



*The Commonwealth of Massachusetts*  
*Executive Office of Energy and Environmental Affairs*  
*100 Cambridge Street, Suite 900*  
*Boston, MA 02114*

Charles D. Baker  
GOVERNOR

Karyn E. Polito  
LIEUTENANT GOVERNOR

Kathleen A. Theoharides  
SECRETARY

Tel: (617) 626-1000  
Fax: (617) 626-1181  
<http://www.mass.gov/eea>

December 30, 2020

DETERMINATION OF STATEWIDE EMISSIONS LIMIT FOR 2030

Pursuant to the Global Warming Solutions Act (GWSA),<sup>1</sup> and having consulted with the Department of Environmental Protection (MassDEP) and the Department of Energy Resources (DOER), **I hereby establish a statewide greenhouse gas (GHG) emissions limit of 45% below the 1990 GHG emissions level for the year 2030.** As detailed below, this legally binding statewide emissions limit is consistent with the directives of the Massachusetts legislature as embodied in the GWSA. In a separate report entitled Massachusetts Clean Energy and Climate Plan (CECP) for 2030, also issued today pursuant to Chapter 21N,<sup>2</sup> I have outlined a portfolio of policies and actions designed to achieve the 2030 emissions limit established herein.

Background

In August 2008, Massachusetts became one of the first states in the nation to create a comprehensive legal and regulatory emissions reduction framework for the purpose of addressing climate change. Referencing the best-available science, including that from the Intergovernmental Panel on Climate Change (IPCC), the GWSA required, among other things, the adoption of a 2020 statewide GHG emissions limit “between 10 per cent and 25 per cent below the 1990 emissions level” and the subsequent adoption of interim emissions limits for 2030 and 2040, as well as a 2050 emissions limit for the Commonwealth that is “at least 80 per cent below the 1990 level.”<sup>3</sup>

On December 28, 2010, Secretary of Energy and Environmental Affairs Ian A. Bowles established the Commonwealth’s initial, legally binding interim statewide GHG emissions limit as 25% below the 1990 GHG level for 2020, having determined 25% to be a responsible and

<sup>1</sup> Chapter 298 of the Acts of 2008, and as codified at M.G.L. c. 21N (Chapter 21N).

<sup>2</sup> To enable full public engagement regarding the policies and actions described therein, the CECP for 2030 will be further updated no later than April 30, 2021.

<sup>3</sup> Chapter 21N § 3(b) & 4(a); GWSA § 15.

achievable emissions reduction level that would, among other things, maximize opportunities to realize cost savings, increase energy independence, and promote growth in clean energy jobs in Massachusetts.<sup>4</sup>

On January 22, 2020, following a determination by the IPCC that global GHG emissions reductions of at least net zero in 2050 were required to stabilize global atmospheric CO<sub>2</sub> concentrations,<sup>5</sup> Governor Baker announced that the Commonwealth would work to achieve net zero GHG emissions in 2050. Consistent with that commitment and after independently assessing the technical and economic viability of achieving net zero statewide GHG emissions in 2050 and receiving statewide public comment, I issued a determination letter on April 22, 2020, establishing Net Zero<sup>6</sup> as the Commonwealth's 2050 statewide emissions limit.

Since at least April 2019, the Executive Office of Energy and Environmental Affairs (EEA), in consultation with MassDEP, DOER and other Commonwealth agencies, has engaged in a planning process (2050 Decarbonization Roadmap) supported by quantitative pathway scenario analysis to identify technically and economically viable strategies for Massachusetts to reduce its GHG emissions sufficiently to achieve Net Zero in 2050.

In conjunction with that long-range analytical effort, and with the sustained involvement and advice of the GWSA Implementation Advisory Committee, EEA and its agencies have examined a range of emissions reduction programs and policies consistent with emissions reduction levels in 2030 that are consistent with, and supportive of, the Commonwealth's achievement of Net Zero in 2050. Specifically, EEA examined the design, implementation, and impacts of various policies and programs in order to assess the feasibility, cost, and health effects associated with an emissions reductions limit ranging from as little as 40% to as much as 50% below 1990 levels for 2030.

### Statutory Mandate

The GWSA “was passed to address the grave threats that climate change poses to the health, economy, and natural resources of the Commonwealth. The act is designed to make Massachusetts a national, and even international, leader in the efforts to reduce the greenhouse gas emissions that cause climate change.”<sup>7</sup> The GWSA designates the Secretary of Energy and Environmental Affairs (Secretary) and MassDEP as the entities primarily responsible for implementing the act.

The GWSA requires the Secretary, in consultation with MassDEP and the DOER, to adopt separate statewide GHG emissions limits for 2020, 2030, 2040 and 2050. The GWSA requires that the 2030 and 2040 interim emissions limits must maximize the ability of the Commonwealth to meet the 2050 emissions limit.

---

<sup>4</sup> EEA, *Determination of Greenhouse Gas Emissions Limit for 2020* (Dec. 28, 2010).

<sup>5</sup> IPCC, *Special Report on Global Warming of 1.5°C* (Oct. 2018), Chap. 2 (“Mitigation Pathways Compatible with 1.5°C in the Context of Sustainable Development”).

<sup>6</sup> Defined as “A level of statewide greenhouse gas emissions that is equal in quantity to the amount of carbon dioxide or its equivalent that is removed from the atmosphere and stored annually by, or attributable to, the Commonwealth; provided, however, that in no event shall the level of emissions be greater than a level that is 85 percent below the 1990 level.”

<sup>7</sup> *New England Power Generators Assoc. v. Dept. of Env't'l Prot.*, 480 Mass. 398, 399 (2018).

## Findings of Fact

Based on my expertise and experience as Secretary; the findings and recommendations in the CECP for 2020, as updated; the findings and recommendations in the 2018 GWSA 10-Year Progress Report; the findings and recommendations of 2050 Decarbonization Roadmap study; and analysis conducted in support of the CECP for 2030, I make the following findings:

- Multiple, technically viable pathways exist by which the Commonwealth can economically and equitably achieve Net Zero in 2050.
- Achieving Net Zero in 2050 will result in a cleaner, healthier environment with the most dramatic improvement in air quality and beneficial health outcomes accruing to residents in areas with high concentration of elderly, at-risk, and Environmental Justice populations.
- More than 50% of GHG emissions in the Commonwealth that must be reduced to achieve Net Zero in 2050 are produced by light-duty passenger vehicles and residential and business space and water heating.
- About 5 million light-duty passenger cars and trucks generate about 60% of statewide transportation sector emissions and approximately 3 million residential households generate about 60% of statewide building sector emissions.
- The timing of end-of-life “stock turn-over” for existing, GHG-emitting equipment, assets, and facilities largely determines the demand and capital available for replacement, particularly for privately-owned passenger vehicles and residential and business buildings.
- Maximally leveraging individual “stock turn-over” replacement opportunities is central to ensuring a cost-effective transition to Net Zero.
- Minimizing the economic impact of emissions compliance is likely critical for maintaining public support for economy-wide deep decarbonization.
- Emissions reductions of at least 40% below the 1990 level in 2030 are consistent with the Commonwealth’s technical ability to achieve Net Zero in 2050.
- During the 2020s, simultaneous transformations of and across a range of entities, programs, and policies controlled variously by federal, regional, and state authorities must take place for the Commonwealth to be able to achieve Net Zero in 2050.
- The ongoing COVID-19 pandemic is a public health emergency and economic crisis of historic scope, scale, duration, and impact, the full effects of which are currently unknown.

- Requiring emissions reductions in excess of 45% below the 1990 level in 2030 risks imposing undue expense and unnecessary economic impact on Commonwealth households and businesses without materially increasing the Commonwealth's ability to achieve Net Zero.
- The CECP for 2030 identifies an ambitious but viable plan to achieve emissions reductions of at least 45% below the 1990 level for 2030 that balances targeted emissions reductions among and between sectors based on assessments of technical opportunities and limitations in each sector, cost-effectiveness, and the scope and pace of transformation in each sector necessary to maximize the Commonwealth's ability to achieve Net Zero in 2050.

#### Determination of 2030 Limit

Based on the findings above, and having considered the need to protect the health, economy, people, and natural resources of the Commonwealth in a manner consistent with the goals of the GWSA, I hereby determine that a statewide GHG emissions limit of 45% below 1990 GHG emissions levels for the year 2030 is a reasonable and appropriate statewide emissions limit that maximizes the Commonwealth's ability to achieve Net Zero in 2050.

12/30/2020

Date

*K. Theoharides*

Kathleen A. Theoharides