S.B. 254 – REDUCING NEVADA’S GREENHOUSE GAS EMISSIONS

Presentation to
Joint Meeting of the Senate Committee on Growth and Infrastructure
and the
Assembly Committee on Growth and Infrastructure

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Existing Law (NRS 445B.380):

- Requires Department of Conservation and Natural Resources to issue, at least every 4 years, a report including a statewide inventory of greenhouse gases (GHG) released in Nevada

- Reports have been issued for
  2008
  2012
  2016
SB 254: Requires annual reports which will include:

- Annual Nevada greenhouse gas emissions by economic sector

- A 20-year projection of annual Nevada GHG emissions

- Identification of policies that could achieve reductions in projected Nevada GHG emissions of:
  - 28% by 2025, as compared to the 2005 level
  - 45% by 2030, as compared to the 2005 level

- A qualitative assessment of whether the policies identified support long-term reductions of GHG emissions to zero or near-zero by 2050
CONCLUSIONS FROM THE FOURTH NATIONAL CLIMATE ASSESSMENT

Executive Summary of the Climate Science Special Report: Fourth National Climate Assessment, Volume I
U.S. Global Change Research Program, Washington, DC, USA. Excerpts from “Highlights of the U.S. Global Change Research Program – Climate Science Special Report” at pp. 10-11. (Copy of Highlights included in the Appendix.) Available at
• Global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901-2016). This period is now the warmest in the history of modern civilization.

• It is extremely likely that human activities, especially emissions of GHG, are the dominant cause of the observed warming since the mid-20th century. For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.

• The global atmospheric CO₂ concentration has now passed 400 parts per million, a level that last occurred about 3 million years ago, when both global average temperature and sea level were significantly higher than today.
• Annual average temperature over the contiguous United States has increased by about 1.8°F (1.0°C) for the period 1901-2016.

• Over the next few decades (2021-2050), annual average temperatures are expected to rise by about 2.5°F for the United States, relative to the recent past (average from 1976-2005), under all plausible future climate scenarios.
• The incidence of large forest fires in the western United State and Alaska has increased since the early 1980s and is projected to further increase in those regions as the climate changes, with profound changes to regional ecosystems.

• Annual trends toward earlier spring melt and reduced snowpack are already affecting water resources in the western United States and these trends are expected to continue. Under higher scenarios, and assuming no change to current water resources management, chronic, long-duration hydrological drought is increasingly possible before the end of this century.
The magnitude of climate change beyond the next few decades will depend primarily on the amount of greenhouse gases (especially carbon dioxide) emitted globally. Without major reductions in emissions, the increase in annual average global temperature relative to preindustrial times could reach 9°F (5°C) or more by the end of this century.

With significant reductions in emissions, the increase in annual average global temperature could be limited to 3.6°F (2°C) or less.
UNITED STATES FIRST NATIONALLY DETERMINED CONTRIBUTION SUBMITTED UNDER THE PARIS AGREEMENT

Available at https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/United%20States%20of%20America%20First/U.S.A.%20First%20NDC%20Submission.pdf
“The United States is strongly committed to reducing greenhouse gas pollution, thereby contributing to the objective of the Convention. In response to the request in Lima to communicate to the secretariat its intended nationally determined contribution towards achieving the objective of the Convention as set out in its Article 2—the stabilization of greenhouse gas concentrations in the atmosphere at a level that would prevent dangerous anthropogenic interference with the climate system—the United States intends to achieve an economy-wide target of reducing its greenhouse gas emissions by 26-28 per cent below its 2005 level in 2025 and to make best efforts to reduce its emissions by 28%.”
UNITED STATES CLIMATE ALLIANCE

https://www.usclimatealliance.org/
Current Members (22):

California  New Jersey
Colorado    New Mexico
Connecticut  New York
Delaware     North Carolina
Hawaii       Oregon
Illinois     Puerto Rico
Maine        Rhode Island
Maryland     Vermont
Massachusetts Virginia
Michigan     Washington
Minnesota    Wisconsin
Each member state commits to:

• Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emissions by at least 26-28 percent below 2005 levels by 2025

• Track and report progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement, and

• Accelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level.
NEVADA’S PROGRESS IN REDUCING GREENHOUSE GAS EMISSIONS
Nevada has significantly reduced its GHG emissions since 2005.
• \( \text{CO}_2 \) emissions have declined while Nevada’s population has increased.
• The Electric Power Sector has driven CO₂ emission reductions

NEVADA CO₂ EMISSIONS - ELECTRIC POWER SECTOR

Available at https://www.eia.gov/environment/emissions/state/analysis/

26.37 MMT

13.89 MMT

Million Metric Tons of CO₂ /Year

2005

2016

18.24

11.59

8.13

2.3
Transportation Sector CO₂ emissions have also declined since 2005.

**NEVADA CO₂ EMISSIONS - TRANSPORTATION SECTOR**


Source: EIA – *Nevada Carbon Dioxide Emissions from Fossil Fuel Consumption (1980-2016).* 
Available at [https://www.eia.gov/environment/emissions/state/analysis/](https://www.eia.gov/environment/emissions/state/analysis/)
• The Transportation Sector is now the largest source of CO₂ emissions

NEVADA CO₂ EMISSIONS BY SECTOR

Available at https://www.eia.gov/environment/emissions/state/analysis/
QUESTIONS?

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About Western Resource Advocates - Founded in 1989, Western Resource Advocates is dedicated to protecting the West’s land, air and water. Western Resource Advocates’ Clean Energy Program works in the Interior West to transition electricity production away from fossil fuels towards clean, renewable energy, and advance energy efficiency in order to prevent catastrophic climate change, improve air quality, and protect public health.
Highlights of the U.S. Global Change Research Program
Climate Science Special Report

The climate of the United States is strongly connected to the changing global climate. The statements below highlight past, current, and projected climate changes for the United States and the globe.

Global annually averaged surface air temperature has increased by about 1.8°F (1.0°C) over the last 115 years (1901–2016). This period is now the warmest in the history of modern civilization. The last few years have also seen record-breaking, climate-related weather extremes, and the last three years have been the warmest years on record for the globe. These trends are expected to continue over climate timescales.

This assessment concludes, based on extensive evidence, that it is extremely likely that human activities, especially emissions of greenhouse gases, are the dominant cause of the observed warming since the mid-20th century. For the warming over the last century, there is no convincing alternative explanation supported by the extent of the observational evidence.

In addition to warming, many other aspects of global climate are changing, primarily in response to human activities. Thousands of studies conducted by researchers around the world have documented changes in surface, atmospheric, and oceanic temperatures; melting glaciers; diminishing snow cover; shrinking sea ice; rising sea levels; ocean acidification; and increasing atmospheric water vapor.

For example, global average sea level has risen by about 7–8 inches since 1900, with almost half (about 3 inches) of that rise occurring since 1993. Human-caused climate change has made a substantial contribution to this rise since 1900, contributing to a rate of rise that is greater than during any preceding century in at least 2,800 years. Global sea level rise has already affected the United States; the incidence of daily tidal flooding is accelerating in more than 25 Atlantic and Gulf Coast cities.

Global average sea levels are expected to continue to rise—by at least several inches in the next 15 years and by 1–4 feet by 2100. A rise of as much as 8 feet by 2100 cannot be ruled out. Sea level rise will be higher than the global average on the East and Gulf Coasts of the United States.

Changes in the characteristics of extreme events are particularly important for human safety, infrastructure, agriculture, water quality and quantity, and natural ecosystems. Heavy rainfall is increasing in intensity and frequency across the United States and globally and is expected to continue to increase. The largest observed changes in the United States have occurred in the Northeast.
Heatwaves have become more frequent in the United States since the 1960s, while extreme cold temperatures and cold waves are less frequent. Recent record-setting hot years are projected to become common in the near future for the United States, as annual average temperatures continue to rise. Annual average temperature over the contiguous United States has increased by 1.8°F (1.0°C) for the period 1901–2015; over the next few decades (2021–2050), annual average temperatures are expected to rise by about 2.5°F for the United States, relative to the recent past (average from 1976–2005), under all plausible future climate scenarios.

The incidence of large forest fires in the western United States and Alaska has increased since the early 1980s and is projected to further increase in those regions as the climate changes, with profound changes to regional ecosystems.

Annual trends toward earlier spring melt and reduced snowpack are already affecting water resources in the western United States and these trends are expected to continue. Under higher scenarios, and assuming no change to current water resources management, chronic, long-duration hydrological drought is increasingly possible before the end of this century.

The magnitude of climate change beyond the next few decades will depend primarily on the amount of greenhouse gases (especially carbon dioxide) emitted globally. Without major reductions in emissions, the increase in annual average global temperature relative to preindustrial times could reach 9°F (5°C) or more by the end of this century. With significant reductions in emissions, the increase in annual average global temperature could be limited to 3.6°F (2°C) or less.

The global atmospheric carbon dioxide (CO₂) concentration has now passed 400 parts per million (ppm), a level that last occurred about 3 million years ago, when both global average temperature and sea level were significantly higher than today. Continued growth in CO₂ emissions over this century and beyond would lead to an atmospheric concentration not experienced in tens to hundreds of millions of years. There is broad consensus that the further and the faster the Earth system is pushed towards warming, the greater the risk of unanticipated changes and impacts, some of which are potentially large and irreversible.

The observed increase in carbon emissions over the past 15–20 years has been consistent with higher emissions pathways. In 2014 and 2015, emission growth rates slowed as economic growth became less carbon-intensive. Even if this slowing trend continues, however, it is not yet at a rate that would limit global average temperature change to well below 3.6°F (2°C) above preindustrial levels.