

### **Session Introduction: How can emission pathway modeling contribute to raising ambition levels of nationally determined contributions?**

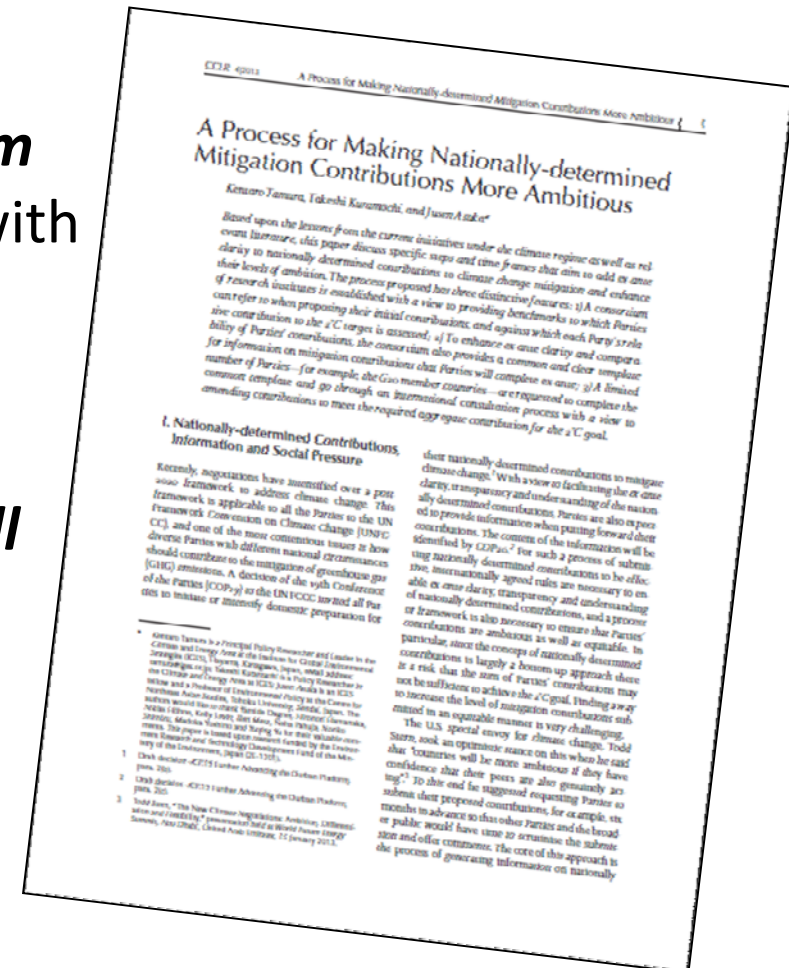
Kentaro Tamura, PhD  
Area Leader/Principal Policy Researcher  
Climate and Energy Area, IGES

# Background

- Critical time!
- INDCs (intended nationally determined contributions)
  - Submission of INDCs in well advance to COP21 (or by March 2015 by those which are ready to do so)
  - Scope and content of INDCs will be decided at COP20.
- BUT,
  - Risk of insufficient levels of emissions reduction in terms of attaining the 2°C target
- ***What can research community do for enhancing INDCs?***

# Background

- IGES proposal
  - ✓ To establish a **research consortium** of respected research institutes with a view to providing emission pathways **benchmarks against which each Party's relative contribution to the 2°C target will be assessed.**
- How to develop such benchmarks?



Tamura, K., et al., 2013. "A Process for Making Nationally-determined Mitigation Contributions More Ambitious", *Carbon and Climate Law Review*, 4/2013: 231-241. <sup>3</sup>

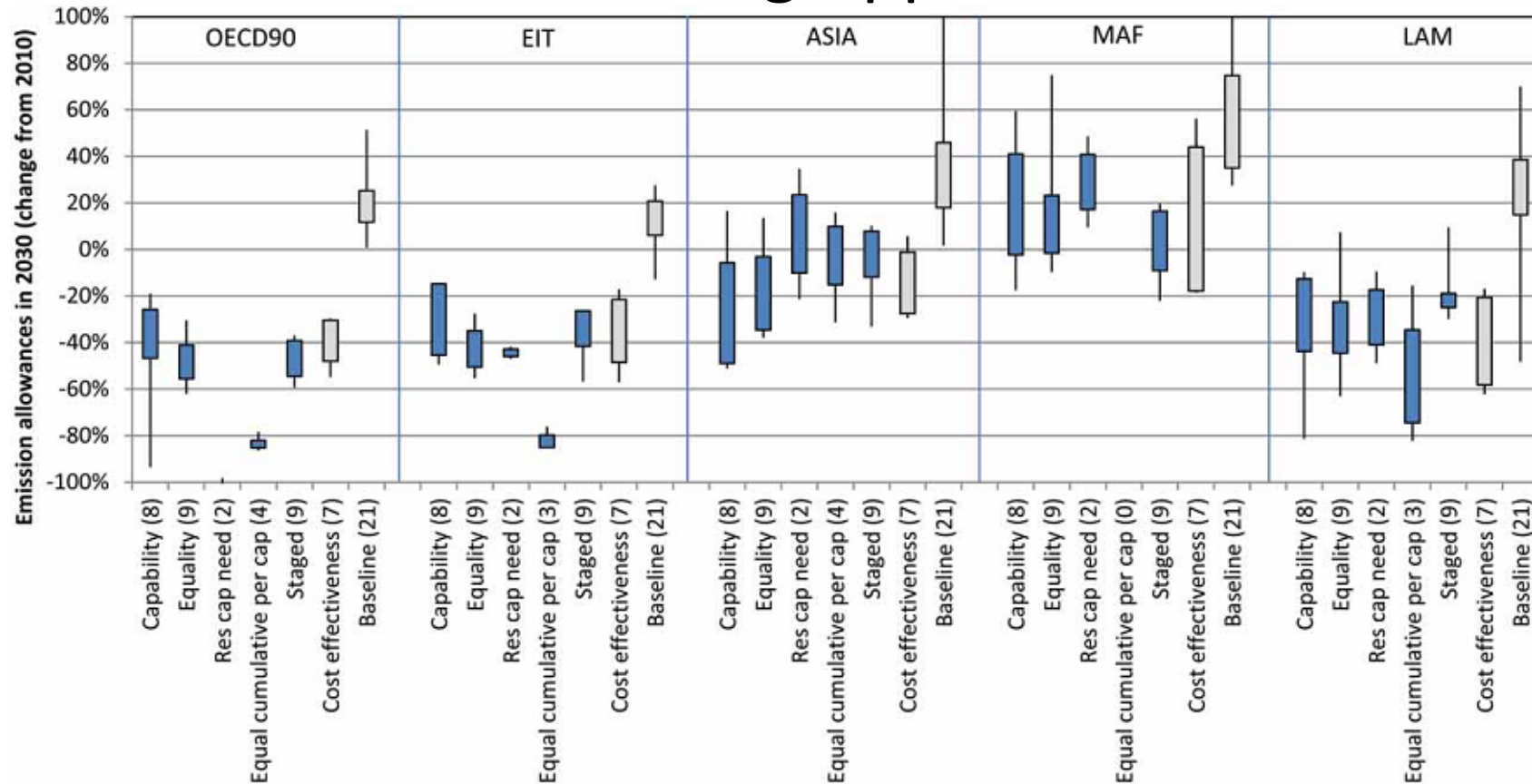
# Two Approaches

	<b>Top-Down</b>	<b>Bottom-Up</b>
<b>Country-level long-term emission pathways</b>	Global carbon budget allocated, based on equity indicator(s)	Determined by national technology-based energy balance models
<b>Future global cumulative GHG emissions</b>	Fixed global carbon budget that achieves 2 ° C target	Sum of countries' emission pathways
<b>Consistency with the 2 ° C target</b>	Yes	Not necessarily (long-term mitigation target may be)
<b>Consideration of techno-economic feasibility and national circumstances</b>	Depending on the equity principle(s) applied	Yes

Effort-sharing approaches

AIM/Enduse Model, DDPP

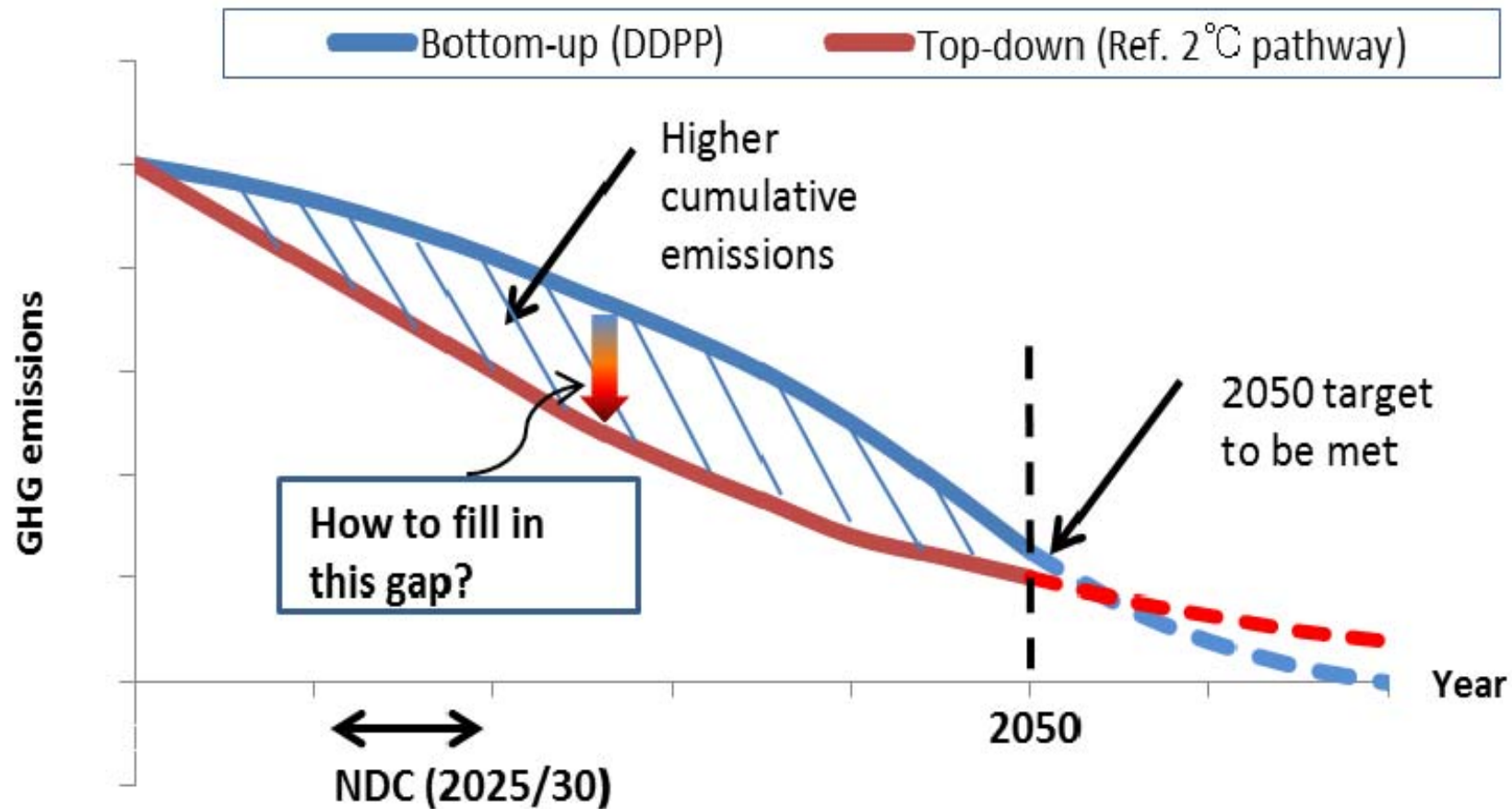
# Benchmark Ranges based upon Top-down, Effort-sharing Approaches



Source: Hoehne et al. (2014)

- More useful for assessment, if the figures are disaggregated to country level for major emitting economies.
- Literature coverage can be strengthened and accountable if data sources are more regionally balanced.

→ Role of the Research Consortium?



- How can short/mid-term actions be linked to long-term goals?
- Whether and how can bottom-up approaches and top-down approaches be used to fill in the gap in a complementary manner?