

Integrated Assessment Modeling of post-growth scenarios

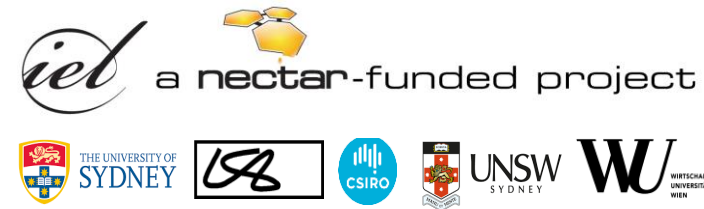
Presenter: **Dr. Mengyu Li**

Postdoctoral Research Fellow

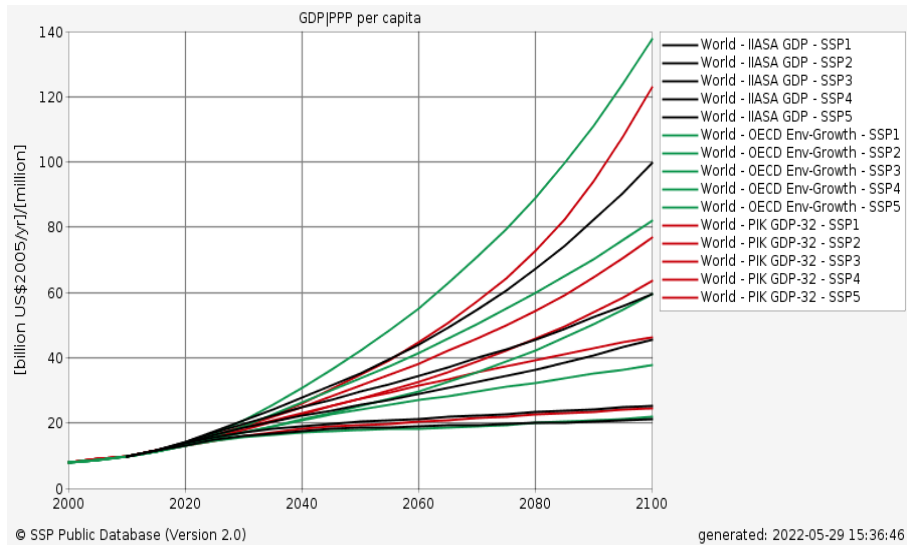
Integrated Sustainability Analysis

University of Sydney, Australia

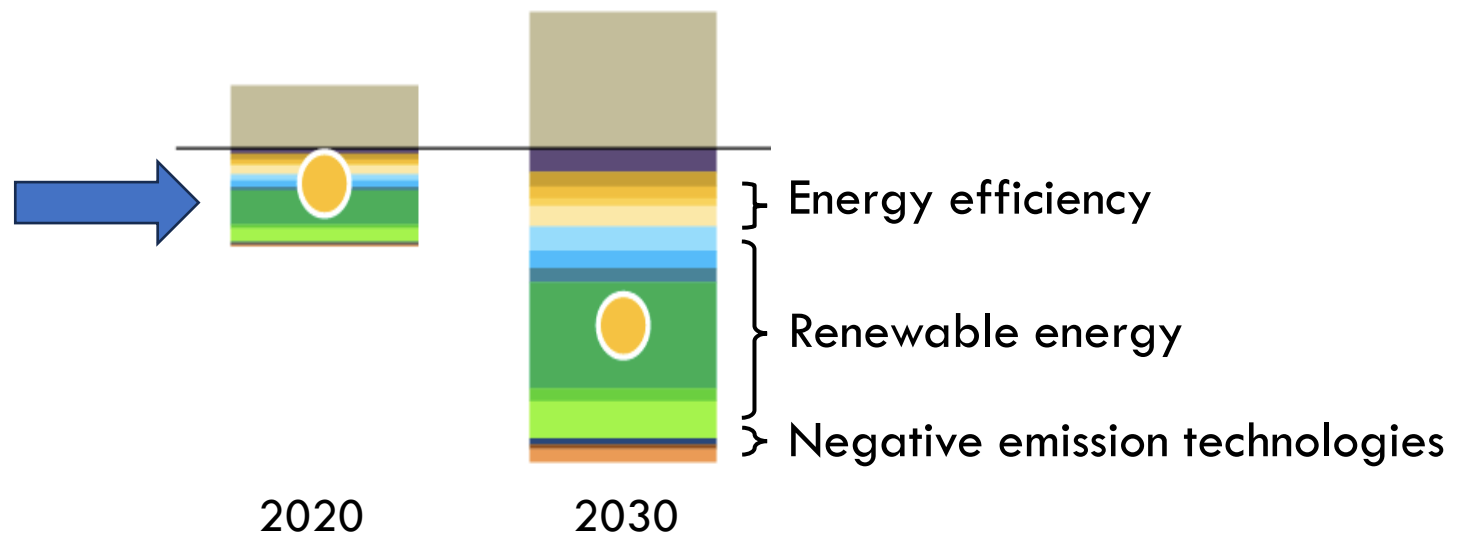
mengyu.li@sydney.edu.au



Continued growth in mitigation scenarios



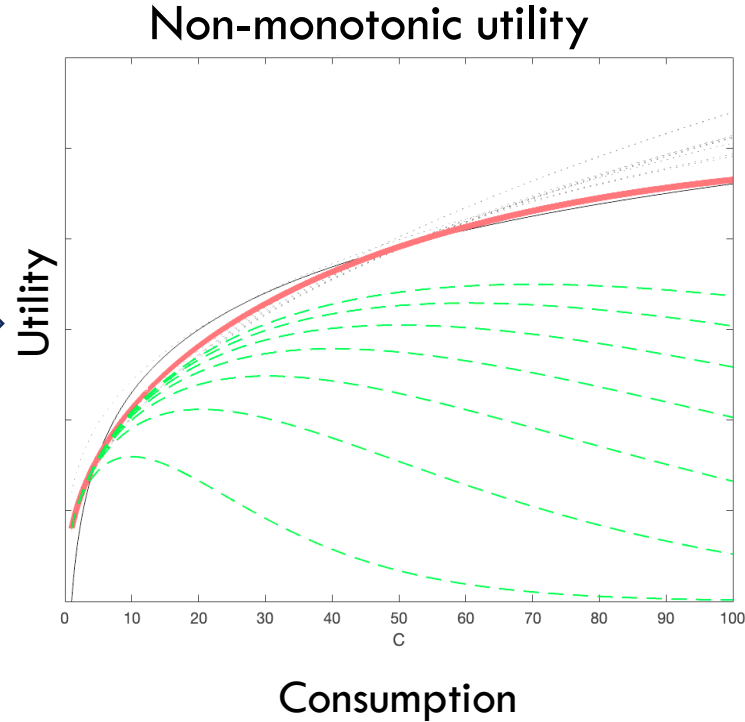
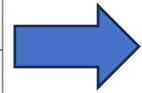
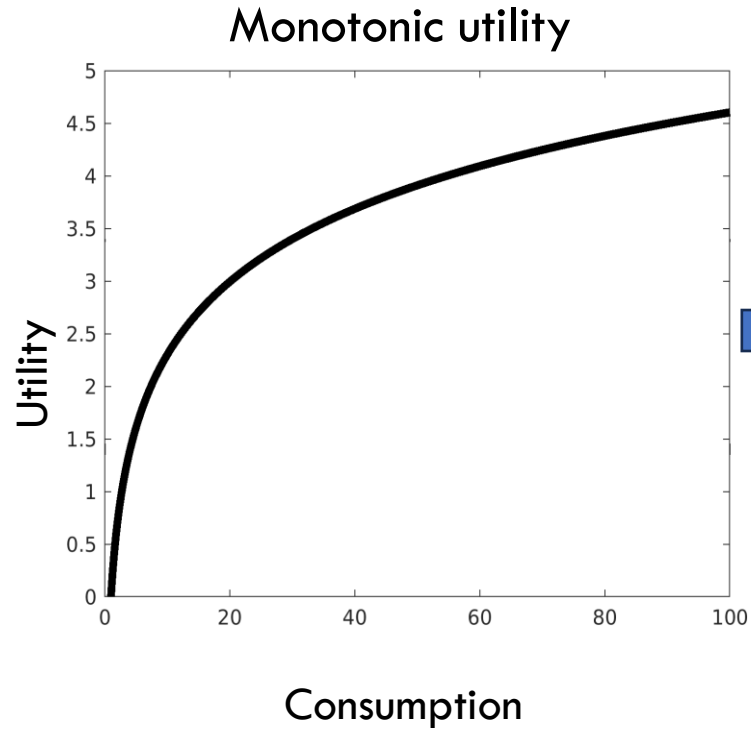
Increasing consumption



Three emission reduction levers

Question: if and how degrowth is needed as the fourth lever?

Modifying the 'Growth-embedded' MESSAGE IAM to enable degrowth scenarios (Li&al)



Modifications:

- Non-monotonic utility
- Disable internal GDP and demand calibration;
- Iteration variable: demand

Solutions:

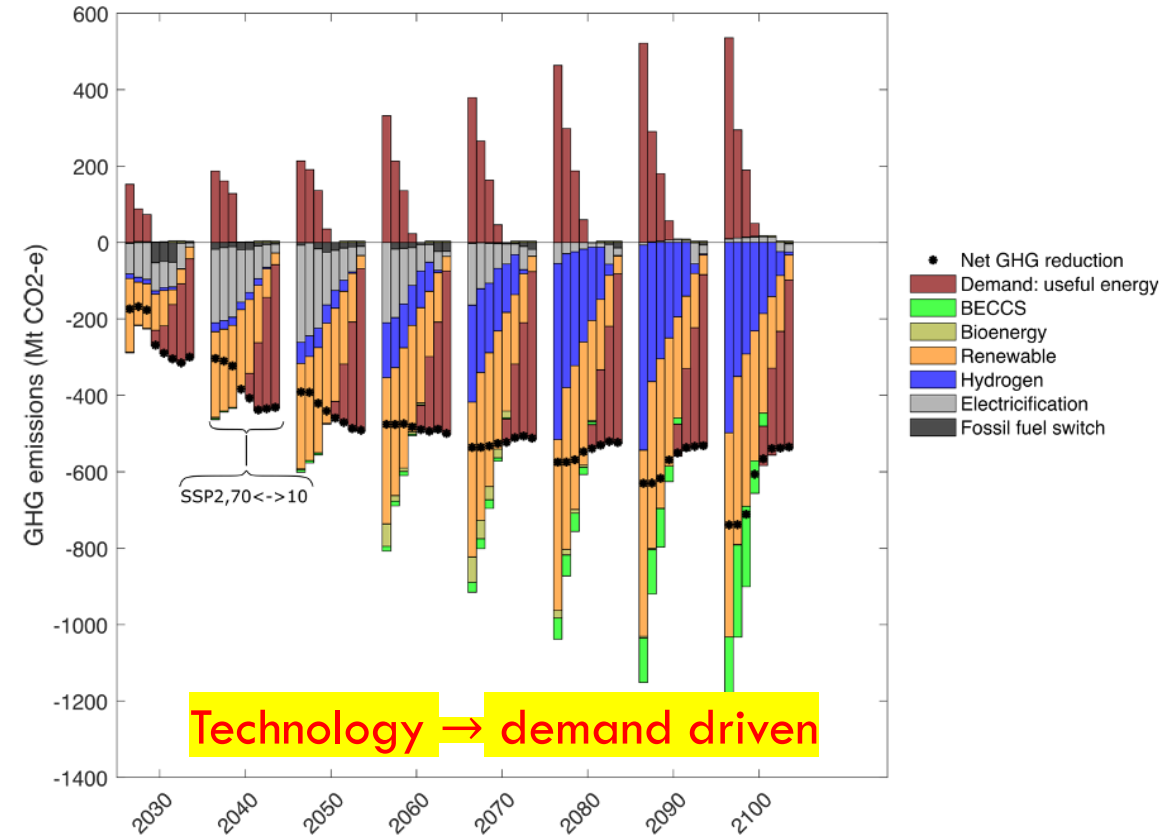
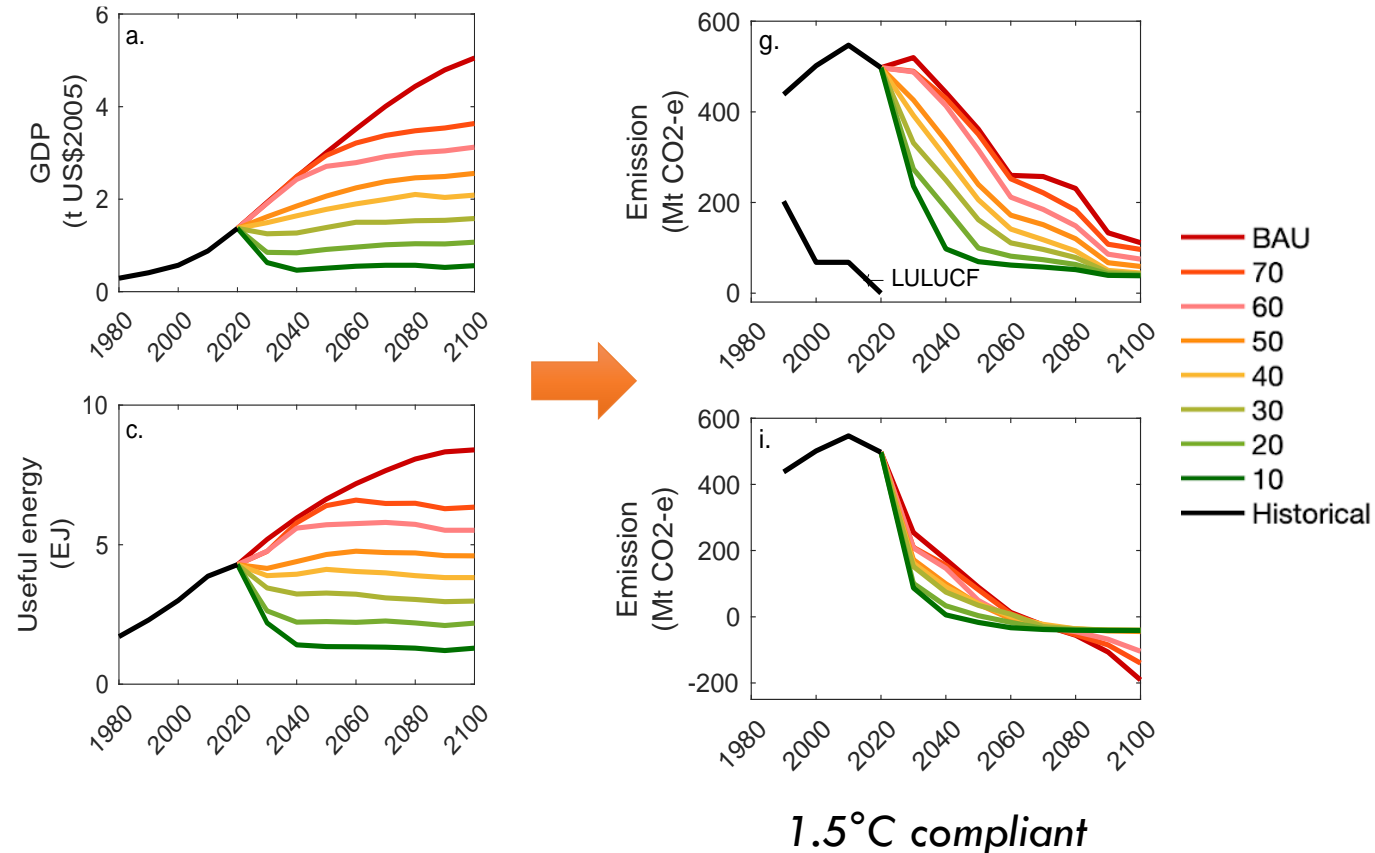
- Endogenous GDP, demand, and techno-economic feedback

Degrowth Scenarios (Li&al): Individual consumption: 70 and 10 US \$k/capita

Endogenous GDP & demand

Renewable-dominated

Emission reduction levers



Economic feedback on emissions

Levers in 1.5°-compliant pathways