan to address clean energy labor demands. The program shall provide training for low-income and disadvantaged adults. The program shall be designed to promote growth of the clean energy economy by identifying and maintaining well-trained skilled workers and addressing emerging skills gaps in the clean energy industry. The program shall include, but not be limited to, providing grants to state universities, state colleges, community colleges, vocational and technical schools and organized labor for educational and certification programs targeted at both engineering and technical needs in the cluster and serving end-user needs.

SECTION 9. Chapter 29 of the General Laws, as so appearing, is hereby amended by inserting after section 2XXX the following section:-

Section 2YYY. There shall be established and set up on the books of the commonwealth a separate fund to be known as the Green Building Revolving Loan Fund. There shall be credited to the fund all revenues or other financing sources directed to it by appropriation, any income derived from the investing of amounts credited to the fund and the monies from the repayment of loans from the fund. Monies credited to the fund may be expended by the executive office of energy and environmental affairs, without further appropriation, for loans to provide low-interest financing for new construction or major renovation projects that exceed the energy efficiency requirements of the state building code by 30 per cent.

SECTION 10. Section 61 of chapter 30 of the General Laws is hereby amended by inserting after the first paragraph, as appearing in the 2006 Official Edition, the following paragraph:-

In considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board commission or authority shall consider reasonably foreseeable climate change impacts such as additional greenhouse gas emissions, and effects such as predicted sea level rise, shall be taken into consideration.

SECTION 11. Section 142K of chapter 111 of the General Laws, as so appearing, is hereby amended by striking out subsection (h) and inserting in place thereof the following 2 subsections:-

(h) The department of environmental protection shall adopt a low carbon fuel standard for transportation fuels. The standard shall apply to all providers of transportation which, for the purposes of this subsection shall include refiners, blenders, producers and importers. The standard shall be measured on a full fuels cycle basis and may be met through market-based methods by which providers exceeding the performance required by a standard shall receive credits that may be applied to future obligations, or traded to providers not meeting the standard. The process for establishing the standard shall be as follows:

(1) The department of environmental protection, in consultation with the department and the executive office of transportation, shall adopt regulations establishing a low carbon fuel standard for all motor vehicle fuels sold in the commonwealth. Such regulations shall establish a declining standard for greenhouse gas emissions measured in CO2-equivalent gram per unit of fuel energy sold, sufficient to achieve a 10 per cent reduction in the carbon content of all passenger vehicle fuels sold in the commonwealth by 2020.

(2) The department of environmental protection and the executive office of transportation shall examine the regulations and implementation of a low carbon fuel standard in California and other states and consider ways to coordinate and issue public findings on both such matters, and shall, if applicable, use the life-cycle analysis methods employed by the California Air Resources Board to determine the carbon intensity of fuel.

(3) The department of environmental protection and the executive office of transportation shall examine the possibility of a regional approach to implementing the low carbon fuel standard and issue public findings on such matter.

(i) The responsibilities hereunder shall be in addition to all other responsibilities imposed by any other general or special law or rule or regulation.

SECTION 12. The department of environmental protection shall adopt regulations pursuant to section 2 of chapter 21N of the General Laws not later than January 1, 2009.

SECTION 13. The first reports required to be filed pursuant to clauses (2) and (3) of subsection (b) of section 2 of chapter 21N of the General Laws shall be filed not later than April 15, 2009.

SECTION 14. The department of environmental protection shall provide for the voluntary reporting of greenhouse gas emissions to the regional greenhouse gas registry pursuant to clause (4) of subsection (b) of section 2 of chapter 21N of the General laws not later than July 1, 2009.

SECTION 15. The department shall account for greenhouse gas emissions from electricity consumed in the commonwealth pursuant to clause (5) of subsection (b) of section 2 of chapter 21N of the General Laws not later than July 1, 2009.

SECTION 16. The first statewide greenhouse gas emissions inventory under clause (3) of subsection (c) of section 2 of chapter 21N of the General Laws shall be completed not later than December 31, 2010.

SECTION 17. (a) Not later than July 1, 2009, the department of environmental protection shall, after notice and opportunity for all interested parties to comment at a public hearing, determine what the statewide greenhouse gas emissions level was in 1990 and may reasonably project what that emissions level will be in 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009. This projection shall be referred to as the projected 2020 level.

(b) The secretary of energy and environmental affairs, in consultation with the department, shall adopt statewide greenhouse gas emissions limits according to the following:-

(1) The 2020 statewide greenhouse gas emissions limit shall be 20 per cent below the 1990 level; provided, however, that not later than January 1, 2010, the secretary shall adopt a plan to achieve that level in accordance with section 4 of chapter 21N of the General Laws.

(2) The secretary shall adopt interim 2030 and 2040 statewide greenhouse gas emissions limits accompanied by plans to achieve those limits in accordance with said section 4 of said chapter 21N. The 2030 and 2040 statewide green house gas emissions limits shall maximize the ability of the state to meet the 2050 statewide emissions limit.

(3) The 2050 statewide greenhouse gas emissions limit shall be 80 per cent below the 1990 level. The executive office of energy and environmental affairs shall adopt incremental reduction targets for the years 2010 to 2019, inclusive, and 2021 to 2050, inclusive, that shall maximize the ability of the state to meet the statewide emissions limits.

(b) In furtherance of achieving the statewide greenhouse gas emissions limit by January 1, 2011, the department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that are sufficient to meet the targets established in this section.

SECTION 18. The secretary of energy and environmental affairs shall adopt a plan for achieving a 2020 statewide greenhouse gas emissions limit pursuant to section 4 of chapter 21N of the General Laws not later than January 1, 2010.

SECTION 19. The executive office of energy and environmental affairs shall publish its first report pursuant to subsection (a) of section 5 of chapter 21N of the General Laws not later than January 1, 2014.

SECTION 20. The executive office of energy and environmental affairs shall complete the climate change adaptation plan pursuant to section 12 of chapter 21N of the General Laws not later than 18 months after the effective date of this act.

SECTION 21. The low carbon fuel standard for transportation fuels to be adopted pursuant to subsection (h) of section 142K of chapter 111 of the General Laws shall be completed not later than June 30, 2009; provided, however, that regulations establishing a low carbon fuel standard for all motor vehicle fuels pursuant to said subsection (h) shall be adopted not later than January 1, 2009.

SECTION 22. Nothing in this act shall restrict the executive office from adopting greenhouse gas emissions limits or emissions reduction measures before January 1, 2010, imposing those limits or measures before January 1, 2012 or providing early reduction credit where appropriate, nor shall anything in this act prevent the imposition of more stringent limits on emissions.

SENATE . . . . . No. 2540

[PRINTED AS AMENDED]

[Senate, March 6, 2008 — New draft of the Senate Bill establishing the Global Warming Solutions Act (Senate, No. 2531, printed as amended).]

The Commonwealth of Massachusetts

In the Year Two Thousand and Eight.

AN ACT ESTABLISHING THE GLOBAL WARMING SOLUTIONS ACT.

Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:

SECTION 1. Section 19 of chapter 6A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by striking out subsection (f) and inserting in place thereof the following 2 subsections:-

(f) The secretary shall collaborate with other state agencies to reduce greenhouse gas emissions to achieve the greenhouse gas emissions limits established in chapter 21N.

(g) Nothing in this chapter shall be construed to confer any powers or impose any duties upon the secretary with respect to the foregoing agencies and authorities except as expressly provided by law.

SECTION 2. Section 1 of chapter 16 of the General Laws, as so appearing, is hereby amended by striking out subsection (d) and inserting in place thereof the following 2 subsections:-

(d) The commissioner shall collaborate with other state agencies to reduce greenhouse gas emissions to the limits established in chapter 21N.

(e) The commissioner may promulgate rules and regulations to effectuate the purposes of this chapter.

SECTION 3. The first paragraph of section 2 of chapter 21A of the General Laws, as so appearing, is hereby amended by adding the following clause:-

(30) consistent with chapter 21N, oversee state agency efforts to address and diminish the impacts of global warming by coordinating state agency actions to achieve the greenhouse gas emissions limits established in chapter 21N.

SECTION 4. Said chapter 21A is hereby further amended by inserting after section 2 the following section:-

Section 2A. Subject to appropriation, the secretary of energy and environmental affairs, in consultation with the secretary of housing and economic development, shall create and administer programs and incentives to foster manufacturing, development and research in the renewable energy and energy efficiency sectors. At a minimum, the secretary of energy and environmental affairs shall develop, subject to appropriation, seed grant partnerships for research and venture investment programs, which shall foster public/private partnerships between the state and the venture community. This program shall provide grants to qualified university researchers and validation stage ventures, expand the field of energy-focused entrepreneurs and spark the cooperative development of commercial clean energy companies through increased venture investment. The program shall include but not be limited to a focus of providing grants to university energy research projects and early-stage energy ventures seeking

validation of their science and intellectual property, and the establishment of an Energy Entrepreneur program.

SECTION 5. Section 8 of said chapter 21A, as appearing in the 2006 Official Edition, is hereby amended by inserting after the second paragraph the following paragraph:-

The department of environmental protection shall assist in the implementation of chapter 21N.

SECTION 6. Section 16 of said chapter 21A, as so appearing, is hereby amended by adding the following paragraph:-

Any person who fails to comply with or otherwise violates chapter 21N or any regulation adopted thereunder shall be liable for a civil administrative penalty not to exceed $25,000 for each day the violation continues.

SECTION 7. The General Laws are hereby amended by inserting after chapter 21M the following chapter:-

CHAPTER 21N.

GLOBAL WARMING SOLUTIONS ACT.

Section 1. For the purposes of this chapter, the following terms shall have the following meanings:

"Allowance", an authorization to emit, during a specified year, up to 1 ton of carbon dioxide equivalent.

"Alternative compliance mechanism", an action undertaken by a greenhouse gas emissions source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emissions reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable and enforceable.

"Carbon dioxide equivalent", the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

"Department", the department of environmental protection.

"Direct emissions", emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company-owned or company-leased motor vehicles.

"Direct emissions reduction", a greenhouse gas emissions reduction action made by a greenhouse gas emissions source at that source.

"Emission", emission of greenhouse gas into the air.

"Emissions reduction measure", programs, measures, standards and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources, that are designed to reduce emissions of greenhouse gases.

"Entity", a person as defined in section 16 of chapter 21A that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity or a commercial or industrial site, which source may include, but not be limited to, a transportation fleet.

"Executive office", the executive office of energy and environmental affairs.

"Facility", a building, structure or installation located on contiguous or adjacent properties of an entity.

"Greenhouse gas", any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change

including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"Greenhouse gas emissions limit", an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the secretary, expressed in tons of carbon dioxide equivalents.

"Greenhouse gas emissions source", any source, or category of sources, of greenhouse gas emissions with emissions that are at a level of significance, as determined by the executive office, that its participation in the program established under this chapter will enable the executive office to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

"Indirect emissions", emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

"Leakage", the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

"Market-based compliance mechanism", (i) a system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking, credits and other transactions, governed by rules and protocols established by the executive office or the regional greenhouse gas initiative, that result in the same greenhouse gas emissions reduction, over the same time period, as direct compliance with a greenhouse gas emissions limit or emissions reduction measure adopted by executive office pursuant to this chapter.

"Secretary", the secretary of energy and environmental affairs.

"Statewide greenhouse gas emissions", the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in the commonwealth, accounting for transmission and distribution line losses, whether the electricity is generated in the commonwealth or imported, vehicle emissions and heating and cooling of buildings, expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit", the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the executive office pursuant to this chapter.

Section 2. (a) The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions.

(b) The department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this program. The regulations shall:

(1) establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources; provided, however, that in establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium;

(2) require the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases shall report annually to the regional registry direct stack emissions of greenhouse gases from such sources;

(3) require the owner or operator of any facility that has stationary emissions sources that emit greenhouse gases in excess of 5,000 tons of greenhouse gases per year in carbon

dioxide equivalents shall report annually to the regional registry direct emissions of greenhouse gases from such sources. The department shall develop a simplified estimation form to assist facilities in determining who must report emissions. The secretary shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry;

(4) provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to clauses (2) and (3) of this subsection but which do so on a voluntary basis; provided, however, that the greenhouse gas emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate;

(5) account for greenhouse gas emissions from all electricity consumed in the commonwealth, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments and municipal light boards as defined in section 1 of chapter 164A;

(6) ensure rigorous and consistent accounting of emissions and provide reporting tools and formats to ensure collection of necessary data; and

(7) ensure that greenhouse gas emissions sources maintain comprehensive records of all reported greenhouse gas emissions.

(c) In furtherance of this section, the department shall:

(1) consult with the secretary on periodic review and updates of emission reporting requirements, as necessary;

(2) review existing and proposed international, federal and state greenhouse gas emissions reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this chapter and other programs and to streamline reporting requirements on greenhouse gas emissions sources; and

(3) publish a state greenhouse gas emissions inventory every 3 years that includes comprehensive estimates of the quantity of greenhouse gas emissions in the state for the last 3 years in which data is available.

Section 3. Emissions levels and limits associated with the electric sector shall be established by the executive office and the department based on consumption and purchases of electricity from the regional electric grid, taking into account the Regional Greenhouse Gas Initiative and the renewable portfolio standard.

Section 4. (a) The secretary shall adopt a plan for achieving a 2020 statewide greenhouse gas emissions limit. The secretary shall consult with all state agencies and regional authorities and agreements with jurisdiction over sources of greenhouse gases on all elements of the statewide greenhouse gas emissions limit and plan that pertain to energy related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, and statewide fuel supplies, vehicle emissions and heating and cooling of buildings to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the secretary are complementary, non-duplicative, and can be implemented in an efficient and cost-effective manner

(b) The secretary shall analyze the feasibility of measures to meet the 2020 statewide greenhouse gas emissions limit. Such measures shall include, but not be limited to, direct emissions reduction measures, alternative compliance mechanisms, market-based compliance

mechanisms and potential monetary and nonmonetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of statewide greenhouse gas emissions limits.

(c) The secretary shall consider all relevant information pertaining to greenhouse gas emissions reduction programs in California, Canada, the European Union and any other states, localities and nations.

(d) The secretary shall evaluate the total potential costs and total potential economic and noneconomic benefits of various reduction measures to the economy, the environment and the public health, using the best available economic models, emissions estimation techniques and other scientific methods.

(e) The secretary shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions and shall recommend a *de minimis* threshold of greenhouse gas emissions below which emissions reduction requirements shall not apply.

(f) The secretary shall identify opportunities for emissions reduction measures from all verifiable and enforceable voluntary actions.

(g) The secretary shall conduct public hearings to provide interested parties with an opportunity to comment on a proposed implementing plan. The secretary shall conduct a portion of the workshops in regions that have the most significant exposure to air pollutants including, but not limited to, communities with minority populations, communities with low-income populations or both.

(h) The secretary shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every 5 years, including the plans to implement the 2030, 2040 and 2050 statewide emissions limits.

Section 5. (a) The executive office shall monitor the implementation of regulations relative to global warming, and shall publish a report and recommendations regarding such implementation. The report shall include a discussion of the following:

(1) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth, and encourage early action to reduce greenhouse gas emissions;

(2) whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities;

(3) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this section receive appropriate credit for early voluntary reductions;

(4) whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions;

(5) consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health;

(6) whether state actions minimize the administrative burden of implementing and complying with these regulations;

(7) whether state actions minimize leakage;

(8) consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases;

(9) whether greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable; and

(10) recommendations for future policy action, including legislation or other action.

(b) The report shall be updated and re-issued every 5 years. The secretary shall file the report with the clerk of the house of representatives, the clerk of the senate, the house and senate committee on ways and means, the joint committee on telecommunications, utilities and energy and the joint committee on the environment, natural resources and agriculture.

Section 6. In developing its plan for achieving the statewide greenhouse gas emissions limits, the commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings and transportation.

Section 7. (a) The secretary, in consultation with fiscal agencies of the commonwealth, may consider the use of market-based compliance mechanisms to address global warming concerns.

(b) Prior to the inclusion of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the secretary shall:

(1) consider the potential for direct, indirect and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution;

(2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide and mercury; and

(3) maximize additional environmental and economic benefits, as appropriate.

(c) The secretary may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emissions limits and mandatory emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(d) The executive office and the department may work with states participating in the Regional Greenhouse Gas Initiative, and other interested states and Canadian provinces to develop a plan to expand market-based compliance mechanisms such as the Regional Greenhouse Gas Initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(e) The executive office shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions reduction measure or market-based compliance mechanism adopted by the executive office or a department pursuant to this chapter. The department shall impose a civil administrative penalty consistent with section 16 of chapter 21A for a violation, by either an incorporated entity or an individual, of a rule, regulation, order, emissions limitation, emissions reduction measure or other measure adopted by the executive office pursuant to this chapter.

Section 8. The secretary shall convene an advisory committee, of at least 5 members, to advise him in overseeing all greenhouse emissions reduction. The advisory committee shall consist of representatives from communities with the most significant exposure to air pollution

including, but not limited to, communities with minority populations or low-income populations or both, representatives of organizations with expertise in environmental protection, representatives of organizations with expertise in energy efficiency and renewable energy and representatives of organizations doing business in the commonwealth.

Section 9. The secretary shall appoint an economic and technology advancement advisory committee to advise the executive office on activities to facilitate investment in and implementation of technological research and development opportunities including, but not limited to, identifying new technologies, research, demonstration projects and funding opportunities, developing state, national and international partnerships and technology transfer opportunities and identifying and assessing research and advanced technology investment and incentive opportunities to assist in the reduction of greenhouse gas emissions. The committee may also advise the executive office on state, regional, national, and international economic and technological developments related to greenhouse gas emission reductions.

Section 10. Nothing in this chapter shall affect the authority of the commonwealth utilities commission.

Nothing in this chapter shall affect the obligation of an electrical utility to provide customers with safe and reliable electric service.

Section 11. The commonwealth shall not issue permits for the construction of new base-load power plants, as defined by ISO New England, or expansion of an existing base-load power plant if the power plant would have an emissions rate of more than 1,100 lbs of carbon dioxide per megawatt-hour., provided however that this section shall not apply to existing base-load units that increase output without increasing carbon dioxide emissions. Further, the net emissions rate of technologies for electric generation that qualify for energy portfolio standards shall rate which shall not exceed the emissions rate of a new natural gas combined cycle power plant, inclusive of all emissions related to thermal delivery, combustion, gasification, fuel

processing and sequestration, whether or not such activities occur at the generating source or at another location. This section shall not apply to research and development projects approved by the secretary of energy and environmental affairs.

Section 12. (a) For the purposes of this section, the following terms shall have the following meanings unless the context clearly requires otherwise:

"Adaptation", programs, projects and policies designed to strengthen, protect and restore habitat and improve the ability of plant and animal species and natural communities to adapt to and survive to climate change.

"Board", the climate change adaptation advisory board established in subsection (c).

"Built environment", buildings, roads, fixtures, parks and all other structures and improvements, including all buildings, spaces and products that are created or modified by people.

"Habitat", a natural area which, due to its physical or biological features, provides critical elements for the growth and survival of plants or animals including but not limited to, natural areas for breeding, feeding, resting and migrating; provided, however that physical or biological features of habitat include, but are not limited to, structure and composition of vegetation; faunal community; soils; water chemistry and quality; and geologic, hydrologic, and microclimatic factors.

(b) (1) The secretary, in consultation with the climate change advisory board established pursuant to subsection (c), shall promulgate a written climate change adaptation plan, subject to periodic revision.

(2) The plan shall include a comprehensive assessment of the statewide impacts of climate change on terrestrial, freshwater, estuarine, coastal and marine habitat and the built environment.

(3) The plan shall be used to develop and implement a statewide climate change adaptation program. The program shall ensure that state agencies integrate adaptation into agency planning, projects, programs and policies. The plan shall consist of the following components: (i) research and assessment to assess adaptation projects and programs to enable animals, plants and natural communities and the built environment to adapt to climate change based on the best available science and data; (ii) prioritization to identify and protect animals, plants, natural communities and elements of the built environment most adversely affected by climate change based on the best available science and data; (iii) program and policy development to integrate the plan into state agency programs and policies; (iv) budget to review existing public funding sources and develop budget recommendations; and (v) implementation to implement the plan and assess the effectiveness of the plan once implemented.

(4) The executive office of energy and environmental affairs shall provide opportunities for public input during the development and implementation of the plan.

(c) There shall be a climate change adaptation advisory board to assist the secretary in developing and implementing the plan. The board shall include the secretary, or his designee, who shall serve as chair; the commissioner of energy resources, or his designee; the commissioner of fish and game, or his designee; the commissioner of conservation and recreation, or his designee; the commissioner of environmental protection, or his designee; and the commissioner of agricultural resources, or his designee; 2 persons to be appointed by the governor, 1 of whom shall be a representative of the Massachusetts Municipal Association; and 1 of whom shall be a representative of a regional planning agency; and 5 persons to be appointed by the secretary, from names submitted to him from the following organizations : the Nature Conservancy, Massachusetts Audubon Society, the Trustees of Reservations,

Environmental League of Massachusetts, Appalachian Mountain Club, Trust for Public Land, the Union of Concerned Scientists and Environment Northeast. Each of the organization shall submit 1 name to the secretary and the secretary shall select 5 names fro appointment to the advisory board.

SECTION 8. Chapter 23 of the General Laws is hereby amended by inserting after section 3A the following section:-

Section 3B. Subject to appropriation, the secretary of labor and workforce development, in consultation with the secretary of energy and environmental affairs, shall establish and administer programs and incentives to foster manufacturing and development in the renewable energy and energy efficient sectors. At a minimum, the secretary of labor and workforce development shall develop, subject to appropriation, energy efficiency and renewable energy workforce development and training programs to increase the number of trained skilled workers in the economic sectors of emerging clean energy, renewable energy, energy efficiency and demand resources. The program shall develop a plan to address clean energy labor demands. The program shall provide training for low-income and disadvantaged adults. The program shall be designed to promote growth of the clean energy economy by identifying and maintaining well-trained skilled workers and addressing emerging skills gaps in the clean energy industry. The program shall include, but not be limited to, providing grants to state universities, state colleges, community colleges, vocational and technical schools and organized labor for educational and certification programs targeted at both engineering and technical needs in the cluster and serving end-user needs.

SECTION 9. Chapter 29 of the General Laws, as so appearing, is hereby amended by inserting after section 2XXX the following section:-

Section 2YYY. There shall be established and set up on the books of the commonwealth a separate fund to be known as the Green Building Revolving Loan Fund. There shall be credited to the fund all revenues or other financing sources directed to it by appropriation, any income derived from the investing of amounts credited to the fund and the monies from the repayment of loans from the fund. Monies credited to the fund may be expended by the executive office of energy and environmental affairs, without further appropriation, for loans to provide low-interest financing for new construction or major renovation projects that exceed the energy efficiency requirements of the state building code by 30 per cent.

SECTION 10. Section 61 of chapter 30 of the General Laws is hereby amended by inserting after the first paragraph, as appearing in the 2006 Official Edition, the following paragraph:-

In considering and issuing permits, licenses and other administrative approvals and decisions, the respective agency, department, board commission or authority shall consider reasonably foreseeable climate change impacts such as additional greenhouse gas emissions, and effects such as predicted sea level rise, shall be taken into consideration.

Such consideration shall be limited to regulatory decisions which have a direct and significant impact on greenhouse gas emissions or other climate or environmental impacts and shall be further limited to those agencies, departments, boards, commissions or authorities which have the requisite expertise in climatic and environmental science within their existing personnel. Nothing in this section shall require or authorize the hiring of additional personnel solely for compliance with this section.

SECTION 11. The governor and the secretary of energy and environmental affairs shall, to the extend possible, develop and enter into an agreement among those states participating in the

Regional Greenhouse Gas Initiative, for the purpose of implementing a Low Carbon Fuel Standard , hereinafter referred to as LCFS, for transportation fuels by June 30, 2010; provided, however, that, whenever possible:

1) the LCFS shall be measured on a full fuels cycle basis;

2) the LCFS may be met through market-based methods by which providers exceeding the performance required by a LCFS shall receive credits that may be applied to future obligations or traded to providers not meeting the LCFS;

3) the agreement shall establish a declining standard for greenhouse gas emissions measured in carbon dioxide-equivalent grams per unit of fuel energy sold, sufficient to achieve a 10 per cent reduction in the carbon content of all passenger vehicle fuels sold in participating states by 2020;

4) the states participating in the agreement shall examine the regulations and implementation of a low carbon fuel standard in California and other states and consider ways to coordinate and issue public findings on both such matters, and shall, if applicable, use the life-cycle analysis methods employed by the California Air Resources Board in the agreement to determine the carbon intensity of fuel."

SECTION 11A. (a) The secretary of energy and environmental affairs, in consultation with the climate change adaptation advisory board, shall develop an environmental efficiency disclosure form within 1 year after the effective date of this act setting forth environmentally-efficient building standards, designs and construction materials currently available that would reduce energy and utility consumption in a completed building or structure. The disclosure form shall be updated at least once annually to incorporate the latest energy conservation technologies.

(b) The secretary, in consultation with the climate change adaptation advisory board, shall establish a threshold for the value of the work being performed that would require submission of the disclosure form.

(c) The disclosure form shall be provided to each local building authority and shall be used as part of the building permit process established by the state building code, but no additional fees shall be imposed or collected in connection with the form. No building permit shall issue until the local building authority has received the completed disclosure form, signed until the pains and penalties of perjury by the property owner and any construction supervisor seeking to obtain a building permit.

(d) Within 90 days after the disclosure form and standards have been developed, the board of building regulations and standards shall adopt regulations requiring the submission of the disclosure form as part of the building permit process and shall conform the building code to the provisions of this section.

SECTION 11B. The department of highways shall evaluate highway lighting to explore cost-saving measures, such as replacing existing fixtures with lower-watt, full cut-off fixtures or eliminating lighting altogether, where appropriate, and report to the division of energy resources annually. The first report due under this section shall be submitted not later than August 31, 2008

SECTION 12. The department of environmental protection shall adopt regulations pursuant to section 2 of chapter 21N of the General Laws not later than January 1, 2009.

SECTION 13. The first reports required to be filed pursuant to clauses (2) and (3) of subsection (b) of section 2 of chapter 21N of the General Laws shall be filed not later than April 15, 2009.

SECTION 14. The department of environmental protection shall provide for the voluntary reporting of greenhouse gas emissions to the regional greenhouse gas registry

pursuant to clause (4) of subsection (b) of section 2 of chapter 21N of the General laws not later than July 1, 2009.

SECTION 15. The department shall account for greenhouse gas emissions from electricity consumed in the commonwealth pursuant to clause (5) of subsection (b) of section 2 of chapter 21N of the General Laws not later than July 1, 2009.

SECTION 16. The first statewide greenhouse gas emissions inventory under clause (3) of subsection (c) of section 2 of chapter 21N of the General Laws shall be completed not later than December 31, 2010.

SECTION 17. (a) Not later than July 1, 2009, the department of environmental protection shall, after notice and opportunity for all interested parties to comment at a public hearing, determine what the statewide greenhouse gas emissions level was in 1990 and may reasonably project what that emissions level will be in 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009. This projection shall be referred to as the projected 2020 level.

(b) The secretary of energy and environmental affairs, in consultation with the department, shall adopt statewide greenhouse gas emissions limits according to the following:-

(1) The 2020 statewide greenhouse gas emissions limit shall be 20 per cent below the 1990 level; provided, however, that not later than January 1, 2010, the secretary shall adopt a plan to achieve that level in accordance with section 4 of chapter 21N of the General Laws.

(2) The secretary shall adopt interim 2030 and 2040 statewide greenhouse gas emissio limits accompanied by plans to achieve those limits in accordance with said section 4 of said chapter 21N. The 2030 and 2040 statewide green house gas emissions limits shall maximize t ability of the state to meet the 2050 statewide emissions limit.

(3) The 2050 statewide greenhouse gas emissions limit shall be 80 per cent below the 1990 level. The executive office of energy and environmental affairs shall adopt incremental reduction targets for the years 2010 to 2019, inclusive, and 2021 to 2050, inclusive, that shall maximize the ability of the state to meet the statewide emissions limits.

(b) In furtherance of achieving the statewide greenhouse gas emissions limit by January 1, 2011, the department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions, applicable from January 1, 2012, to December 31, 2020, inclusive, that are sufficient to meet the targets established in this section.

SECTION 18. The secretary of energy and environmental affairs shall adopt a plan for achieving a 2020 statewide greenhouse gas emissions limit pursuant to section 4 of chapter 21N of the General Laws not later than January 1, 2010.

SECTION 19. The executive office of energy and environmental affairs shall publish its first report pursuant to subsection (a) of section 5 of chapter 21N of the General Laws not later than January 1, 2014.

SECTION 19A. Section 11 of chapter 21N of the General Laws shall not apply to existing base-load units that increase output without increasing carbon dioxide emissions.

SECTION 20. The executive office of energy and environmental affairs shall complete the climate change adaptation plan pursuant to section 12 of chapter 21N of the General Laws not later than 18 months after the effective date of this act.

SECTION 21. The low carbon fuel standard for transportation fuels to be adopted pursuant to subsection (h) of section 142K of chapter 111 of the General Laws shall be completed not later than June 30, 2009; provided, however, that regulations establishing a low

carbon fuel standard for all motor vehicle fuels pursuant to said subsection (h) shall be adopted not later than January 1, 2009.

SECTION 22. Nothing in this act shall restrict the executive office from adopting greenhouse gas emissions limits or emissions reduction measures before January 1, 2010, imposing those limits or measures before January 1, 2012 or providing early reduction credit where appropriate, nor shall anything in this act prevent the imposition of more stringent limits on emissions.

SECTION 23. All regulations promulgated pursuant to this act shall be submitted to the clerks of the senate and house of representatives, the house and senate chairs of the joint committee on the environment, natural resources and agriculture, the house and senate chairs of the joint committee on telecommunications, utilities and energy and the chairs of the house and senate committees on ways and means not less than 60 days prior to their promulgation.

HOUSE . . . . . No. 5035

The Commonwealth of Massachusetts

HOUSE OF REPRESENTATIVES, July 30, 2008.

The committee on Ways and Means, to whom was referred the Bill establishing the Global Warming Solutions Act (Senate, No. 2540), reports recommending that the same ought to pass with an amendment striking out all after the enacting clause and inserting in place thereof the text contained in House document numbered 5035.

For the committee,

ROBERT A. DELEO.

Text of an amendment recommended by the committee on Ways and Means to the Senate Bill establishing the Global Warming Solutions Act (Senate, No. 2540). July 30, 2008.

The Commonwealth of Massachusetts

In the Year Two Thousand and Eight.

By striking out all after the enacting clause and inserting in place thereof the following:

"SECTION 1. Section 19 of chapter 6A of the General Laws, as appearing in the 2006 Official Edition, is hereby amended by striking subsection (f) and inserting in place thereof the following:—

(f) The secretary shall collaborate with other state agencies to reduce greenhouse gas emissions in the commonwealth in an effort to achieve the greenhouse gas emission limits established under chapter 21N.

(g) Nothing in this chapter shall be construed as conferring any powers or imposing any duties upon the secretary with respect to the foregoing agencies and authorities except as expressly provided by law.

SECTION 2. Section 1 of chapter 16 of the General Laws, as so appearing, is hereby amended by striking clause (d) and inserting in place thereof the following:—

(d) The commissioner shall collaborate with other state agencies to reduce greenhouse gas emissions in the commonwealth in an effort to achieve the greenhouse gas emission limits established under chapter 21N.

(e) The commissioner may promulgate rules and regulations to effectuate the purposes of this chapter.

SECTION 3. Section 2 of chapter 21A of the General Laws, as so appearing, is hereby amended by inserting after clause (29) the following clause:—

(30) consistent with chapter 21N, oversee state agency efforts to address and diminish the impacts of climate change by coordinating state agency actions to achieve the greenhouse gas emission limits established under chapter 21N of the general laws.

SECTION 4. Section 8 of said chapter 21A of the General Laws, as so appearing, is hereby amended by inserting after the second paragraph the following paragraph:—

The department of environmental protection shall assist in the implementation of chapter 21N.

SECTION 5. Section 16 of said chapter 21A of the General Laws, as so appearing, is hereby amended by inserting at the end thereof the following new paragraph:—

Any person who fails to comply with or otherwise violates chapter 21N shall be liable for a civil administrative penalty not to exceed $25,000 for each day the violation continues.

SECTION 6. The General Laws are hereby amended by inserting after chapter 21M the following chapter:—

Chapter 21N.

Climate Protection and Green Economy Act.

Section 1. As used in this chapter the following terms shall, unless the context clearly requires otherwise, have the following meanings:

"Allowance", an authorization to emit, during a specified year, up to one ton of carbon dioxide equivalent.

"Alternative compliance mechanism", an action undertaken by a greenhouse gas emission source that achieves the equivalent reduction of greenhouse gas emissions over the same time period as a direct emission reduction, that is approved by the department, and that is real, permanent, quantifiable, verifiable, and enforceable.

"Carbon dioxide equivalent", the amount of carbon dioxide by weight that would produce the same global warming impact as a given weight of another greenhouse gas, based on the best available science, including from the Intergovernmental Panel on Climate Change.

"Direct emissions", emissions from sources that are owned or operated, in whole or in part, by an entity or facility including, but not limited to, emissions from factory stacks, manufacturing processes and vents, and company owned or leased motor vehicles.

"Department", the department of environmental protection.

"Direct emission reduction", a greenhouse gas emission reduction action made by a greenhouse gas emission source at that source.

"Emission", emission of a greenhouse gas into the air.

"Emissions reduction measure", programs, measures, standards, and alternative compliance mechanisms authorized pursuant to this chapter, applicable to sources or categories of sources that are designed to reduce emissions of greenhouse gases.

"Entity", a person that owns or operates, in whole or in part, a source of greenhouse gas emissions from a generator of electricity or a commercial or industrial site including, but not be limited to, a transportation fleet.

"Executive office", the executive office of energy and environmental affairs.

"Facility", a building, structure or installation located on any one or more contiguous or adjacent properties of an entity.

"Greenhouse gas", any chemical or physical substance that is emitted into the air and that the department may reasonably anticipate will cause or contribute to climate change including, but not limited to, carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons and sulfur hexafluoride.

"Greenhouse gas emissions limit", an authorization, during a specified year, to emit up to a level of greenhouse gases specified by the secretary, expressed in tons of carbon dioxide equivalents.

"Greenhouse gas emission source" or "source", any source, or category of sources, of greenhouse gas emissions whose emissions are at a level of significance, as determined by the secretary that its participation in the program established under this chapter will enable the executive office to effectively reduce greenhouse gas emissions and monitor compliance with the statewide greenhouse gas emissions limit.

"Indirect emissions", emissions associated with the consumption of purchased electricity, steam and heating or cooling by an entity or facility.

"Leakage", the offset of a reduction in emissions of greenhouse gases within the commonwealth by an increase in emissions of greenhouse gases outside the commonwealth.

"Market-based compliance mechanism", (i) a system of market-based declining annual aggregate emissions limitations for sources or categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking, credits, and other transactions, governed by rules and protocols established by secretary or the Regional Greenhouse Gas Initiative, that result in the same greenhouse gas emission reduction, over the same time period, as direct compliance with a greenhouse gas emission limit or emission reduction measure adopted by executive office pursuant to this chapter.

"Person", any agency or political subdivision of the commonwealth, any state, public or private corporation or authority, individual, trust firm, joint stock company, partnership, association or other entity or any group thereof or any officer, employee or agent thereof.

"Secretary", the secretary of the executive office of energy and environmental affairs.

"Statewide greenhouse gas emissions", the total annual emissions of greenhouse gases in the commonwealth, including all emissions of greenhouse gases from the generation of electricity delivered to and consumed in the commonwealth, accounting for transmission and distribution line losses, whether the electricity is generated in state or imported; provided, however, that statewide emissions shall be expressed in tons of carbon dioxide equivalents.

"Statewide greenhouse gas emissions limit" or "statewide emissions limit", the maximum allowable level of statewide greenhouse gas emissions in a given year, as determined by the secretary.

Section 2. (a) The department shall monitor and regulate emissions of greenhouse gases with the goal of reducing those emissions. The department shall adopt regulations to require the reporting and verification of statewide greenhouse gas emissions and to monitor and enforce compliance with this chapter. The regulations shall: (1) establish a regional greenhouse gas registry and reporting system for greenhouse gas emission sources; provided,

however, that in establishing the greenhouse gas registry and reporting system, the department may collaborate with other states or a regional consortium; (2) annually require the owner or operator of any facility that is required to report air emissions data to the department pursuant to Title V of the federal Clean Air Act and that has stationary emissions sources that emit greenhouse gases to report annually to the regional registry direct stack emissions of greenhouse gases from such sources; (3) require the owner or operator of any facility that has stationary emissions sources that emit greenhouse gases in excess of 5,000 tons of greenhouse gases per year in carbon dioxide equivalents to report annually to the regional registry direct emissions of greenhouse gases from such sources; provided, however, that the department shall develop a simplified estimation form to assist facilities in determining who shall report emissions and shall consider, on an annual basis, requiring the expansion of reporting to the regional greenhouse gas registry; (4) provide for the voluntary reporting of emissions of greenhouse gases to the regional greenhouse gas registry by entities and facilities that are not required to submit information pursuant to clauses (2) and (3) of this section; provided, however, that the greenhouse gas emissions reported shall be of a type and format that the regional greenhouse gas registry can accommodate; (5) account for greenhouse gas emissions from all electricity consumed in the commonwealth, including transmission and distribution line losses from electricity generated within the commonwealth or imported from outside the commonwealth; provided, however, that this requirement shall apply to all retail sellers of electricity, including electric utilities, municipal electric departments, and municipal light boards as defined in section 1 of chapter 164A; (6) ensure rigorous and consistent accounting of emissions, and provide reporting tools and formats to ensure collection of necessary data; and (7) ensure that greenhouse gas emission sources maintain comprehensive records of all reported greenhouse gas emissions.

(b) The department shall: (1) consult with the secretary on periodic review and updates of emission reporting requirements, as necessary; and (2) review existing and proposed state, federal and international greenhouse gas emission reporting programs and make reasonable efforts to promote consistency among the programs established pursuant to this chapter and other programs, and to streamline reporting requirements on greenhouse gas emission sources.

(c) The department shall triennially publish a state greenhouse gas emissions inventory that includes comprehensive estimates of the quantity of greenhouse gas emissions in the state for the last 3 years in which data is available.

Section 3. (a) The department shall pursuant to chapter 30A determine the statewide greenhouse gas emissions level in calendar year 1990 and reasonably project what the emissions level will be in calendar year 2020 if no measures are imposed to lower emissions other than those formally adopted and implemented as of January 1, 2009. This projection shall hereafter be referred to as the projected 2020 business as usual level.

(b) The secretary shall, in consultation with the department and with the department of energy resources, adopt the following statewide greenhouse gas emissions limits: (1) a 2020 statewide emission limit and a plan to achieve that limit pursuant to section 4; (2) an interim 2030 emission limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2030 interim emission limits shall maximize the ability of the commonwealth to meet the 2050 emission limit; (3) an interim 2040 emission limit accompanied by plans to achieve this limit in accordance with said section 4; provided, however, that the 2040 interim emission limit shall maximize the ability of the commonwealth to meet the 2050 emission limit; and (4)a 2050 statewide emission limit that is at least 80 percent below the 1990 level.

(c) Emissions levels and limits associated with the electric sector shall be established by the executive office and the department, in consultation with the department of energy resources, based on consumption and purchases of electricity from the regional electric grid, taking into account the Regional Greenhouse Gas Initiative and the renewable portfolio standard.

(d) The department shall promulgate regulations establishing a desired level of declining annual aggregate emission limits for sources or categories of sources that emit greenhouse gas emissions.

Section 4. (a) The secretary shall adopt the 2020 statewide emission limit pursuant to subsection (b) of section 3 which shall

be between 10 per cent and 25 per cent below the 1990 emission level and a plan for achieving said reduction. The secretary shall consult with all state agencies and regional authorities with jurisdiction over sources of greenhouse gases on all elements of the emission limit and plan that pertain to energy related matters including, but not limited to, electrical generation, load based-standards or requirements, the provision of reliable and affordable electrical service, and statewide fuel supplies, to ensure the greenhouse gas emissions reduction activities to be adopted and implemented by the secretary are complementary, non-duplicative, and may be implemented in an efficient and cost-effective manner. The 2020 statewide emission limit and implementation plan shall comply with this section.

(b) The secretary shall analyze the feasibility of a wide array of measures to reduce to comply with the emission limit establish in subsection (a). Such measures shall include, but shall not be limited to, the electric generating facility aggregate limit established pursuant to section 12, direct emission reduction measures from other sectors of the economy, alternative compliance mechanisms, market-based compliance mechanisms, and potential monetary and non-monetary incentives for sources and categories of sources that the secretary finds are necessary or desirable to facilitate the achievement of reductions of greenhouse gas emissions limits.

(c) The secretary shall consider all relevant information pertaining to greenhouse gas emissions reduction goals and programs in other states and nations.

(d) The secretary shall evaluate the total potential costs and total potential economic and non-economic benefits of various reduction measures to the economy of the commonwealth, environment, and public health, using the best available economic models, emission estimation techniques, and other scientific methods.

(e) The secretary shall take into account the relative contribution of each source or source category to statewide greenhouse gas emissions, and shall recommend a de minimis threshold of greenhouse gas emissions below which emission reduction requirements will not apply.

(f) The secretary shall identify opportunities for emission reductions measures from all verifiable and enforceable voluntary actions.

(g) The secretary shall conduct a series of public hearings on the proposed 2020 emission limit and implementing plan. The secretary shall conduct a portion of these workshops in regions of the state that have the most significant exposure to air pollutants, including, but not limited to, communities with minority populations, communities with low-income populations, or both.

(h) The secretary shall update its plan for achieving the maximum technologically feasible reductions of greenhouse gas emissions at least once every 5 years, including the plans to implement the 2030, 2040 and 2050 statewide emission limits.

Section 5. The secretary shall monitor the implementation of regulations relative to climate change and shall, every 5 years, publish a report which shall include recommendations regarding such implementation. The report shall include without limitation: (i) whether regulations or other measures undertaken, including distribution of emissions allowances, are equitable and minimize costs and maximize the total benefits to the commonwealth, and encourage early action to reduce greenhouse gas emissions; (ii) whether activities undertaken to comply with state regulations and efforts disproportionately impact low-income communities; (iii) whether entities that have voluntarily reduced their greenhouse gas emissions prior to the implementation of this chapter receive appropriate credit for early voluntary reductions; (iv) whether activities undertaken pursuant to the regulations complement, and do not interfere with, efforts to achieve and maintain federal and state ambient air quality standards and reduce toxic air contaminant emissions; (v) consider overall societal benefits, including reductions in other air pollutants, diversification of energy sources, and other benefits to the economy, environment, and public health; (vi) whether state actions minimize the administrative burden of implementing and complying with these regulations; (vii) whether state actions minimize leakage; (viii) consider the significance of the contribution of each source or category of sources to statewide emissions of greenhouse gases; (ix) whether greenhouse gas emission reductions achieved are real, permanent, quantifiable, verifiable, and enforceable; and

(x) recommendations for future policy action. The report shall be filed with the clerk of the house or representative, the clerk of the senate, the chairs of the house and senate committees on ways and means, the chairs of the joint committee on telecommunications, utilities and energy and the chairs of the joint committee on the environment, natural resources and agriculture.

Section 6. In implementing its plan for statewide greenhouse gas emissions limits, the commonwealth and its agencies shall promulgate regulations that reduce energy use, increase efficiency and encourage renewable sources of energy in the sectors of energy generation, buildings, and transportation.

Section 7. (a) The secretary, in consultation with the executive office of administration and finance, may consider the use of market-based compliance mechanisms to address climate change concerns; provided, however, that prior to the use of any market-based compliance mechanism, to the extent feasible and in furtherance of achieving the statewide greenhouse gas emissions limit, the secretary shall: (1) consider the potential for direct, indirect, and cumulative emission impacts from these mechanisms, including localized impacts in communities that are already adversely impacted by air pollution; (2) design any market-based compliance mechanism to prevent any increase in the emissions of toxic air contaminants or criteria air pollutants, with particular attention paid to emissions of nitrous oxide, sulfur dioxide, and mercury; and (3) maximize additional environmental and economic benefits for the commonwealth, as appropriate.

(b) The secretary may adopt regulations governing how market-based compliance mechanisms may be used by regulated entities subject to greenhouse gas emission limits and mandatory emission reporting requirements to achieve compliance with their greenhouse gas emissions limits.

(c) The executive office and the department may work with the participating Regional Greenhouse Gas Initiative states, and other interested states and Canadian Provinces to develop a plan to expand market-based compliance mechanisms such as the Regional Greenhouse Gas Initiative to other sources and sectors necessary or desirable to facilitate the achievement of the greenhouse gas emissions limits.

(d) The executive office shall monitor compliance with and enforce any rule, regulation, order, emission limitation, emissions

reduction measure, or market-based compliance mechanism adopted by the executive office or department pursuant to this chapter. Upon a violation of any rule, regulation, order, emission limitation, emissions reduction measure, or other measure adopted by the executive office pursuant to this chapter, the department may impose a civil administrative penalty pursuant to section 16 of chapter 21A.

Section 8. The secretary shall convene an advisory committee to advise the executive office in overseeing the greenhouse emission reduction measures of this chapter and elsewhere in general or special law. The advisory committee shall be comprised of representatives from the following sectors: commercial, industrial and manufacturing; transportation; low income consumers; energy generation and distribution; environmental protection; energy efficiency and renewable energy; local government; and academic institutions.

Section 9. Nothing in this chapter shall affect the authority of the public utility commission.

Nothing in this chapter shall affect the obligation of an electrical utility to provide customers with safe and reliable electric service.

Nothing in this chapter shall preclude, prohibit, or restrict the construction of any new facility or the expansion of an existing facility subject to regulation under this chapter, if all applicable requirements are met and the facility is in compliance with regulations adopted pursuant to this chapter.

SECTION 7. Chapter 30 of the General Laws, as appearing in the 2006 official edition, is hereby amended by inserting after section 39S the following sections:

SECTION 8. Section 61 of said chapter 30 of the General Laws, as so appearing, is hereby amended by inserting after the first paragraph the following paragraph:—

In connection with the consideration and issuance of permits, licenses and other administrative approvals and decisions, reasonably foreseeable climate change impacts, such as additional greenhouse gas emissions, and effects, such as predicted sea level rise, shall be taken into consideration.

SECTION 9. Notwithstanding any general or special law to the contrary, nothing in this act shall restrict the secretary from adopting greenhouse gas emission limits or emission reduction measures prior to January 1, 2011, imposing those limits or measures prior to January 1, 2012, or providing early reduction credit where appropriate, nor shall this act be seen as preventing any more stringent limits on emissions.

SECTION 10. Notwithstanding any general or special law to the contrary, the Executive Office of Energy and Environmental Affairs shall promulgate regulations pursuant to section 2 of chapter 21N of the General Laws no later than January 1, 2009.

SECTION 11. Notwithstanding any general or special law to the contrary, the requirements of clauses (2) and (3) of subsection (a) of section 2 of chapter 21N of the General Laws shall take effect no later than April 15, 2009.

SECTION 12. Notwithstanding any general or special law to the contrary, the requirements of clauses (4) and (5) of subsection (a) of section 2 of chapter 21N of the General Laws shall take effect no later than July 1, 2009.

SECTION 13. Notwithstanding any general or special law to the contrary, subsection (c) of section 2 of chapter 21N of the General Laws shall take effect no later than December 31, 2010.

SECTION 14. Notwithstanding any general or special law to the contrary, the requirements of subsection (a) of section 3 of chapter 21N of the General Laws shall take effect no later than July 1, 2009.

SECTION 15. Notwithstanding any general or special law to the contrary, the requirements of clause (1) of subsection (b) of section 3 of chapter 21N of the General Laws shall take effect no later than January 1, 2011.

SECTION 16. Notwithstanding any general or special law to the contrary, the requirements of subsection (d) of section 3 of

chapter 21N of the General Laws shall take effect no later than January 1, 2012.

SECTION 17. Notwithstanding any general or special law to the contrary, the regulations promulgated pursuant to subsection (d) of section (3), and any amendments thereto, shall be effective from January 1, 2013 through December 31, 2020, inclusive.

SECTION 18. Notwithstanding any general or special law to the contrary, the requirements of subsection (a) of section 4 of chapter 21N of the General Laws shall take effect no later than January 1, 2011.

SECTION 19. Notwithstanding any general or special law to the contrary, the Executive Office of Energy and Environmental Affairs shall file the report required pursuant to section 5 of chapter 21N of the General Laws no later than January 1, 2014.

SECTION 20. Notwithstanding any general or special law to the contrary, the secretary shall convene an advisory committee to analyze strategies for adapting to the predicted impacts of climate change in the commonwealth. The advisory committee shall be chaired by the secretary, or his designee, and comprised of representatives with expertise in the following areas: transportation and built infrastructure; commercial, industrial and manufacturing activities; low income consumers; energy generation and distribution; land conservation; water supply and quality; recreation; ecosystems dynamics; coastal zone and oceans; rivers and wetlands; and local government.

The committee shall file a report of its finding and recommendations regarding strategies for adapting to climate change no later than December 31, 2009.