

**H.832 – “2050 Roadmap Bill”**

***An Act to create a 2050 roadmap for a clean and thriving Commonwealth.***

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

1           SECTION 1. Section 1 of chapter 21N is hereby amended by striking out lines 17 through 20, and  
2 inserting in place thereof the following:-

3           “Direct emissions”, emissions from sources that are owned or operated, in whole or in part, by any  
4 person, entity, or facility including, but not limited to, emissions from any transportation vehicle, any  
5 building or structure, or any residential, commercial, institutional, industrial or manufacturing process.

6           SECTION 2. Section 1 of chapter 21N is hereby amended by adding after line XX:-

7           “Greenhouse gas-emitting priority,” matter that emits or is capable of emitting a greenhouse gas when  
8 burned including, without exception, natural gas, petroleum, coal, and any solid, liquid or gaseous fuel  
9 derived therefrom as well as all others identified as such by the department.

10           SECTION 3. Section 1 of chapter 21N is hereby amended by striking out lines XX through YY, and  
11 inserting in place thereof the following:-

12           “Indirect emissions”, emissions associated with the consumption of any greenhouse gas-emitting  
13 priority or purchased electricity, steam and heating or cooling by an entity or facility.

14           SECTION 4. Section 1 of chapter 21N is hereby amended by striking out lines XX through YY, and  
15 inserting in place thereof the following:-

16           “Market-based compliance mechanism”, any form of priced compliance system imposed on sources or  
17 categories of sources, or pricing mechanism imposed directly on greenhouse gas-emitting priorities or  
18 on their the distribution or sale, designed to reduce emissions as required by this act including, but not  
19 limited to (i) a system of market-based declining annual aggregate emissions limitations for sources or  
20 categories of sources that emit greenhouse gases; or (ii) greenhouse gas emissions exchanges, banking,  
21 credits and other transactions governed by rules and protocols established by the secretary or a regional

**Commented [A1]:** Sections 1 – 5 amend/add to existing GWSA definitions to clarify express authority for EEA/DEP to directly regulate transportation and heating fuels for the purpose of ensuring GWSA-required emissions reductions. Expands the definition of “market-based compliance mechanisms” to include any priced compliance system including a direct carbon price/tax/fee.

**Commented [A2]:** More detail than current definition (below) and specifically including transportation buildings and all industrial processes.

Current:

“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.”

**Commented [A3]:** Adds new definition essentially for fossil fuels; valuable especially for carbon pricing related to fuels.

**Commented [A4]:** Adds “GHG priorities” to existing definition.

**Commented [A5]:** Add broadening language to allow various potential forms of carbon pricing.

22 program that result in the same greenhouse gas emissions reduction, over the same time period, as  
23 direct compliance with a greenhouse gas emissions limit or emission reduction measure adopted by the  
24 executive office pursuant to this chapter; or (iii) a system of charges or exactions imposed in order to  
25 reduce statewide greenhouse gas emissions in whole or in part.

26 SECTION 5. Subsection (a) of section 2 of chapter 21N of the General Laws, as appearing in the  
27 2016 Official Edition, is hereby amended by striking out its first sentence and inserting in place thereof  
28 the following:-

29 The department shall monitor and regulate greenhouse gas-emitting priorities and direct and indirect  
30 emissions of greenhouse gases with the goal of reducing those emissions in order to achieve greenhouse  
31 gas emissions limits established by and pursuant to chapters 21N and 21N1/2.

**Commented [A6]:** Adds express authorization and requirement for DEP to monitor and regulate GHG priorities and indirect emissions as needed to meet overall GWSA emissions reductions.

32 SECTION 6. Subpart (4) of subsection (b) of section 3 of chapter 21N of the General Laws, as  
33 appearing in the 2016 Official Edition, is hereby amended by striking it out and inserting in place thereof  
34 the following:-

35 (4) a 2050 statewide emissions limit that achieves at least net zero statewide greenhouse gas emissions.

**Commented [A7]:** Updates GWSA from previous IPCC global emissions reduction target based on limiting global warming to 2deg C by 2050 to Oct. 2018-revised IPCC target based on need to limit warming by 2050 to 1.5deg C.

Current:

“(4) a 2050 statewide emissions limit that is at least 80 per cent below the 1990 level.”

36 SECTION 7. Chapter 298 of the Acts of 2008 is hereby amended by striking out section 16 in its  
37 entirety.

**Commented [A8]:** Strikes the “Section 3(d) sunset” clause to avoid confusion and unnecessary cost regarding the long-term viability of the 310 CMR 7.74 in-state power plant emissions cap unanimously upheld by the Supreme Judicial Court.

Current:

“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”

38 SECTION 8. The General Laws are hereby amended by inserting after chapter 21N the following  
39 chapter: Chapter 21N1/2.

40 GLOBAL WARMING SOLUTIONS IMPLEMENTATION ACT.

41 Section 1. Unless otherwise defined herein, terms defined in section 1 of chapter 21N have the  
42 same meaning when used in this chapter.

43 Section 2. No later than December 31, 2020, the secretary shall conduct and publish the results  
44 of detailed, quantitative modeling and analysis of the commonwealth’s energy economy and emissions  
45 in their regional context, to include the regional electric grid, sufficient to identify multiple technically  
46 and economically feasible pathways of reducing statewide emissions consistent with the 2050 emissions  
47 limit required by section 3(b) of chapter 21N. Such modeling and analysis shall employ back-casting  
48 methodology, shall be comparable to that conducted by the European Union in support of its Roadmap  
49 2050 effort, may be conducted in conjunction with other states or regional entities as part of an analysis  
50 of reducing regional emissions in 2050 to a level consistent with those required by chapter 21N for the  
51 commonwealth, and shall include or be accompanied by analysis quantitatively assessing for each  
52 pathway economic, environmental, and public health impacts particularly those that may benefit or  
53 burden low or moderate income people or any environmental justice populations. The secretary shall  
54 publish the results of the modeling and analysis required by this section, and shall also make available  
55 for public inspection and use the model, all model assumptions, and all input and output data.

56 Section 3. In conjunction with the modeling and analysis required in section 2, and in any case  
57 no later than December 31, 2020, the secretary shall adopt the interim 2030 and 2040 emissions limits  
58 consistent with that analysis and as required by section 3(b) of chapter 21N. The interim 2030 emissions  
59 limit shall be at least 50 per cent below the 1990 level, and the interim 2040 emissions limit shall be at  
60 least 75 per cent below the 1990 level. In setting the interim 2030 and 2040 emissions limits, the  
61 secretary shall comply with the second sentence of subsection (a) of section 4 chapter 21N and with  
62 subsections (b), (c), (d), (e), (f) and (g) of section 4 chapter 21N.

63 Section 4. After conducting the modeling and analysis required in section 2, and in any case no  
64 later than December 31, 2021, the secretary shall issue a 2050 emissions reduction roadmap plan in lieu  
65 of the plan update required by section 4(h) of chapter 21N. The 2050 emissions reduction roadmap plan

**Commented [A9]:** Requires 2050 backcast roadmap analysis; necessary to develop a viable 2050 roadmap plan (see Sec. 4 below).

**Commented [A10]:** “People”-centered protections particularly important going forward (transportation and homes/buildings)!

See also Sec. 6 below.

**Commented [A11]:** Require 2030 and 2040 limits to be set together by end of 2020 at levels supported by 2050 Roadmap Plan/Analysis and in any case no less than “straight line” from 25% in 2020 to 80% on 2050.

**Commented [A12]:** Straight line minimum to achieve “net-zero by 2050” per Oct. 2018-revised IPCC target based on need to limit warming by 2050 to 1.5deg C.

**Commented [A13]:** Important required elements of/boundaries for analysis – EEA shall:  
(b) analyze the feasibility of measures to include market-based compliance measures;  
(c) consider all relevant information from other states and nations;  
(d) evaluate the total potential costs and economic and noneconomic benefits of various reduction measures to the economy, environment and public health;  
(e) recommend minimum emissions level for exemption from regulation;  
(f) identify opportunities from voluntary reduction efforts;  
(g) conduct public hearings on the proposed emission limits and implementing plan.

**Commented [A14]:** Requires new 2050-focused roadmap plan (versus current short-term, 5-yr. outlook Clean Energy & Climate Plan).

To be updated every 2.5 years.

66 shall describe in detail the commonwealth’s plan to achieve the 2050 emissions limit required by section  
67 3(b) of chapter 21N, as well as the interim 2030 and 2040 emissions limits, by means of one or more  
68 technically and economically feasible pathways selected to reduce statewide emissions. The 2050  
69 emissions reduction roadmap plan must address all sources or categories of sources that emit  
70 greenhouse gas emissions and indicate for each how, to what extent, and when the commonwealth will  
71 act to reduce their emissions as part of a plan achieve the 2050 emissions limit required by section 3(b)  
72 of chapter 21N. In developing the 2050 emissions reduction roadmap plan, the secretary shall comply  
73 with section 4 of chapter 21N as described in section 3. The secretary shall update the 2050 emissions  
74 reduction roadmap plan at least once every thirty months. This section 4 reporting requirement  
75 supersedes and replaces that required by subsection (h) of section 4 of chapter 21N.

**Commented [A15]:** Requires analysis of and plan for all sources/sectors of GHG emissions.

76 **Section 5.** Separate from the plan required by section 4, the secretary shall after conducting the  
77 modeling and analysis required in section 2, and no later than December 31, 2021, issue the report  
78 required by section 5 of chapter 21N, hereinafter referred to as the Global Warming Solutions Act  
79 implementation assessment report. The report must quantitatively assess the effectiveness of all  
80 regulations and programs designed to reduce greenhouse gas emissions directly or indirectly and must  
81 also address all elements required by section 5 of chapter 21N, except that the secretary shall update  
82 and file the Global Warming Solutions Act implementation assessment report annually.

**Commented [A16]:** Clarifies obligation/streamlines administrative burden by replacing existing reporting requirement.

**Commented [A17]:** Requires new annual report on “how are we doing” – an assessment of implementation programs and regulations.

This references 21N s. 5 to retain the valuable public hearing elements referenced here.

83 **Section 6.** No later than December 31, 2022, the commonwealth and its agencies shall  
84 promulgate regulations regarding all sources or categories of sources and all greenhouse gas emitting  
85 priorities sufficient to achieve the 2050 emissions limit required by section 3(b) of chapter 21N. The  
86 development of such regulations shall be coordinated by the secretary, and shall be consistent with the  
87 modeling and analysis required in section 2, with achievement of the adopted interim 2030 and 2040  
88 emissions limits as required by section 3, and with the plan required by section 4, and shall be designed

**Commented [A18]:** Requirement for new comprehensive regulations to implement the new 2050 roadmap plan – important because there is no specific requirement for new action, post-2020 (other than to achieve the 2050 limit in 32 years) in the GWSA.

This would also require for the first time that the regulations address all sectors and all sources needed to achieve 2050.

89 to ensure that the Commonwealth achieves its required emissions reductions equitably and in a manner  
90 that protects, and where feasible improves the condition of, low and moderate income persons and  
91 environmental justice populations while creating, where feasible, additional employment and economic  
92 development in the commonwealth. The regulations required by this section 6 may include any market-  
93 based compliance mechanism or other carbon pricing for any greenhouse gas or greenhouse gas-  
94 emitting priority that the Secretary has determined to be likely to contribute to the cost-effective  
95 reduction of direct or indirect emissions as required by chapters 21N and 21N1/2.

96 Section 7. No later than six months after this chapter is enacted, the department may, in  
97 consultation with the secretary, impose a schedule of fees on regulated sources of greenhouse gas  
98 emissions sufficient to recover, for each fiscal year, the costs of implementation of chapters 21N and  
99 21N1/2. Revenues collected pursuant to this section shall be deposited in a Global Warming Solutions  
100 Act Implementation Fund for use, as directed by the legislature or the secretary, solely for the purpose  
101 of carrying out chapters 21N and 21N1/2.

102 Section 8. All municipal electric departments and municipal light boards as defined in section 1  
103 of chapter 164A are subject to chapters 21N and 21N1/2 and shall be included in all regulations and  
104 programs associated therewith unless the secretary determines their inclusion will not contribute to the  
105 commonwealth’s achievement of the greenhouse gas emissions limits established by those chapters.  
106 When including municipal electric departments and municipal light boards in any such regulation or  
107 program, the secretary shall consult with the municipal electric departments and municipal light boards  
108 and shall take into account, where relevant, their size and structure as well as their existing programs,  
109 contractual obligations and asset ownership. In lieu of, or in conjunction with, the inclusion of municipal  
110 electric departments and municipal light boards in any such regulation or program, the secretary may  
111 order or allow a municipal electric department or municipal light board to submit for the secretary’s

**Commented [A19]:** “People”-centered protections particularly important going forward (transportation and homes/buildings)!

See also Sec. 6 below.

**Commented [A20]:** Additional “people”-centered protections for development of regulations.

**Commented [A21]:** Allows but does not require carbon pricing in any form.

**Commented [A22]:** Requires collection of fees to fund implementation work by the Executive.

More information here on CA’s version this is modeled on, the [AB 32 Cost of Implementation Fee](#).

**Commented [A23]:** Clarifies that the GWSA applies to everyone in the Commonwealth.

Important that entire state is working toward the same goal which is economy-wide emissions reductions, not just a certain percentage of clean or renewable electricity. Utilities – and MLPs – will likely be needed to foster/enable EVs and EV charging, as well as shifts in home heating (from oil and gas to renewable or non-emitting).

**Commented [A24]:** Before including MLPs in any emissions reduction program, EEA must take their special situation (relative to the large investor-owned utilities) into account.

112 review and approval, pursuant to chapter 30A of the General Laws, a comprehensive plan detailing that  
113 department or board’s plan to achieve or exceed the greenhouse gas emissions limits established by  
114 chapters 21N and 21N1/2. The secretary shall enforce any such plan so approved and may revoke  
115 approval for non-compliance.

**Commented [A25]:** EEA may allow MLPs (individually or across the board) to develop their own GWSA-compliance plan, that if approved by EEA becomes an enforceable (by EEA) obligation.