EPS + CPRG

Using the State Energy Policy Simulator to Support Climate Pollution Reduction Grant Planning

What is the Energy Policy Simulator (EPS)?

The Energy Policy Simulator (EPS) is **a free-to-use, publicly available, open-source model** for estimating the **environmental, economic, and human health impacts** of climate and energy policies. The EPS offers unparalleled accessibility to energy system modeling through an **easy-to-use web interface** that allows non-technical users to model and test their own policy scenarios in **real-time**.

RMI and Energy Innovation have developed state-level EPS models for all lower 48 states. The models use official data from the Environmental Protection Agency, Department of Energy, National Renewable Energy Laboratory, and other federal and state sources. All 48 state models are freely available to the public. The state governments of Louisiana, Minnesota, New Mexico, Rhode Island, and Colorado have all used the EPS in an official or semi-official capacity for climate action planning.

The EPS allows the user to control a large variety of policies that affect energy use and emissions in every major sector of the economy including transportation, electricity, buildings, industry, agriculture, and land use. It also includes various smaller components, such as hydrogen supply, district heat, waste management, and geoengineering. The model reports outputs at annual intervals and provides numerous outputs, including:

- **Emissions of 12 different pollutants** - CO_2, nitrogen oxides [NO_x], sulfur oxides [SO_x], fine particulate matter [PM2.5], and eight others, including their carbon dioxide equivalence (CO_2e, a measure of the global warming potential of various pollutants).
- **Direct cash flow (cost or savings)** impacts on government, non-energy industries, labor and consumers, and five energy-supplying industries.
- **Impacts on jobs, GDP, and employee compensation**, as a whole or disaggregated into 36 economic categories.
- **Health-related outcomes** including premature mortality (deaths) avoided due to reduced primary and secondary particulate pollution.
- **Electricity sector composition and output** including capacity and generation from coal, natural gas, wind, solar, etc.
- **Vehicle technology market shares and fleet composition** including electric vehicles.
- **Energy use by fuel type** from various energy-using technologies (e.g., specific types of vehicles, building components).
- **Policy specific emissions impact and cost-effectiveness** including wedge diagrams and cost curves.
- **Fuel imports and exports**, and associated expenditures or revenues.

How can the EPS be used to support state Climate Pollution Reduction Grant program (CPRG) planning?

Through the CPRG program, 46 states are now receiving $3 million each for greenhouse gas (GHG) reduction planning, with Priority Climate Action Plans due to EPA in March 2024. Based on the plans, states will compete for $4.6 billion total in implementation grants.

The table below shows how the EPS can fulfill several of the requirements and recommendations of the CPRG's Priority Climate Action Plans (PCAP), Comprehensive Climate Action Plan (CCAP), and Status Reports.

CPRG Requirement	EPS can…	Reference…
GHG Inventory	Calculate emissions by source and sector: Related to building an inventory, scoping emissions by source and sector helps find where to focus a plan and propose where to bring agency resources to bear.	(See EPA Slide 6)
GHG Emissions Projections	Project state emissions based upon existing sources and policies: The EPS projects state emissions from present year through 2050 and approximates your state's current emissions before having to complete your GHG inventory.	(See EPA Slide 8)
GHG Reduction Targets	Build bottom-up scenarios to hit targets: The EPS allows for building and comparing multiple scenarios at a time which can help states set GHG reduction targets based upon each state's unique situation.	(See Page 52)
Identify Measures to Achieve Goals	Show dozens of GHG mitigation measures in each sector: Coming pre-loaded with many policies, the EPS includes many GHG mitigation measures that the user can choose to include in scenario development.	(See EPA Slide 8)
Quantified GHG Reduction Measures	Calculate GHG impact of each measure: Each measure included in the EPS is quantified, accounting for interactions with other policies, and state-specific conditions.	(See EPA Slide 8)
Benefits Analysis	Estimate air pollution, public health, and economic impacts: Co-benefits of GHG reduction like public health improvements, economic development, and financial implications are all included in outputs.	(See EPA Slide 6, and other trainings)
Public and Community Engagement	Help build trust with communities and the general public, since it is free to use, transparent, documented, and open-source.	(See EPA Slide 15)

Links and Resources

- RMI state climate scorecards, built using the EPS.
- EPA's Program Guidance on the CPRG.
- EPA's CPRG Training, Tools and Technical Resources.
- Contact: USanalysis@rmi.org