ENERGY POLICY SIMULATOR
THE ENERGY POLICY SIMULATOR HELPS POLICYMAKERS...

Understand impacts of energy and environmental policies

Find the best way to meet their climate, financial, and other goals

Make policy decisions that are unbiased and data-supported
We develop a BAU forecast using data from reputable, national models.

- EIA’s Annual Energy Outlook
- EPA’s Global Non-CO2 Greenhouse Gas Emissions Projections
- NREL’s Electrification Futures Study

Accounts for Covid-19 Recession

Forecasted through 2050
POLICIES

- Electric vehicle sales mandate
- Building electrification
- Renewable Portfolio Standard
- Fuel economy standard
- Feebate
- Building efficiency
- Early retirement of power plants
- Grid scale storage
- Industrial efficiency
- Methane capture and destruction
- Carbon tax
- Hydrogen research and development
- Carbon capture and storage
- Afforestation & reforestation
POLICY SCENARIOS

Net zero emissions scenario
INTERACTIVE EMISSIONS IMPACTS

1 MT CO2e

1 MT CO2e

2 MT CO2e

1 MT CO2e

1 MT CO2e

2 MT CO2e
SYSTEM DYNAMICS: PREDICTS COMBINED POLICY EFFECTS

- Distributed Energy Resources
- Clean Electricity Grid
- Building Electrification
- Early Retirement of Fossil Fuel Plants
- Building Energy Efficiency
- Appliance Stock Turnover
OUTPUTS

Energy and Climate
GHG emissions, energy consumption, electricity capacity by type

Health
Health-related pollutants & premature mortality

Economic
GDP, jobs, tax revenue & change in cash flows
ECONOMY WIDE MODELLING

Top-Down Model Results and Inputs

Energy Policy Simulator

Bottom-Up Model Results and Inputs
WHO USES THE MODEL?

- Policy Makers
- Advocates
- Regulators
EXTERNAL REVIEWERS, ADVISERS, AND CONTRIBUTORS

National Labs
- Argonne National Laboratory
- Berkeley Lab
- NREL

Universities
- MIT
- The University of Chicago
- Stanford University
- Tufts University
- The Fletcher School

Global Partners
- World Resources Institute
- Pembina Institute
- KAPSARC
- European Climate Foundation
- National Center for Climate Change Strategy and International Cooperation (NCSC)
MODEL SUBDIVISIONS VARY BY SECTOR

Buildings
- Heating
- Cooling and ventilation
- Envelope
- Lighting
- Appliances
- Other

Urban Residential
Rural Residential
Commercial

Industry and Agriculture
- Cement
- Natural gas and petroleum
- Iron and steel
- Chemicals
- Coal Mining
- Water and Waste
- Other Industries
Other Industries
MODEL SUBDIVISIONS VARY BY SECTOR

**Nonrenewables**

- Hard Coal
- Lignite
- Natural gas (nonpeaker)
- Natural gas (peaker)
- Heavy or residual fuel oil
- Crude oil
- Other petroleum
- Municipal Solid Waste
- Nuclear

**Renewables**

- Hydro
- Offshore Wind
- Onshore Wind
- Solar PV
- Solar Thermal
- Biomass
- Geothermal
MODEL SUBDIVISIONS VARY BY SECTOR

Transportation

Passenger Modes
- Cars and SUVs
- Buses
- Passenger aircraft
- Passenger rail
- Passenger boats
- Motorbikes

Freight Modes
- Light trucks
- Medium and heavy truck
- Freight aircraft
- Freight rail
- Freight shipping

Vehicle Technologies
- Gasoline engine
- Diesel engine
- LPG vehicle
- Natural gas vehicle
- Battery electric vehicle
- Hydrogen vehicle
- Plug-in hybrid vehicle