# Working Group on diagnostics

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# NAVIGATE

## IAM diagnostic exercise

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# Model diagnostics

**Why:**
- Classify models based on their behavior, and (aim to) understand reasons for differences

**How:**
- Assessing model responses (indicators) in simple, stylized scenarios
- Based on work in AMPERE, ADVANCE and NAVIGATE

**Analogous to climate models**
- Set of standard indicators exists that classify behavior: climate sensitivity (CSE), transient climate response (TCR), Transient climate response to cumulative emissions (TCRE)
- In principle arbitrary numbers, but shows which models are "cool" or "hot"; fast or slow; sensitive to carbon emissions
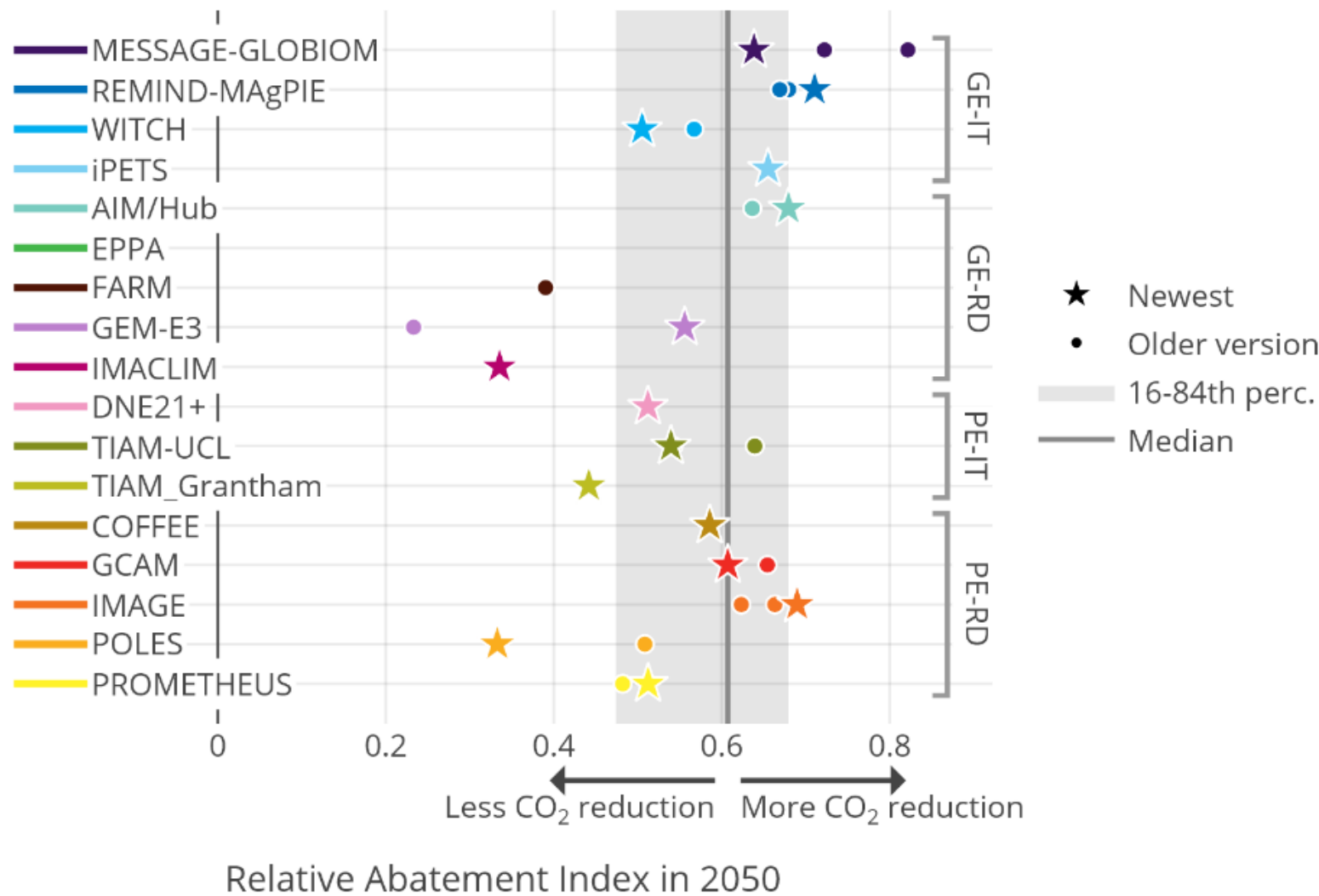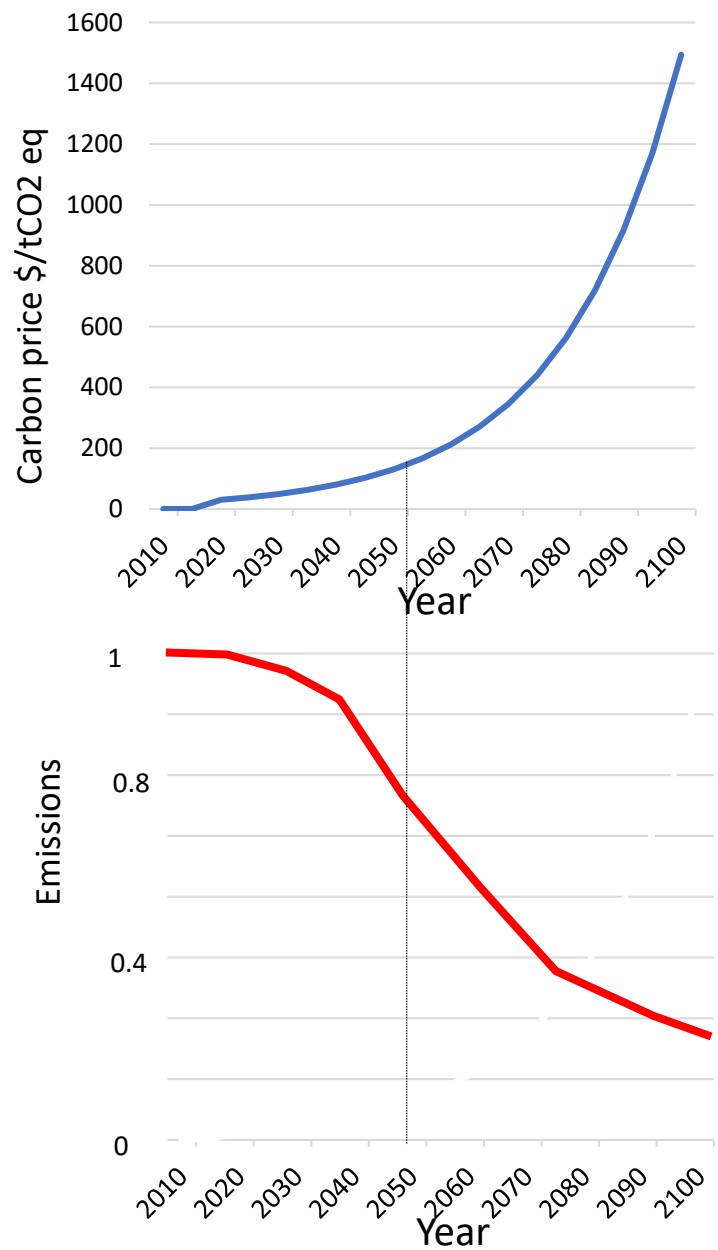
# Model diagnostics

**Indicators – Proposal for NAVIGATE**

(all in 2050 and for standardized carbon tax)

- Relative Abatement Index (RAI)          -          % abatement relative to baseline
- Emission Reduction Type index (ERT)          -          Supply vs. Demand side emission reductions
- Transformation Index (TI)          -          Overall transformation speed energy system
- Fossil Fuel Reduction (FFR)          -          % fossil fuel reduction compared to 2020
- Inertia Timescale (IT)          -          Conversion speed of price shock and default (yrs)
- Cost per Abatement Value (CAV)          -          Policy costs / marginal costs

Can not only classify models – but also track progress

# Relative Abatement Index (RAI): Relative emission reduction after 30 years of introduction of tax.