Ireland's Sustainable Energy Investment Model (SEIM)

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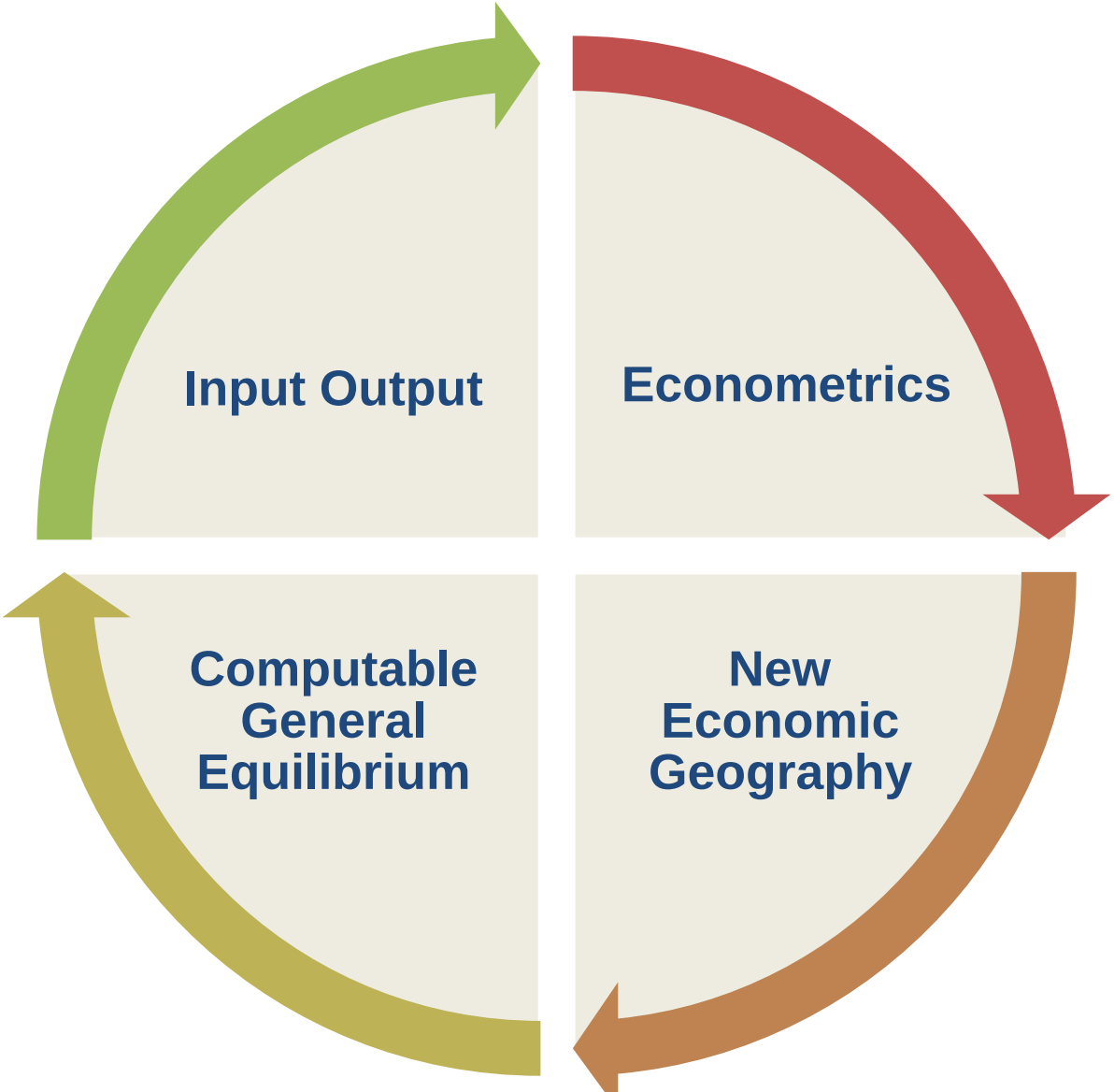
Introduction to the Sustainable Energy Investment Model (SEIM)

- SEIM based on popular American model REMI (Regional Economic Models, Inc.)

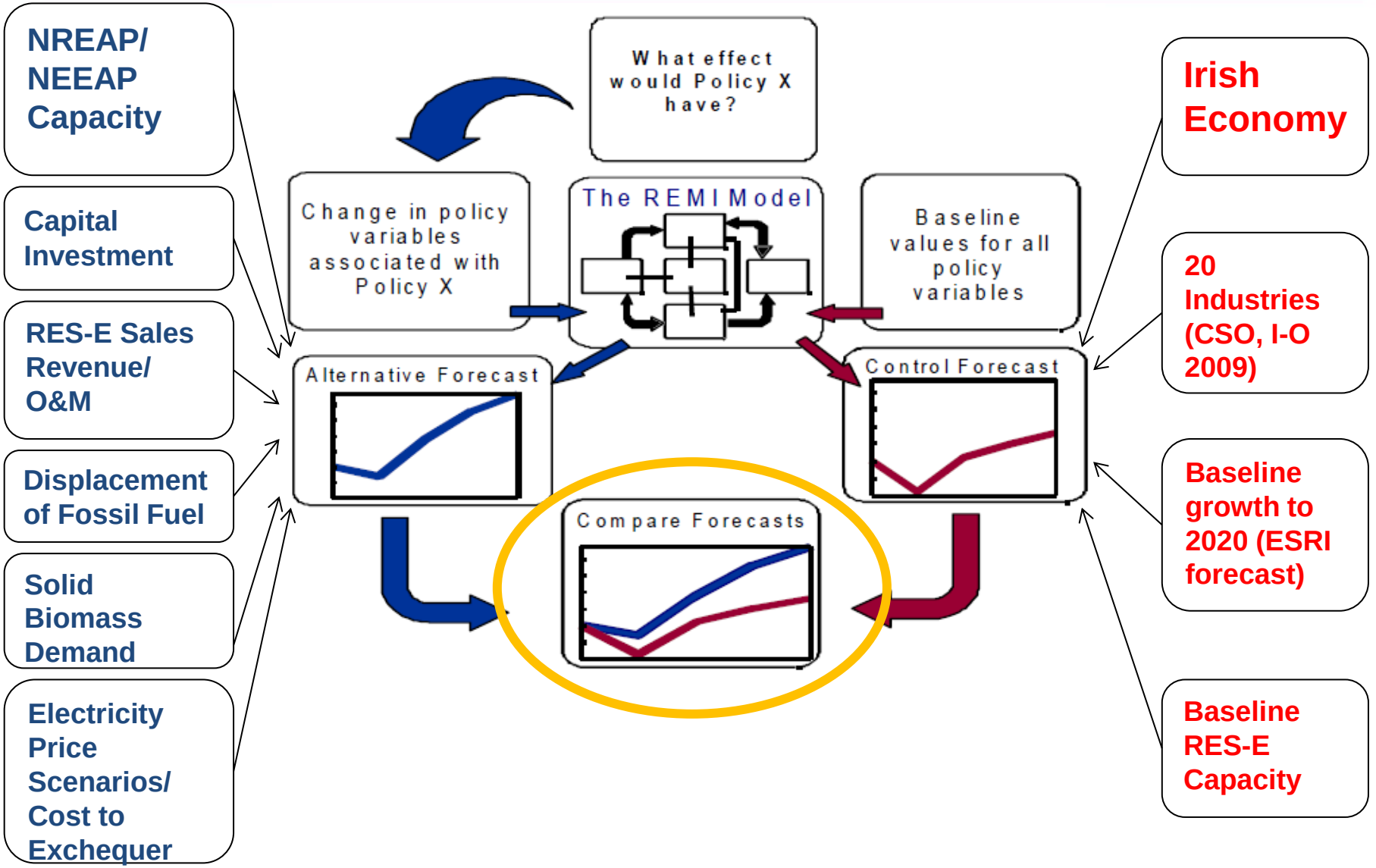
- Net Employment and Macroeconomic impact of Ireland's 2020 NREAP/NEEAP Targets.

- Presentation outline:
  - SEIM Methodology/Structure
  - SEAI Inputs and Outputs
  - Interface
  - Limitations and Benefits
  - Some Results

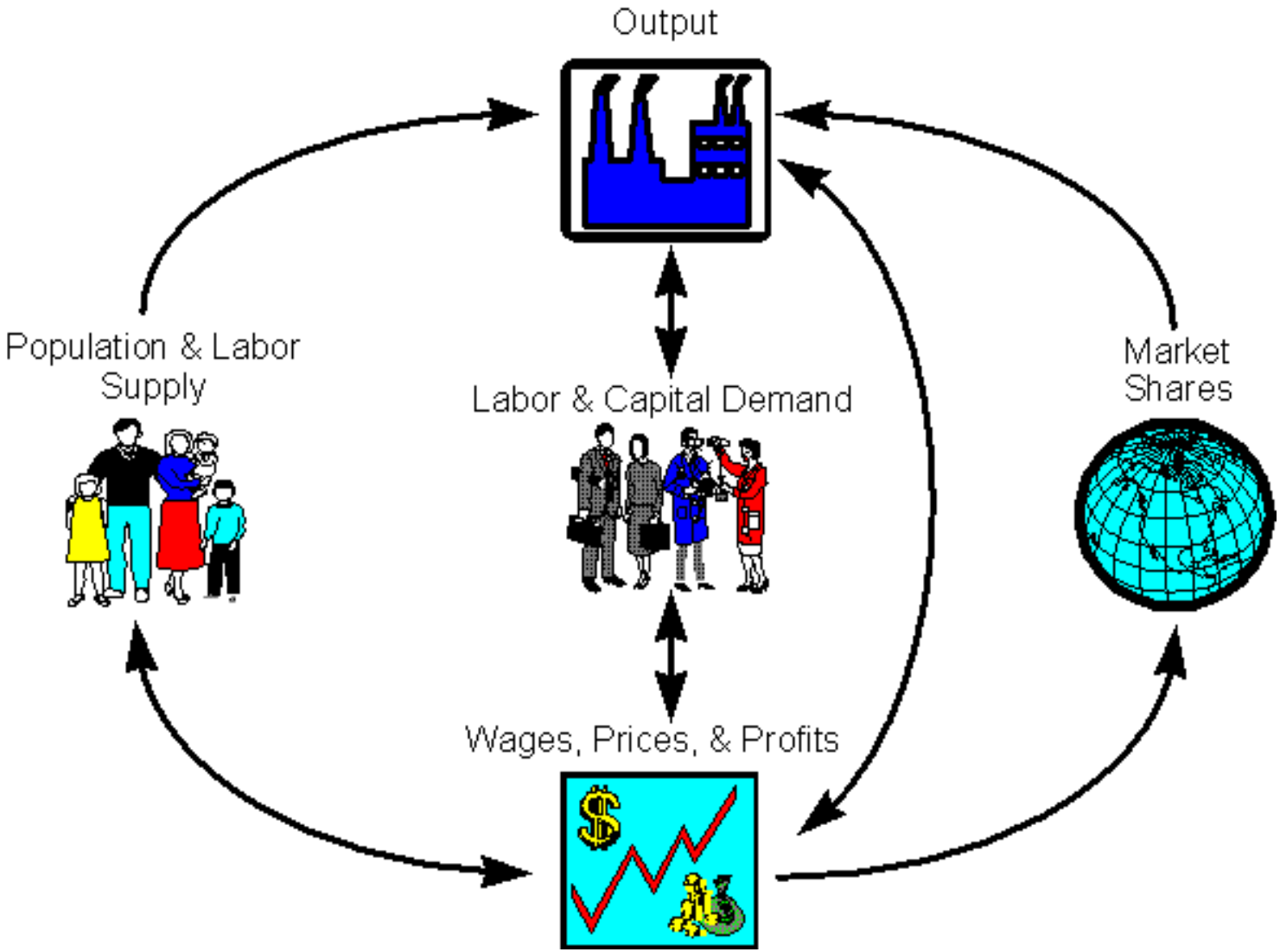
Methodology



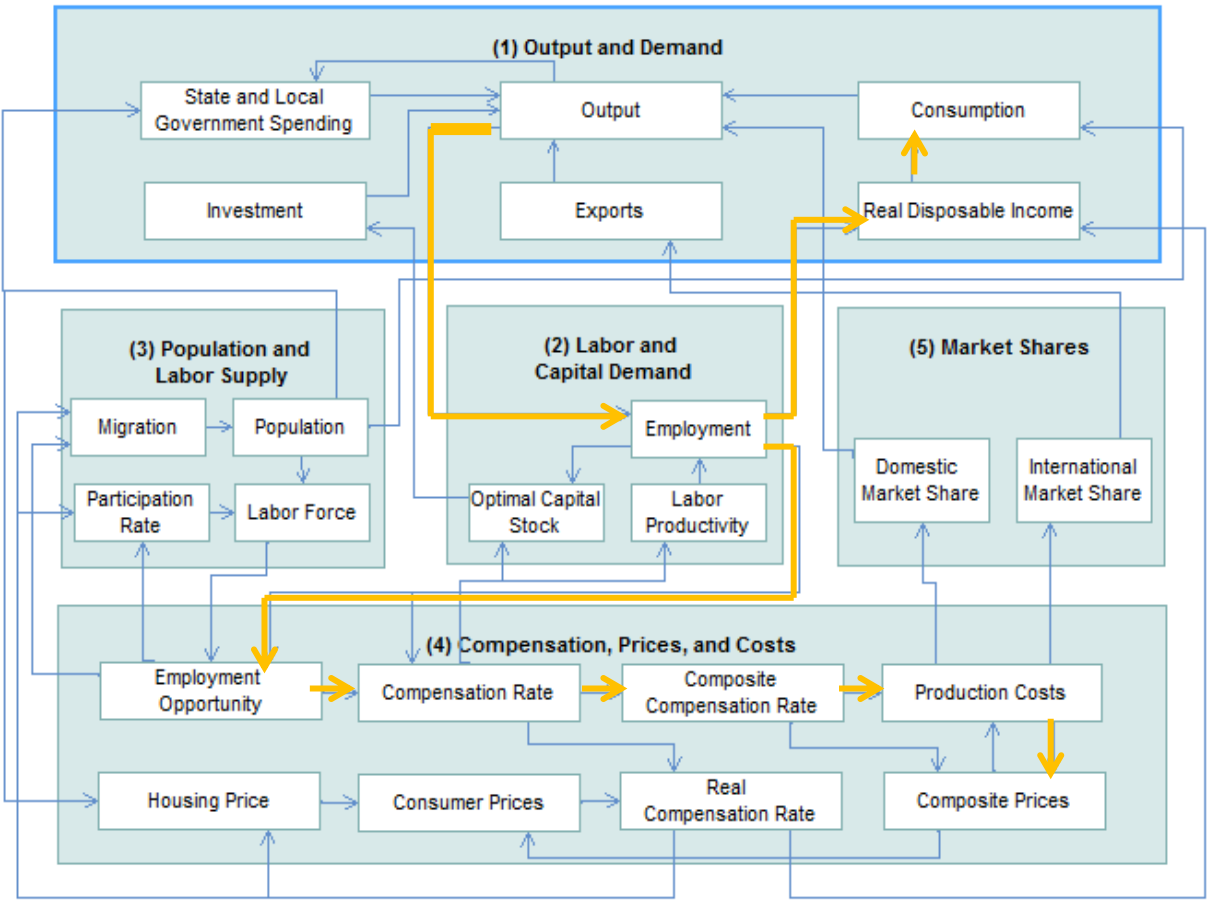
Model Calibration



Model Structure



Policy Variables



- **Model Blocks and Linkages:** A change in one input will create a reactionary change in all other endogenous areas of the economy

- **E.g. Capital investment in onshore wind**:

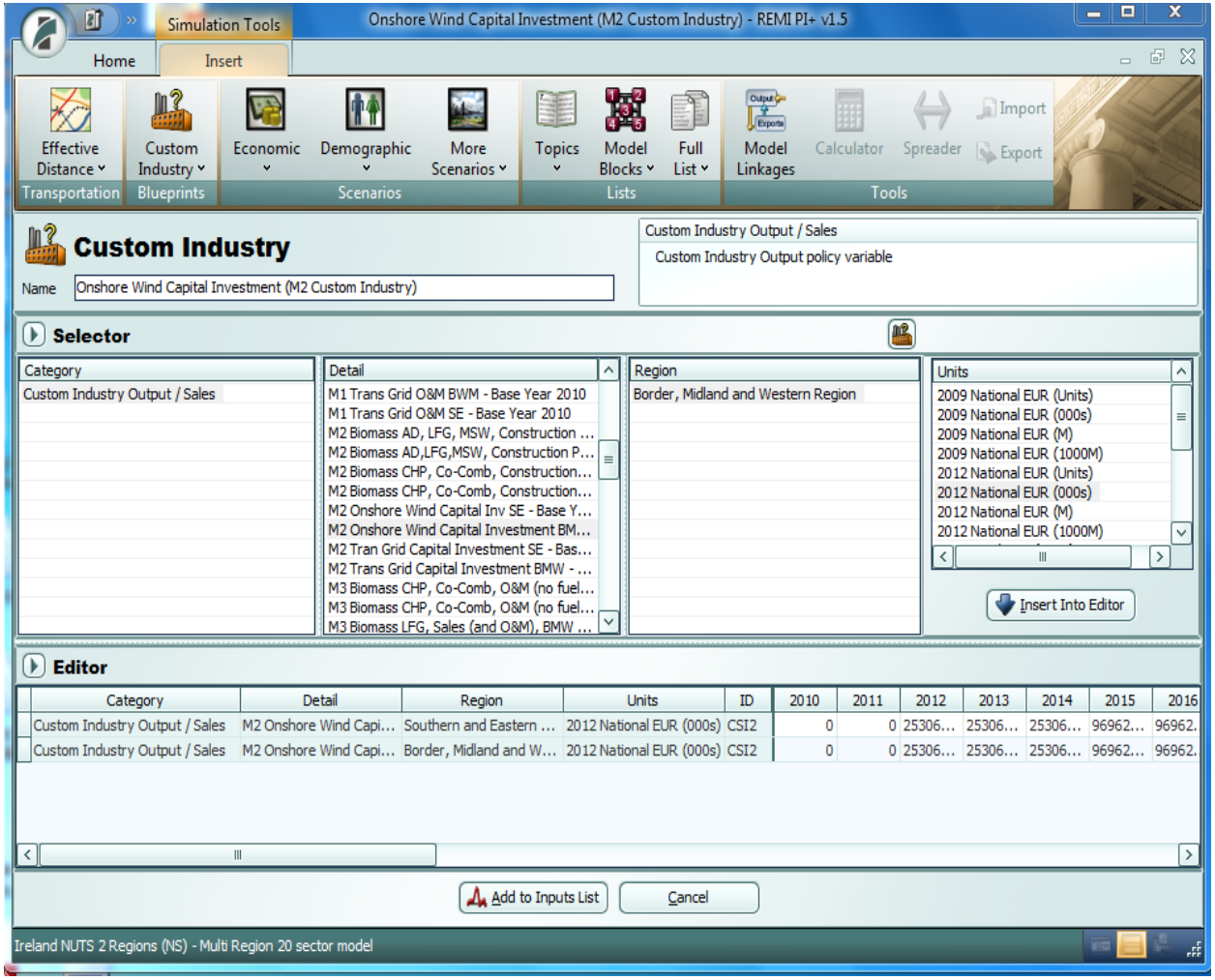
→ Demand increases, primarily in construction

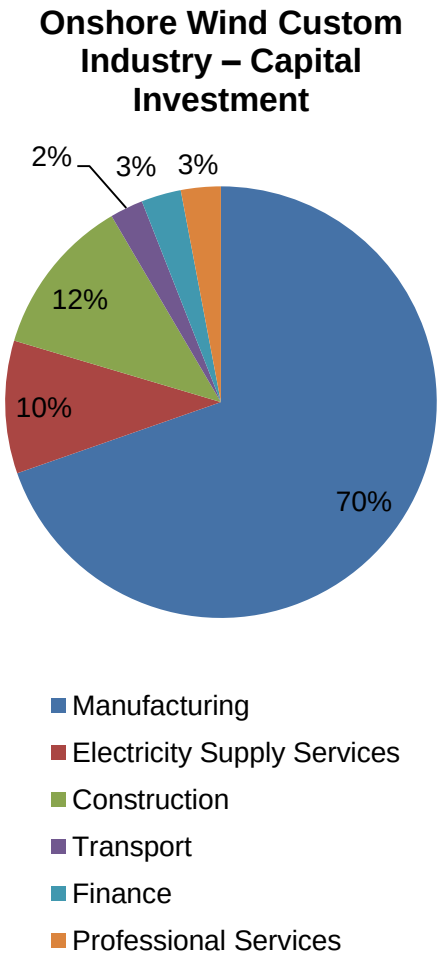
→ Generates employment

→ Employment stimulates higher disposable income and consumption

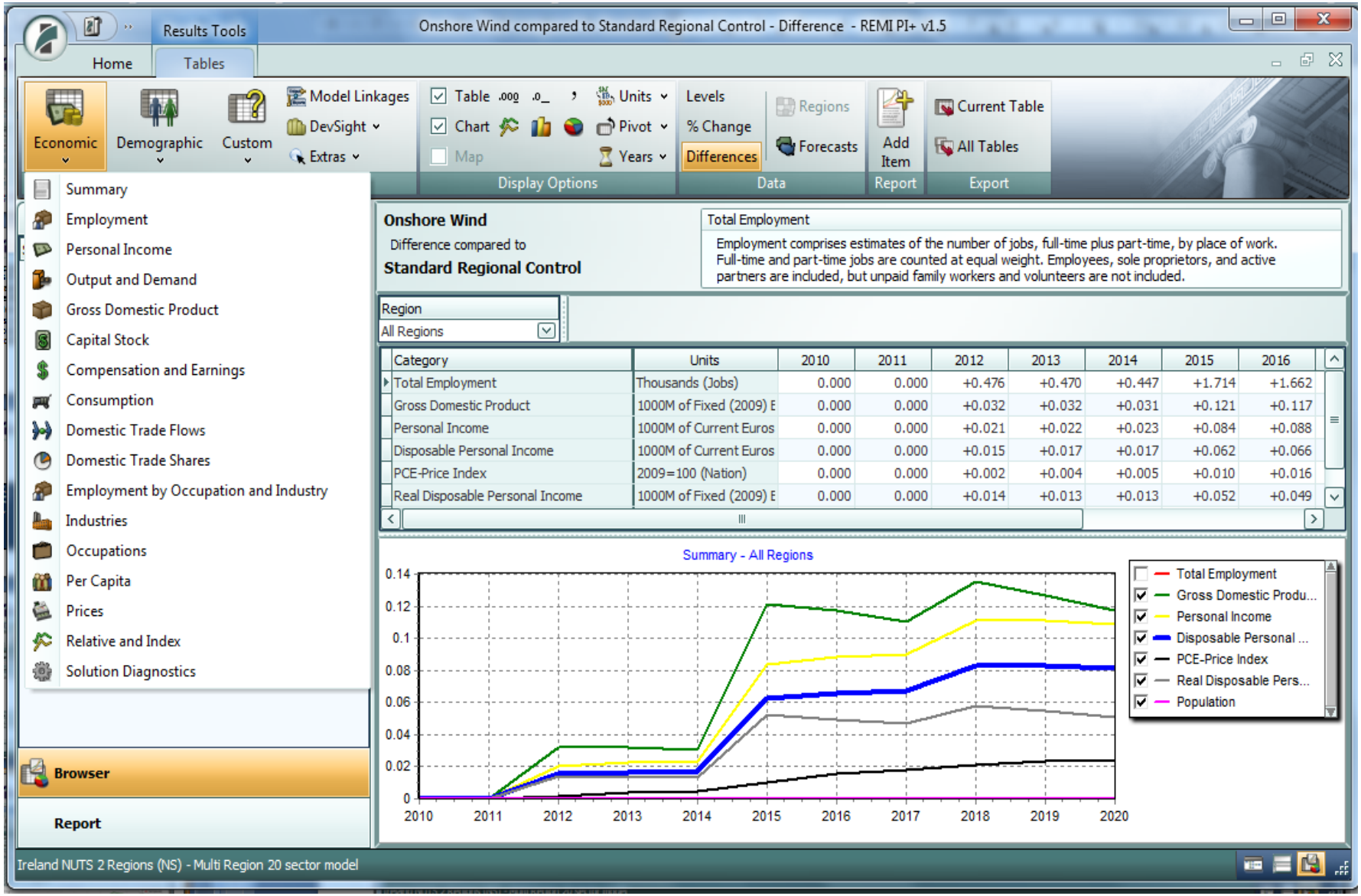
→ In price block, employment feeds into a change in employment opportunities, compensation, production costs, and prices

Model Interface - Inputs





Model Interface - Outputs



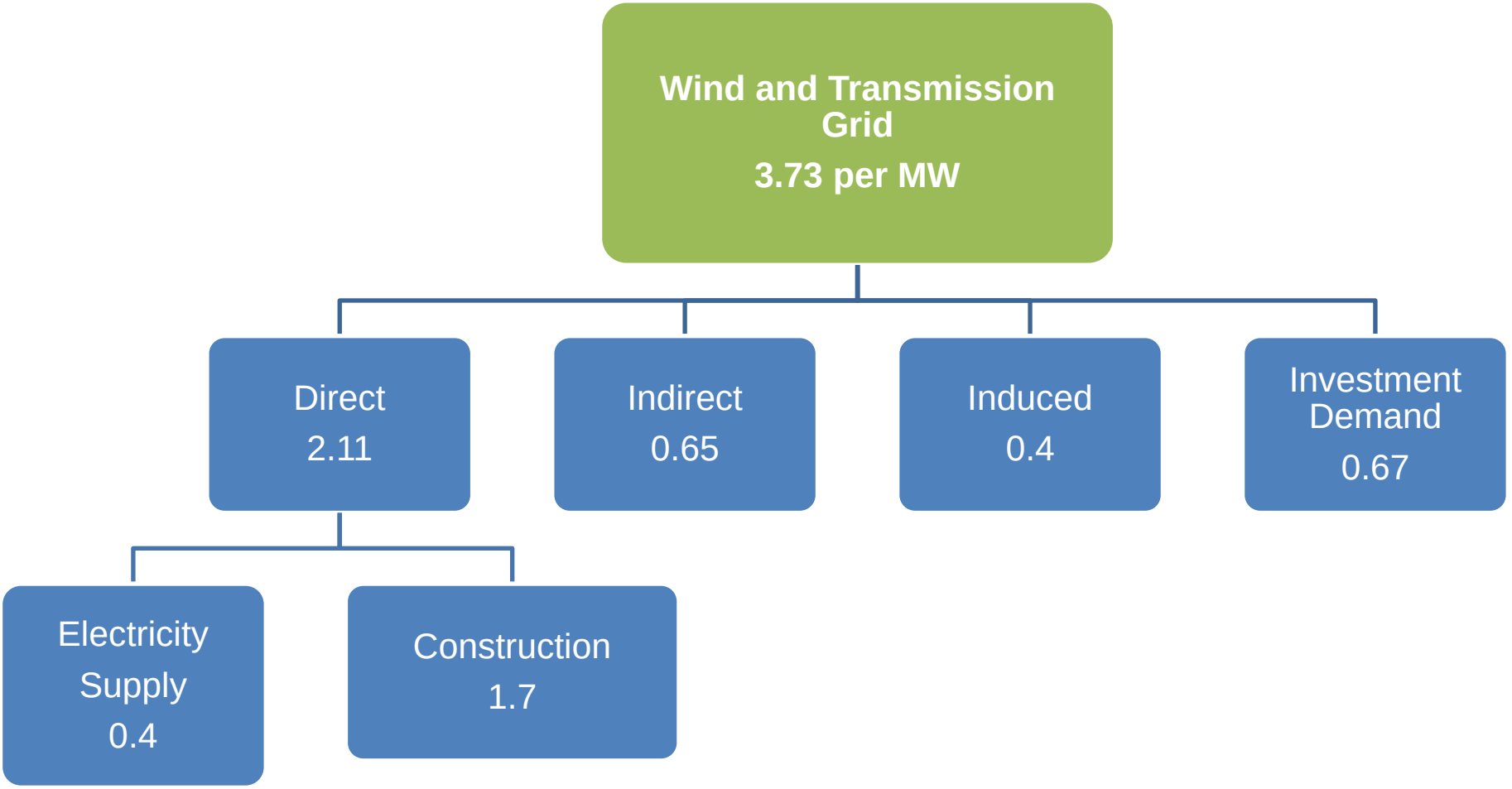
Limitations

- Fixed intermediate input proportions
- No monetary or fuel price block
- Estimated regional industrial activity
- Some US parameters
- Global economy exogenous
- Relatively complex model with large data requirements and some training required for interpretation

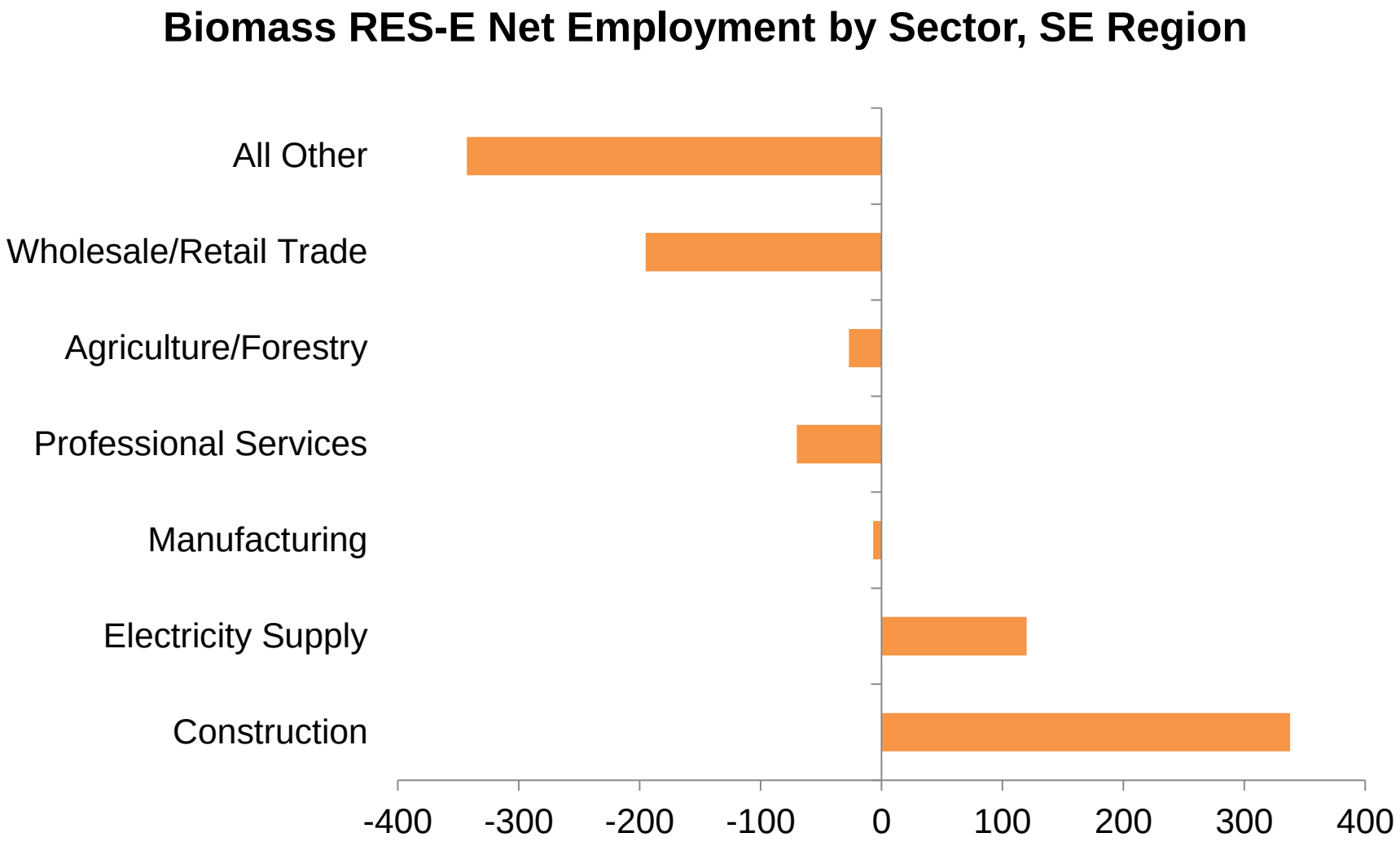
Benefits

- Combines benefits of multiple methodologies
- Forecasting, industrial disaggregation, inter-regional analysis
- Substitution effects
- Dynamic incomes, prices, and costs subject to scarce resources
- Wide range of outputs and policy analysis options
- Clear breakdown of direct, indirect and induced net employment by sector

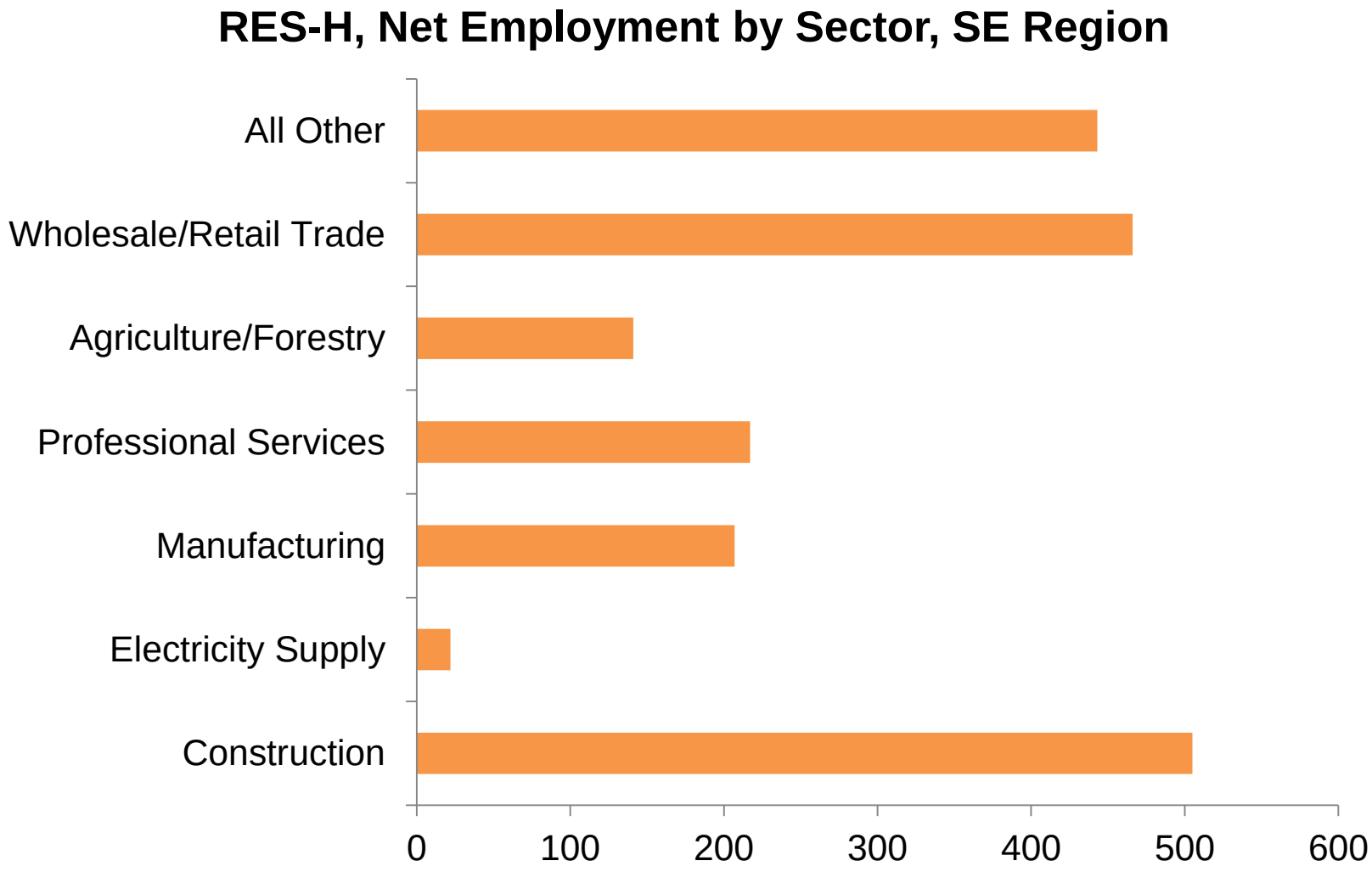
Initial Outputs: Onshore Wind, Net Employment per MW 2020



Initial Outputs: 5% Biomass RES-E 2020 (imported solid biomass, with 2% electricity price increase)



Initial Outputs: 12% RES-H 2020 (imported solid biomass)



Lessons and Future Analysis

- **Lessons:**

  - Collaboration with stakeholders important
  - Considerable background analysis required for ‘custom industries’ and calculation of inputs into the model

- **Forthcoming and Future Analysis:**

  - Reports specific to Onshore Wind, Biomass/Renewable Heat and Energy Efficiency Targets
  - Post 2020
  - Utilise price outputs from energy models

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Thank you.
Any questions?

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