Rhode Island Energy Policy Simulator Publicly Released

Acadia Center Developed Customized Scenario to Inform Rhode Island 2022 Climate Plan Update

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Acadia Center
Advancing the Clean Energy Future
207.236.6470 • acadiacenter.org

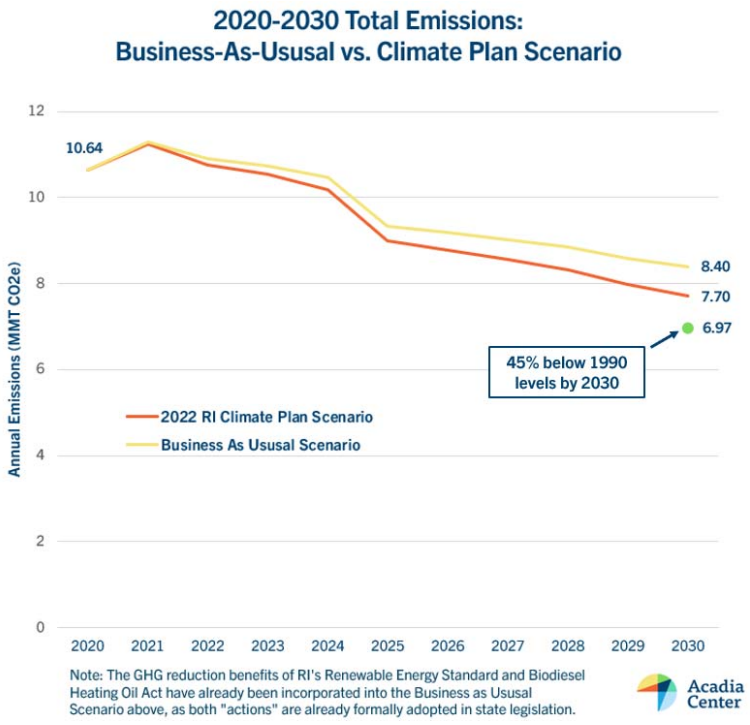
What is the Energy Policy Simulator?

The Rhode Island Energy Policy Simulator (EPS) is a free, open-source, peer-reviewed model created by Energy Innovation LLC and RMI. The EPS allows users to estimate climate and energy policy impacts through 2050 on emissions, the economy, jobs, and public health using publicly available data. It can be accessed online here. Two companion documents explain key data sources, assumptions, policy scenarios and the calculation methodologies used in the EPS. The Rhode Island EPS calculates impacts in seconds in an accessible web-based interface, which can help policymakers and advocates rapidly screen policies and understand remaining emissions gaps.

Customized Scenario for Rhode Island 2022 Climate Plan Update

In December of 2022, the Rhode Island Executive Climate Change Coordinating Council (EC4) voted to accept the Rhode Island 2022 Climate Update, an update to the state's 2016 GHG emissions reduction plan. As part of this effort, Acadia Center, in collaboration with the Rhode Island Department of Environmental Management, developed a customized scenario using the Rhode Island EPS. The customized scenario, titled "Rhode Island 2022 Climate Plan Update," can be found in the policy scenario selector drop-down menu on the publicly available Rhode Island EPS.

The purpose of customized Climate Plan Scenario developed by Acadia Center is to provide a high-level decarbonization analysis based on a select subset of key actions identified in the 2022 Climate Update and approximate the potential of these actions to assist the state in achieving Rhode Island's overarching climate goal of a 45% reduction in GHG emissions below 1990 levels by 2030. The Climate Plan Scenario estimates that the subset of key actions will reduce GHG emissions approximately 39% below 1990 levels by 2030, highlighting that the identified actions could be instrumental in reducing emissions by 2030 in Rhode Island. However, the identified subset of actions will likely need to be accompanied by additional

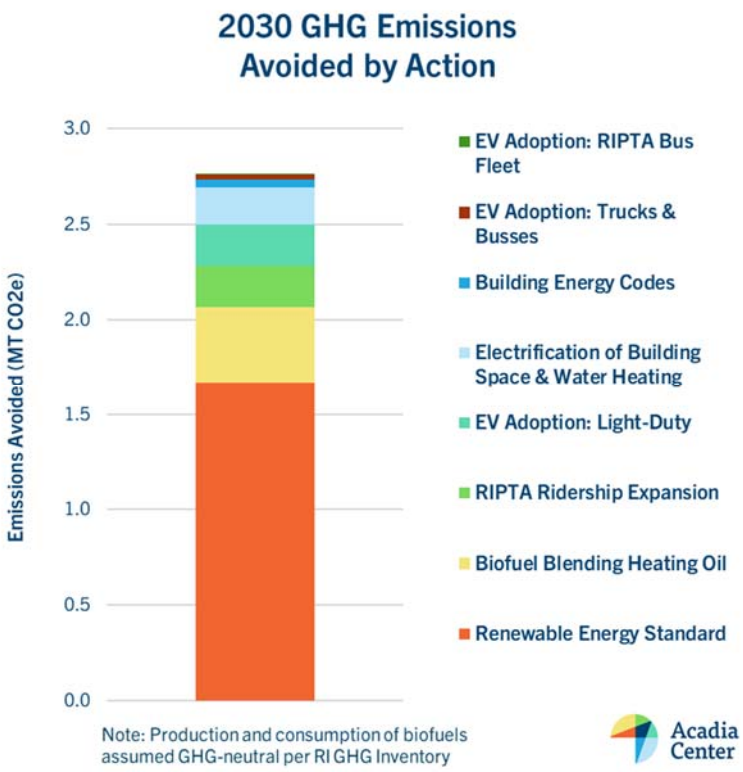


supporting actions to achieve the state's overarching goal of a 45% reduction by 2030. The Climate Plan Scenario does not represent an exhaustive list of all policies and programs the state plans to implement to achieve the 2030 emissions target. Additional details on how the Climate Plan Scenario was developed and specifics of the actions included can be found in the technical appendix (page 111) of the 2022 Climate Update.

The Rhode Island EPS also includes a pre-loaded Business as Usual Scenario that incorporates existing policy, scheduled power plant retirements, some improvement in building and transportation efficiency, and economic adoption of electric vehicles (EVs). Notably for Rhode Island, this Business as Usual Scenario includes both the Renewable Energy Standard, which requires 72% of total electricity generated from qualifying renewable energy sources by 2030, and the Biodiesel Heating Oil Act, which requires 50% of the heating oil supply to be composed of biofuels by 2030. The trajectory of both the Business as Usual Scenario and the Climate Plan Scenario are shown in the figure on the previous page.

GHG Reduction Potential of Specific Actions

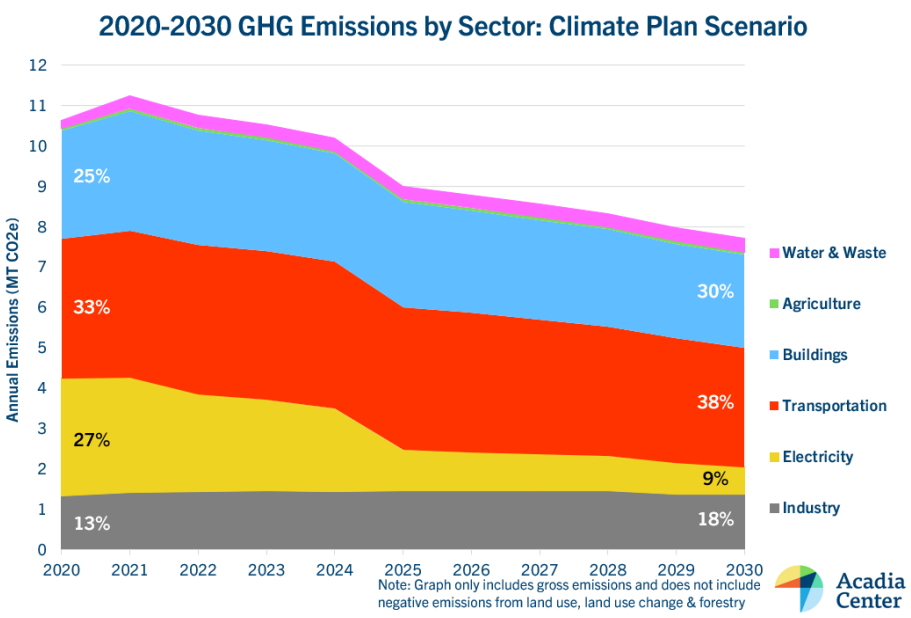
A total of nine separate actions were included and analyzed in the Climate Plan Scenario, including actions aimed at reducing emissions in the building, electricity generation, and transportation sectors. The figure to the right summarizes the estimated annual GHG emissions reduction in 2030 from each action. The renewable energy standard is responsible for over 60% of all anticipated emissions reductions from the suite of actions, highlighting the importance of rapidly cleaning the electricity generation sector. The combined suite of building actions accounts for 23% of the anticipated overall emissions reduction, while the combined suite of transportation actions accounts for the remaining 17% of emissions reductions.



One important note is that, while the adoption of the Biodiesel Heating Oil Act appears to be the second most impactful action, there remain serious questions about both the true GHG reduction potential of this action and the value of using limited supplies of biofuels in the building space heating sector. The GHG reduction benefits of biofuel blending quantified in the Climate Plan Scenario rely on the GHG accounting approach from the Rhode Island Greenhouse Gas Inventory, which assumes that the production and combustion of

biofuels does not result in GHG emissions attributable the state. This is a simplification of a complex topic that requires closer scrutiny. More states are considering lifecycle GHG accounting practices for biofuels as proposals to rely on these fuels to achieve ambitious climate targets gain more attention. Proposals to use limited supplies of biofuels in the building heating sector, a sector of the economy that is relatively easy to electrify, will surely be a hotly debated point in PUC 22-01 which will investigate the future of regulated gas distribution businesses in the state.

As demonstrated in the figure to the right, in 2020, Rhode Island's largest emitting sector was transportation, accounting for 33% of overall GHG emissions, followed closely by buildings (25%) and electricity (27%). Looking ahead to 2030, the EPS Climate Plan Scenario projects that Rhode Island's economy-wide emissions will decrease approximately 28% from 2020 levels. In 2030, transportation is projected to remain the largest emitting sector (38% of total emissions), but buildings (30%) are set to displace electricity (9%) as the second highest emitting sector.



This new tool - released by Acadia Center, Energy Innovation, and RMI – provides policymakers and advocates with a first-ever open-source real-time tool to evaluate the emissions, economic, public health, and job impacts of energy and climate policies and as such is a great complement to other existing energy and policy models.

For more information:

Ben Butterworth, Director: Climate, Energy & Equity Analysis
bbutterworth@acadiacenter.org, 617.742.0054 ext.111