

**Date:** December X, 2020

**To:** Honorable Chris Sununu, Governor  
Honorable X, President of the Senate  
Honorable X, Speaker of the House  
[NAME], Senate Clerk  
[NAME], House Clerk

**From:** The New Hampshire Ad Hoc Emissions Commission

**Subject:** Final Report of the 2020 New Hampshire Ad Hoc Emissions Commission

To the Governor, Senate President, and Speaker of the House,

Enclosed please find the Final Report of the 2020 New Hampshire Ad Hoc Emissions Commission. The Report provides an overview of presentations and related information provided to the Commission by numerous experts, as well as the Commission's science-based recommendations related to emission reduction goals for the State of New Hampshire. If you have any questions please contact the Commission Chairperson, Senator Tom Sherman.

[Sen. Sherman Signature]

Senator Tom Sherman  
New Hampshire Senate District 24  
Chairperson, 2020 New Hampshire Ad Hoc Emission Commission

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**FINAL REPORT OF THE NEW HAMPSHIRE AD HOC EMISSION COMMISSION  
TO STUDY AND MAKE RECOMMENDATIONS REGARDING SCIENCE-BASED  
EMISSIONS GOALS AND INTERIM TARGETS FOR THE STATE OF NEW HAMPSHIRE.**

**COMPLETED: DECEMBER X, 2020**

**I. FOREWORD**

In January of 2020, a dozen legislators introduced bipartisan legislation, Senate Bill 590, which sought to create a legislative committee to establish science-based recommendations for the State of New Hampshire to reduce greenhouse gas emissions, with goals for 2050, interim goals for 2030 and 2040, and identification of the agency to lead the development of a plan to achieve those goals. SB 590 received bi-partisan support in the Senate’s Energy & Natural Resources Committee before the legislative session was disrupted by the COVID-19 pandemic. The

coalition of seven organizations who were working with the bill sponsors suggested that the best next step was to have the Senate table SB 590 and proceed with an ad hoc commission instead of a legislative committee. It was noted that the goals of SB 590 are still timely and extremely important, but that legislative timeliness would be unworkable as a result of the pandemic and its strain on the legislature. The Ad Hoc New Hampshire Emissions Commission was formed and met virtually five times, from August 2020 to December 2020. This is the Final Report from the Commission which includes background and context for the creation of the Commission as well as its findings and recommendations.

## II. EXECUTIVE SUMMARY

Starting in August 2020 and continuing into December 2020, the Ad Hoc Emissions Commission held five two-hour meetings via the Zoom video conferencing platform. The thirty-two Commission members, with diverse backgrounds and perspectives, came together to assist the State of New Hampshire in understanding the current emissions landscape and intersection between emissions and public health. The narrow scope of the Commission’s work centered around recommending science-based emission reduction goals for the year 2050, with interim goals for 2030 and 2040. The scope of the Commission’s work was not to establish a legislative solution, but rather to report to policy makers and interested parties what the scientific community has determined to be the necessary goals for addressing the global climate crisis and avoiding the worst case public health and other impacts of climate change.

The Commission members solicited speakers representing a wide spectrum of expertise, including experts in the areas of climate and public health. The Commission also provided time at each meeting to receive input from the public. Members of the public also had the option to submit comments through the commission website, via mail and directly to Commission members.

The Commission held a formal vote during its final meeting on December X on the content of this report and the findings and recommendations it contains. As a result of that vote, and on the basis of the information provided to it, the Commission recommends **[insert after Commission has arrived at its recommendations]**

Table 1 lists the Commission members and their affiliations.

**Table 1**

<b>Ad Hoc Emission Commission Members</b>			
<b>Title</b>	<b>First</b>	<b>Last</b>	<b>Representing/Affiliation</b>
Senator	Tom	Sherman	Senate District #24
Senator	Jeb	Bradley	Senate District #3

Senator	David	Watters	Senate District #4
Representative	Dave	Danielson	House District: Hillsborough - District 7
Representative	Kat	McGhee	House District: Hillsborough - District 40
Representative	Gary	Woods	House District: Merrimack - District 23
	Joan	Ascheim	The New Hampshire Public Health Association
Asst Mayor	Clifton	Below	The New Hampshire Municipal Association Town of Lebanon
	Dan	Bennett	NH Auto Dealers
	Katherine	Bourque	Unitil
	Zac	Conway	Dartmouth Hitchcock
	David	Creer	Business and Industry Association
Dr.	Michael	Dowe	The New Hampshire Medical Society
	Michael	Fitzgerald	Department of Environmental Services
	Donna	Gamache	Eversource
Mayor	George	Hansel	Governor's Millennial Council, Mayor Keene
	Tom	Irwin	Conservation Law Foundation
	Matthew	Mailloux	Office of Strategic Initiatives
	Madeleine	Mineau	Clean Energy NH
	Paula	Minnehan	The New Hampshire Hospital Association
	Huck	Montgomery	Liberty Utilities
	Jim	O'Brien	The Nature Conservancy in New Hampshire
	Michele	Roberge	NH Department of Health and Human Services
	Dennis	Sasseville	Worthen Industries
	Roger	Stephenson	Union of Concerned Scientists
	Cameron	Wake	University of New Hampshire
	Rob	Werner	League of Conservation Voters
	Colleen	Vein	Timberland

	Chris	Kelley	NAACP-Greater Manchester
	Michael	Licata	New Hampshire Electric Co-op

At its first meeting, on August 6, 2020, Senator Jeb Bradley nominated Senator Tom Sherman to chair the Commission. Commission members voted in support of the nomination.

The narrow scope of the Commission’s work was identified as producing a final report that would identify recommendations on the following three topics:

- 1) A science-based emissions reduction goal for the state to achieve by 2050 with interim goals for emission reductions in 2030 and 2040, necessary to meet the 2050 goal.
- 2) The processes and timelines for developing implementation plans to achieve the science-based emissions reduction levels.
- 3) The state agencies responsible, including a lead agency, for developing, implementing and reporting on the emission reduction levels identified, as well as public health outcomes.

The Commission identified a meeting schedule and addressed topics as set forth in Table 2, below.

**Table 2**  
**Meeting Dates and Topics:**

<b>Date and Time</b>	<b>Topic</b>	<b>Recording</b>
August 6 <sup>th</sup> 6:00-8:00 PM	Public Health & Climate Emissions	<a href="https://www.youtube.com/watch?v=DmiHkwykPjM&amp;t=1727s&amp;ab_channel=NHEmissionCommission">https://www.youtube.com/watch?v=DmiHkwykPjM&amp;t=1727s&amp;ab_channel=NHEmissionCommission</a>
September 3 <sup>rd</sup> 6:00-8:00 PM	Emissions by Sector (Transportation, Electricity Generation, Buildings, Non-Combustion)	<a href="https://www.youtube.com/watch?v=eJM8zrDX00M&amp;t=1153s&amp;ab_channel=NHEmissionCommission">https://www.youtube.com/watch?v=eJM8zrDX00M&amp;t=1153s&amp;ab_channel=NHEmissionCommission</a>
October 1 <sup>st</sup> 6:00-8:00 PM	Emission Reduction Goals (Midterm and Long-term)	<a href="https://www.youtube.com/watch?v=UKpyt5TSuGA&amp;feature=emb_title&amp;ab_channel=NHEmissionCommission">https://www.youtube.com/watch?v=UKpyt5TSuGA&amp;feature=emb_title&amp;ab_channel=NHEmissionCommission</a>
November 12 <sup>th</sup> 6:00-8:00 PM	Review Report and Extended Public Comment Period	
December 10 <sup>th</sup> 6:00-8:00 PM	Final Report Approval	

The Commission solicited testimony from a wide-range of experts to provide the Commission with relevant information, as set forth in Table 3, below.

**Table 3**

<b>Speakers who provided testimony before the Commission</b>			
<b>Date</b>	<b>Speaker</b>	<b>Organization</b>	<b>Topic</b>
August 6 <sup>th</sup>	Semra Aytur, PhD	Associate Professor in Health Management and Policy at the University of New Hampshire	Key findings of the 2014 Climate and NH Public Health report
August 6 <sup>th</sup>	Mark R. Windt, M.D	Center for Asthma, Allergy and Respiratory Disease	Health effects of climate change and air pollution
August 6 <sup>th</sup>	Justin Kates, Director of Emergency Management	City of Nashua, NH	Climate adaptation and emergency management
September 3 <sup>rd</sup>	Kathleen Bush, Ph.D	New Hampshire Department of Health and Human Services Division of Public Health Services	Air emissions, climate change and public health
September 3 <sup>rd</sup>	Chris Skoglund, Climate & Energy Program Manager	Air Resources Division, NH Department of Environmental Services	New Hampshire Emission levels by sector, NH Climate Action Plan
October 1 <sup>st</sup>	David Farnsworth, Principal	Regulatory Assistance Project	Regional emission reduction goals
October 1 <sup>st</sup>	Doria Brown, Energy Manager	City of Nashua, NH	Municipal emission reduction goals
October 1 <sup>st</sup>	Ken Colburn, Principal	Previously of National Association of Regulatory Utility Commissioners (NARUC), NH DES, NH BIA, NESCAUM, Regulatory Assistance Project	Global emission reduction goals, IPCC report findings

All virtual meetings were open to the public and promoted through social media and media advisories. Each meeting was well attended by Commission members or alternatives, with members of the public also attending each meeting. Six coordinating organizations<sup>1</sup> serving as the logistical backbone for the Commission, with the assistance of b-fresh Consulting, were tasked with running the Zoom meetings, identifying presenters for each meeting, compiling research for Commission members, maintaining and updating the website, compiling public comment, publicizing meetings via social media and other mediums including print, and various other administrative tasks.

### **III. SUMMARY OF SPEAKER TESTIMONY & FINDINGS**

<sup>1</sup> The seven organizations providing logistical support for the Commission, with the assistance of b-fresh Consulting, are: *CERES, Clean Energy NH, Conservation Law Foundation, League of Conservation Voters, The New Hampshire Public Health Association, The New Hampshire Medical Society, and The Nature Conservancy (New Hampshire Chapter).*

## **Meeting #1: Public Health & Climate Emissions**

**Date: (08/06/2020)**

**Presenter:** Semra Aytur, PhD, MPH, Epidemiologist, University of New Hampshire

**Summary:** Dr. Aytur reported that climate change is already impacting public health and will continue to do so in the future, more severely, as climate change intensifies. She explained that climate change causes both direct and indirect health impacts and differentially impacts vulnerable populations. The frequency of extreme heat days is projected to increase dramatically, likely leading to more heat injuries and death and differentially affecting low-income communities and communities of color. Other impacts -- including death and injury, and mental health and stress disorders -- can be expected with increasing severe weather events, such as flooding and sea level rise. Dr. Aytur also explained that climate change can lead to degradation of water quality and increases in emerging diseases (pathogens), foodborne illnesses, and harmful algal blooms. She further explained that climate change plays a key role in increasing the risk, and exacerbating the impacts, of pandemics like the current COVID-19 pandemic.

Dr. Aytur's presentation can be found at [\[insert link\]](#).

**Presenter:** Mark R. Windt, M.D

**Summary:** Dr. Windt discussed what the data shows, from a clinician's perspective, about the effects of Climate Change on respiratory disease. He focuses on the areas of concern in the United States: cardiorespiratory health, heat waves, increased pollution, allergy & asthma. Dr. Windt closed by making the connection between the adverse synergistic effect of increases in both air pollution and pollen with allergy and asthma.

Dr. Windt's presentation can be found at [\[insert link\]](#).

**Presenter:** Justin Kates, Director of Emergency Management, City of Nashua

**Summary:** Director Kates provided a high level overview of how Climate Adaptation plays a role in the decision making within the Emergency Management Department of the City of Nashua, New Hampshire. Mr. Kates focused on the impacts to the City of Nashua such as more extreme rain events (more frequent rain events that drop significant amounts of water in a short period of time); the increasing numbers of hot days and the impacts thereof, particularly in downtown urban homes without air conditioning; wet snow events that bring wires down; and more dry days that lead to increased drought, among many other examples.

Mr. Kates' presentation can be found at [\[insert link\]](#).

## **Meeting #2: Emissions by Sector**

**Date: (09/03/2020)**

**Presenter:** Kathleen Bush, Ph.D

**Summary:** Dr. Bush presented on the connections between air emissions, climate change and public health. She pointed to data that outlines the direct effect air emissions (both criteria air

pollutants and greenhouse gasses) have on public health, as well as the effects of increasing temperatures associated with climate change have on public health. Dr. Bush explained that reducing greenhouse gases is important to stabilize temperatures and will provide the co-benefit of improving air quality.

Dr. Bush's presentation can be found at [\[insert link\]](#).

**Presenter:** Chris Skoglund, Climate & Energy Program Manager, NHDES

**Summary:** NH emissions have fallen markedly since they peaked in 2005, but they are projected to remain at current levels through 2030 absent new policies. While NH's electricity consumption and demand remained relatively steady over the past decade, most of the other New England states have seen reliable declines in their electricity use and demand as a result of policies that spurred growth in energy efficiency and renewable energy. As NH's electric sector emissions have already fallen considerably and further regional reductions in electric consumption are not expected to be as deep, New Hampshire's greenhouse gas emissions will remain at present levels absent any changes to NH programs and policies.

Mr. Skoglund's presentation can be found at [\[insert link\]](#).

### **Meeting #3: Emissions Reduction Goals**

**Date (10/01/2020)**

**Presenter:** David Farnsworth, Principal, Regulatory Assistance Project

**Summary:** David Farnsworth briefly discussed examples of legislation enacted in Massachusetts, Maine, Connecticut, New York, and Vermont related to the reduction of greenhouse gas emissions. He concluded that state legislative efforts are extensive undertakings and are evidence that states understand that their entire economies will be affected by climate change, with certain communities more immediately or deeply affected. He explained that legislatively-established frameworks in these states are useful for information gathering and publicly exploring strategies to implement reductions of greenhouse gas emissions, ensuring statewide adaptation, and ensuring equitable and just power sector transitions.

Mr. Farnsworth's presentation can be found at [\[insert link\]](#).

**Presenter:** Doria Brown, Energy Manager, City of Nashua

**Summary:** Doria Brown presented on the sustainability planning being done by the City of Nashua. The City has the goal of 100% Renewable Energy by 2050, and 20% reduction in greenhouse gases by 2025. Ms. Brown discussed how the City is on an evolving journey when it comes to greenhouse gas emissions reduction. They are committed to reducing municipal emissions by 20% by 2025 and actually anticipate surpassing that goal by net metering with their hydroelectric facilities. Ms. Brown also discussed various other strategies the City is taking such as purchasing alternative fuel public transit vehicles, implementing a bike share program, and investing in renewable energy resources.

Ms. Brown's presentation can be found at [\[insert link\]](#).

**Presenter:** Ken Colburn, Former Director of NHDES Air Resources Division, Former Principal of Regulatory Assistance Project

**Summary:** Ken Colburn provided an overview of the work of the Intergovernmental Panel on Climate Change’s (IPCC). The data show that mean temperatures are shifting higher than predicted. The IPCC special report released in 2015 outlined the need to achieve net zero greenhouse gas emissions by 2050-2055 in order to maintain 1.5 C. Colburn pointed to data that shows the impacts of climate change hitting populations harder and sooner than science predicted, even a decade ago. He stated that he expects to see the IPCC sixth assessment review in 2022, which is expected to lay out impacts of greater magnitude and urgency. An example of the greater magnitude and urgency is “climate feedback,” such as permafrost methane, forest die-backs, ocean circulation, ice sheet collapse, etc. These climate feedbacks stem from continual temperature increases and will force uncontrollable responses from nature, ultimately leading to further increases.

Mr. Colburn’s presentation can be found at [\[insert link\]](#).

#### **IV. RECOMMENDATIONS**

The Commission, on the basis of the presentations and information brought to it, public comment, and deliberations, adopted the following recommendations:

1. Establish a science-based emissions reduction goal for the state to achieve by 2050 with interim goals for emission reductions in 2030 and 2040, necessary to meet the 2050 goal.

**Commission Recommendation:**

2. Establish processes and timelines for developing implementation plans to achieve the science-based emissions reduction levels.

**Commission Recommendation:**

3. Identify the state agencies responsible, including a lead agency, for developing, implementing and reporting on the emission reduction levels identified, as well as public health outcomes.

**Commission Recommendation:**

#### **V. CLOSING**

**[To be completed after the Commission has arrived at its recommendations]**