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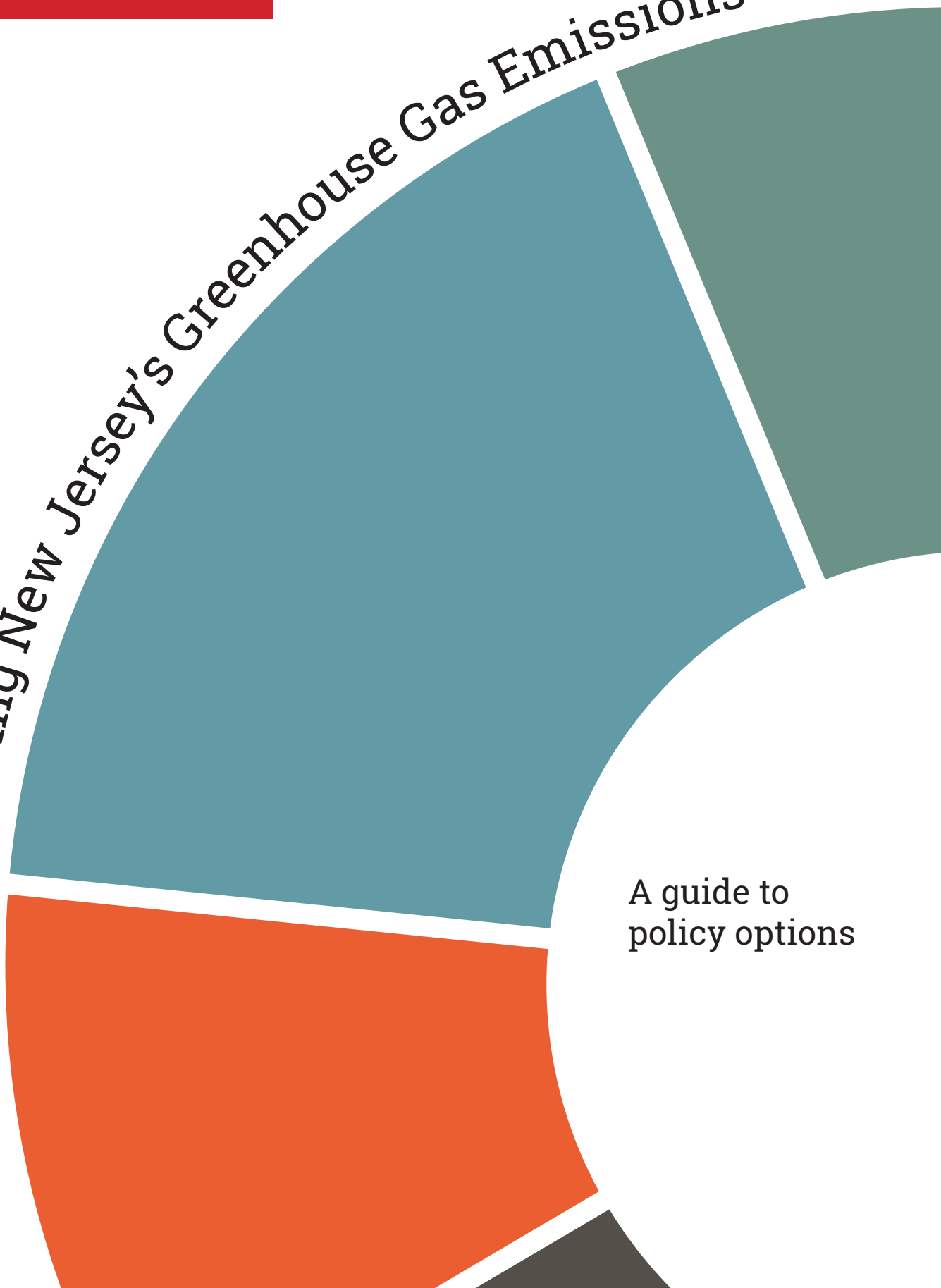
New Jersey Climate Adaptation Alliance

Reducing New Jersey's Greenhouse Gas Emissions

A guide to policy options



January 2018

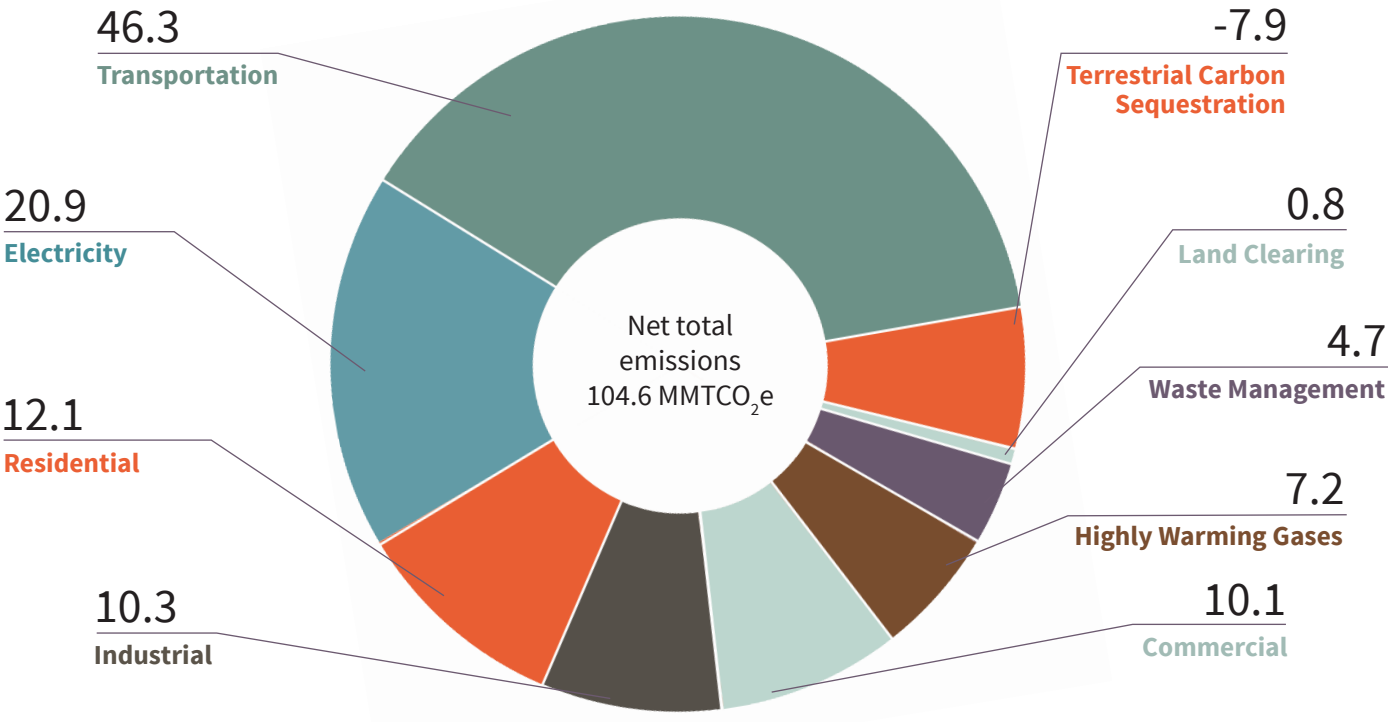
1 HOW DOES CLIMATE CHANGE AFFECT NEW JERSEY?

New Jersey in the 21st century can expect higher temperatures, a greater frequency of heavy precipitation, and rising sea levels.

1. Increases in average temperature
2. More frequent high heat days
3. Heavier rains
4. Potentially longer dry spells
5. More frequent, severe coastal flooding due to sea level rise
6. More frequent nuisance flooding

2 WHAT ARE THE SOURCES OF GREENHOUSE GAS (GHG) EMISSIONS IN NEW JERSEY?

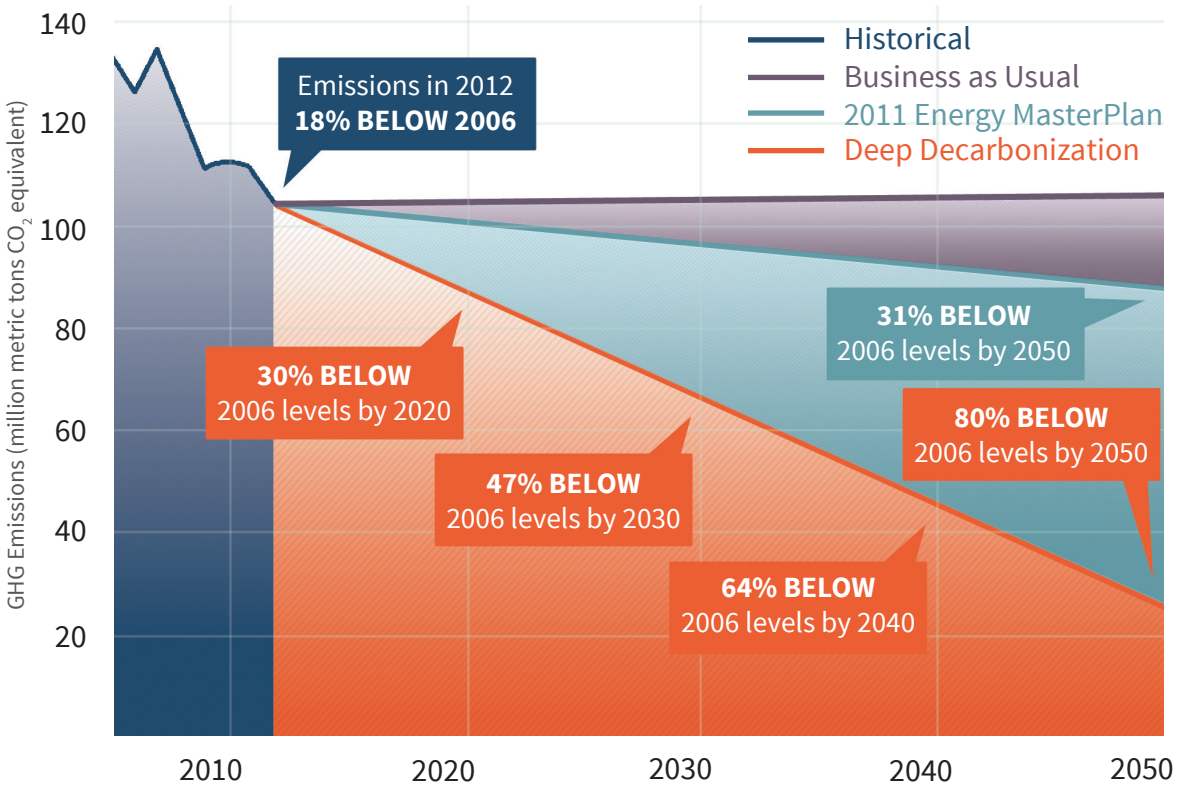
The transportation sector is the largest source of emissions in the state, followed by electricity generation and fossil fuel used in the residential, industrial and commercial sectors mainly for heating.



Units are million metric tons CO_2 equivalent ($MMTCO_2e$).

IS NEW JERSEY REDUCING ITS GREENHOUSE GAS EMISSIONS?

Yes, a bit, but we still have a long way to go. The 2007 New Jersey Global Warming Response Act (GWRA) puts a limit on the emission of greenhouse gases. New Jersey already achieved its 2020 goal likely due to a combination of factors including the recession of 2008–12 and fuel switching to natural gas, among others, but **the state must reduce emissions 75% from today's levels to meet the 2050 limit**. The chart below illustrates the gap between New Jersey's 2050 limit and its emissions trajectory under current policies.



The GWRA defines greenhouse gases as carbon dioxide, methane, nitrous oxide, hydrofluorocarbons, perfluorocarbons, sulfur hexafluoride, and other substances NJDEP determines to be significant contributors to global warming.

NJ has established a limit to reduce emissions 80% below 2006 levels by 2050, or approximately 75% from today's level.

NJ's 2050 limit is an essential step toward the goals of the 2015 Paris Agreement, which aims to avoid the worst risks of climate change by limiting global warming to below 2°C.

How do we 'decarbonize' New Jersey's economy?

Achieving deep economy-wide net GHG emissions reductions will require three major categories of action:

Transition to low-carbon energy
Advance energy transition policies that promote innovation, encourage more efficient energy production and use, and put a price on carbon dioxide emissions.

Sequester carbon
Create larger and more productive "carbon sinks" such as forests and wetlands, improve crop yields and soil carbon sequestration, and practice smarter urban development.

Reduce non-CO2 emissions
Support technological innovation to identify low-carbon and low-cost alternatives to major sources of methane, nitrous oxide and hydrofluorocarbon emissions.

WE'RE MAKING PROGRESS . . . BUT THERE'S ROOM TO IMPROVE

A quick look at the steps New Jersey has taken to reduce GHG emissions and where the state can consider doing more.

Transport

NJ adopted zero-emission vehicle (ZEV) standards	but has not signed the ZEV MOU.
NJ exempts ZEVs from sales tax	but does not offer consumer rebates.
NJ implemented a workplace charging incentive	but funds are no longer available.
The 2005 Diesel Retrofit Law addresses black carbon from buses and public onroad vehicles	but black carbon is not in the NJ GHG inventory and NJ has no strategy for short-lived climate pollutants.

Power

NJ joined RGGI in 2009	but withdrew in 2012.
In 2009 NJ had 2nd most solar in the US	but had 5th most solar in 2016.
NJ has 20.38% Renewable Portfolio Standard (RPS)	but lags well behind several other states.
NJBPU is authorized to adopt an Energy Efficiency Portfolio Standard (EEPS)	but NJBPU declined to do so in 2014.
NJ has adopted decoupling for natural gas	but not for electricity.

Building

NJ offers free voluntary benchmarking for commercial and industrial buildings	but NJ has not adopted mandatory benchmarking disclosure provisions.
NJ Green Building Manual defines best practices for green buildings	but NJ does not have a green building code for private sector buildings.
Stakeholders attend regional code meetings	but NJ doesn't have a codes collaborative.

Non-CO_2 Emissions

GWRA authorizes monitoring of non-CO_2 gases	but NJDEP never promulgated program rules.
NJDEP requires major facilities to report methane and CO_2 emissions from non-mobile sources such as on-site pipelines under certain conditions	but does not require reporting of methane from all pipelines or reporting of other highly warming non-CO_2 gases.

Carbon Sinks

Programs such as Green Acres steward resources	but not specifically for GHG reduction.

WHERE DO WE GO FROM HERE?

A brief summary of lessons learned from other states and policy options available to New Jersey.

What New Jersey can learn from other states

Build resilience and optimize co-benefits

CLIMATE POLICY GENERATES REVENUE
Climate programs drive investments in energy efficiency and renewable energy. For example, The Energy Trust of Oregon made more than $1 billion in clean-energy investments, saving customers more than $1.3 billion on utilities since 2002. RGGI generated billions of dollars in economic benefits, reducing energy costs and producing thousands of new jobs since its establishment in 2009.

CLIMATE POLICY SUPPORTS LIVABLE COMMUNITIES AND IMPROVES HEALTH
Reducing GHG emissions can improve air quality and lower health risks. Smart growth policies promoting cleaner modes of travel such as mass transit, biking, and walking encourage physical activity and reduce pollution.

CLIMATE POLICY FOSTERS TECHNOLOGICAL INNOVATION
Policy initiatives such as increasing the state Renewable Portfolio Standard (RPS), creating Offshore Wind Renewable Energy Credits, and establishing an energy efficiency portfolio standard can encourage the development of new technologies.

Use existing laws

STATES ARE LEADERS IN CLIMATE AND CLEAN ENERGY POLICIES
States have led the way by developing policies to cap GHG emissions, promote renewable energy and energy efficiency, drive cleaner vehicles, support more compact land use, and reduce methane and other highly warming gas emissions, among others.

Plan and monitor

MID-TERM TARGETS HELP ACHIEVE LONG-TERM GOALS
Many states, including NJ, have near- and long-term GHG goals. Several also set interim GHG targets. NJ does not have an interim limit between its 2020 and 2050 GHG targets.

WHAT GETS MEASURED GETS MANAGED
Measuring GHGs is a foundational strategy for reducing emissions. Several states that have adopted interim GHG reduction targets have also developed plans to meet the targets, report on emissions, and track progress. The 2007 GWRA directs NJ to report on progress toward its 2020 and 2050 limits, but NJDEP never promulgated the GHG emissions monitoring and reporting program rules.

CURRENT POLICIES DO NOT CONSIDER THE SOCIAL COST OF CARBON (SCC)
Several states consider SCC, which is an estimate of the climate-related costs of a ton of carbon dioxide on agriculture, human health, energy systems, and flood-damaged property. NJ does not consider SCC but could explore establishment in regulatory processes.

Work with partners

COOPERATION AMONG STATES LEVERAGES THE MARKET AND CREATES EFFICIENCIES
Partnership opportunities with other states and countries include joining more than 2,500 U.S. leaders to sign the “We Are Still In” declaration committing to the 2015 Paris agreement; rejoining RGGI; joining the ZEV MOU; and participating in the Transportation and Climate Initiative’s consideration of market-based efforts to reduce GHG emissions.

A guide to policy options

Build resilience and optimize co-benefits

STANDARD SETTING WITH OPPORTUNITIES FOR INNOVATION AND ECONOMIC DEVELOPMENT

- Increase the state RPS
- Establish Offshore Wind Renewable Energy Credits
- Establish an Energy Efficiency Portfolio Standard (EEPS)
- Use existing authorities to address Highly Warming Gases and address sources of Black Carbon
- Align current building codes with energy efficiency and demand response best practices as well as EV readiness

EQUITY FOR VULNERABLE POPULATIONS AND COMMUNITIES BURDENED BY ENVIRONMENTAL POLLUTION

- Establish a more formal environmental justice (EJ) policy and programs that target benefits to EJ communities
- Ensure climate change mitigation programs address needs of vulnerable populations
- Ensure climate policies reduce emissions in communities disproportionately burdened by pollution

NEW STATUTORY INITIATIVES

- Consider economy-wide carbon pricing
- Dedicate revenues from the Societal Benefit Charge to energy conservation and/or GHG emissions reduction
- Explore statutory decoupling provisions to incentivize efficiency and conservation measures by utilities

Use existing laws

EXISTING LAWS

- Assess authority to limit GHG pollution, rejoin RGGI, establish EEPS, and strengthen RPS under existing laws such as the NJDEP's enabling statute; Air Pollution Control Act; Global Warming Response Act; Global Warming Solutions Fund Act; and Electric Discount and Energy Competition Act

Plan and monitor

MID-TERM AND LONG-TERM ECONOMY-WIDE PLANNING

- Set an interim GHG emissions limit (e.g., 2030)
- Update the 2009 Global Warming Response Recommendations Plan to meet new statewide interim and 2050 limits
- Establish emissions monitoring and progress reports, such as those in the GWRA
- Expand authority to establish binding GHG emissions limits for state policies and performance standards

CLIMATE CHANGE CONSIDERATIONS IN RULEMAKING AND PLANNING

- Establish a metric for monetizing SCC and applying that metric in state rulemaking
- Consider climate change impacts in statewide planning (e.g., State Development and Redevelopment Plan, Water Supply Master Plan, Long-Range Transportation Plan, and Energy Master Plan) for attaining interim and 2050 limits
- Consider climate change impacts, SCC and new interim and 2050 limits in major investments of public monies, including infrastructure and economic development, state facilities, and Executive Order 215 Reviews
- Consider climate change impacts, SCC, and new interim and 2050 limits in review of BPU filings
- Establish a program to require or incentivize Metropolitan Planning Organizations to meet state or regional GHG limits
- Establish leak detection and replacement requirements for natural gas compressor stations and pipelines

Work with partners

MULTISTATE AND MULTINATIONAL APPROACHES

- Sign the "We Are Still In" declaration committing NJ to the 2015 Paris Agreement and the U.S. contribution towards it
- Join the ZEV MOU with the other nine ZEV states and increase incentives for ZEV purchase and use
- Rejoin RGGI and ensure protections for and investments in disproportionately affected communities
- Participate in the Transportation and Climate Initiative's market-based efforts to reduce GHG emissions in transportation

About this brochure

The information in this brochure is based on the report "An Examination of Policy Options for Achieving Greenhouse Gas Emissions Reductions in New Jersey" by the Georgetown Climate Center, Rutgers Climate Institute, Rutgers Edward J. Bloustein School of Planning and Public Policy, and World Resources Institute. A link to the report can be found at **climatechange.rutgers.edu**.

New Jersey Climate Adaptation Alliance

A wealth of resources, including videos, analysis, and decision-support tools, can be found at the New Jersey Climate Adaptation Alliance website (**njadapt.rutgers.edu**). The Alliance is a network of policymakers, public and private sector practitioners, academics, and nongovernmental and business leaders organized to build climate change preparedness capacity in New Jersey.