INTRODUCTION TO THE REMI E3+ MODEL

ENERGY, ENVIRONMENT & ECONOMY

what does REMI say? sm

Presented by Jacob Linger, Economic Associate
Shane Vyskocil, Economic Associate

What is E3+?

THE Brattle GROUP

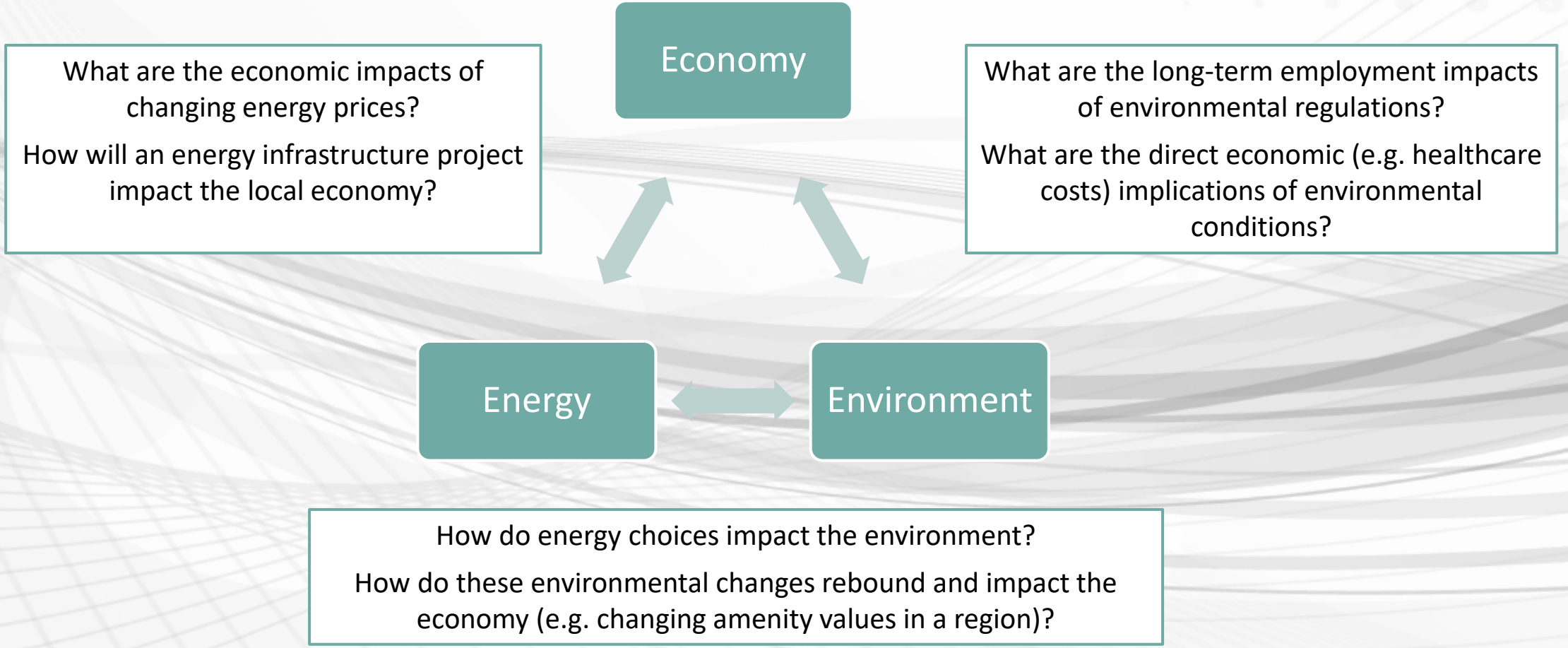
ICF

E3+ is *the leading, widely available solution for analyzing the macroeconomic and demographic impacts of any environmental or energy initiative*

University of Colorado Boulder

NERA ECONOMIC CONSULTING

Energy, Environment & Economic Linkages

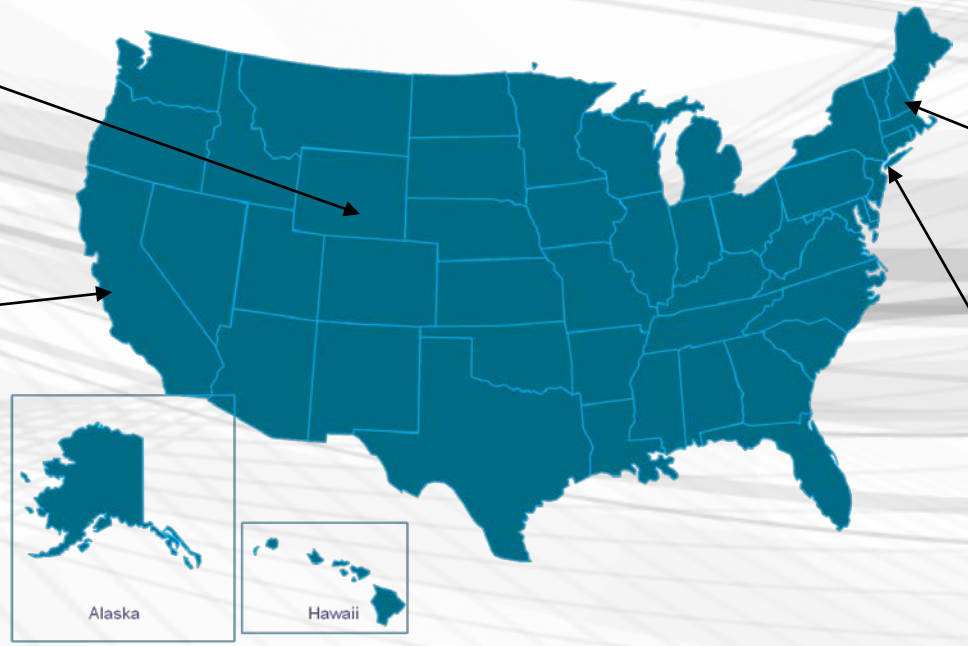


Prior Relevant Analyses

REMI is the industry leader for regional macroeconomic and demographic analyses of energy and environmental issues.

Wyoming:
Impacts of the ZEPHYR power transmission line

California:
Impacts of CAFE emissions standards



New Hampshire:
Merrimack Valley energy reliability project

NYS:
Energy Efficiency Programs analysis (NYSERDA)

New Aspects Unique with E3+

- Specific analysis of Energy and Environment related policies including:
  1. Translator variables for electrical power plant construction and operations and maintenance
  2. Energy Consumption and Carbon Dioxide Emissions Module
  3. Resilience Module
  4. Carbon Tax scenario
  5. Social cost policy variable associated with five types of emissions
  6. Allows for integration with third-party energy models

Translators in the E3+ Model

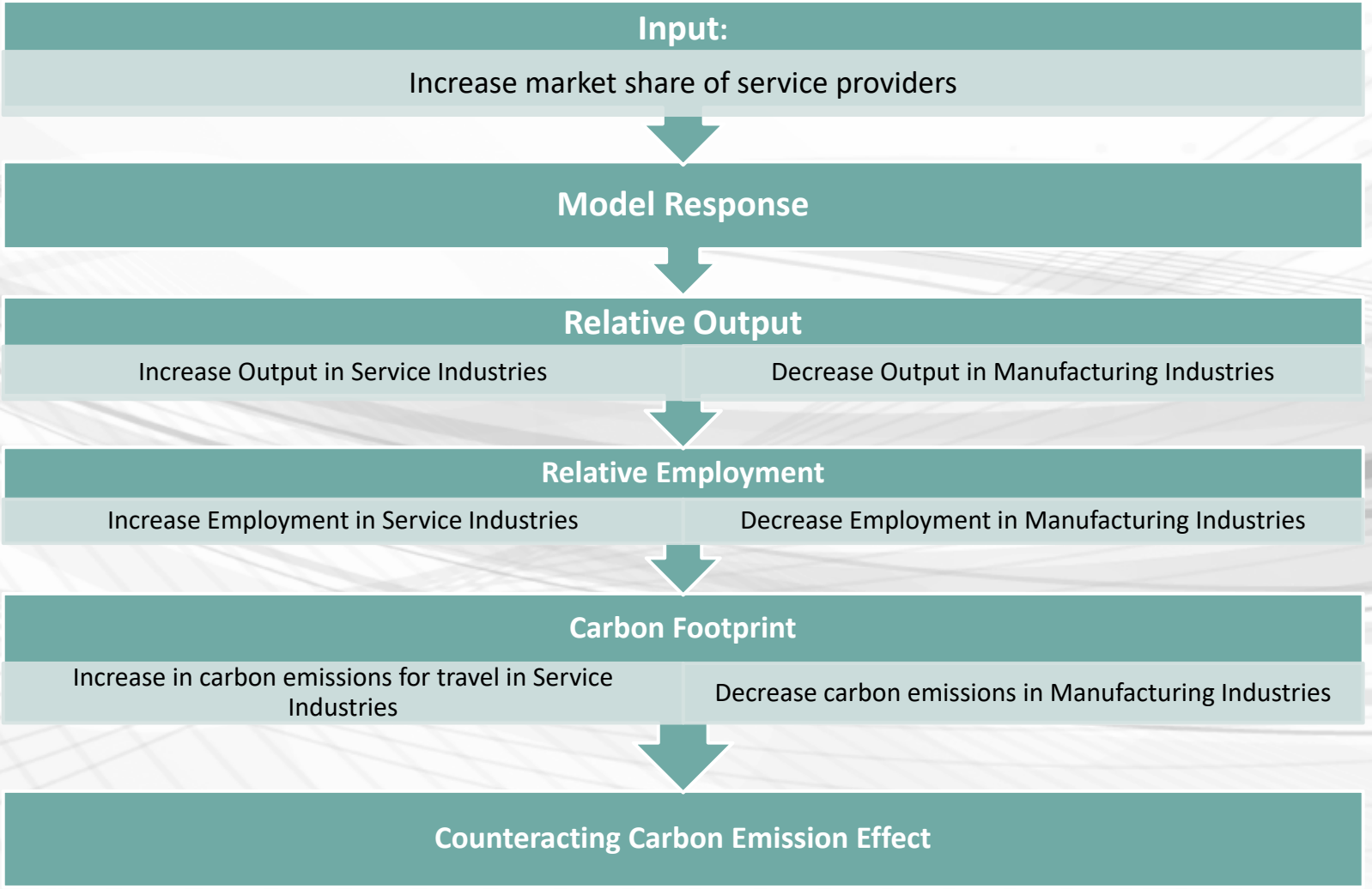
- The model can distribute spending on **construction and operations and maintenance** of a electrical power plant across 160 industries
- Based on studies and data from several sources, including:
  - National Renewable Energy Laboratory
  - Energy Information Administration

Accounts for:
Nuclear, Solar, Natural Gas, Coal, and Wind Energy

REMI E3+ Emissions Module

- Dynamic Carbon Footprint
  - Forecast results include Energy Consumption and Carbon Dioxide Emissions
- Uses EIA data to generate parameters that are applied to economic impact results
  1. Btus consumed by sector and source
  2. CO2 emissions by sector and source
  3. Residential, Industrial, Commercial, and Transportation sectors

Dynamic Carbon Footprint – A Hypothetical E3+ Application:



Resiliency Module in the E3+ Model

- E3+ can now produce an automatic calculation discussing resiliency through a forecast's “Resiliency Report”
  - This compares a no-action baseline disaster scenario to an a resilience investment scenario
- The model produces a **Resilience Loss Reduction Potential** figure:

$$RLRP = \frac{Avoided\ Losses}{Maximum\ Potential\ Losses}$$

Model Demonstration