

Motivation

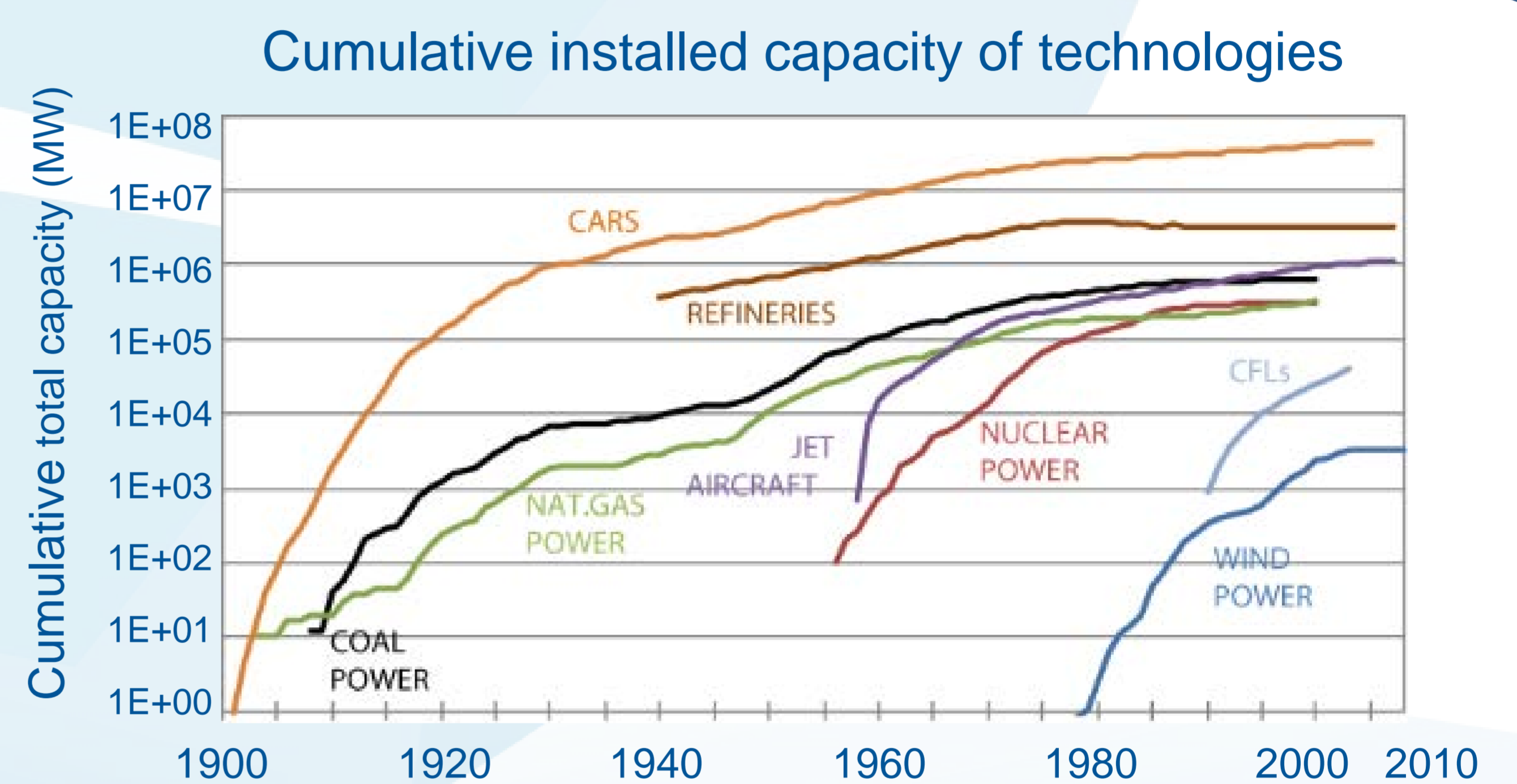
TNT databases are open research tools for IIASA and the science community helping to understand *trends, patterns, and dynamics of technological change*.

Key features

- ✓ The databases contain *historical data of relevance for future scenarios*
- ✓ Combine *supply and end-use* perspectives
- ✓ Describe transformation *outputs/services* in addition to *inputs*

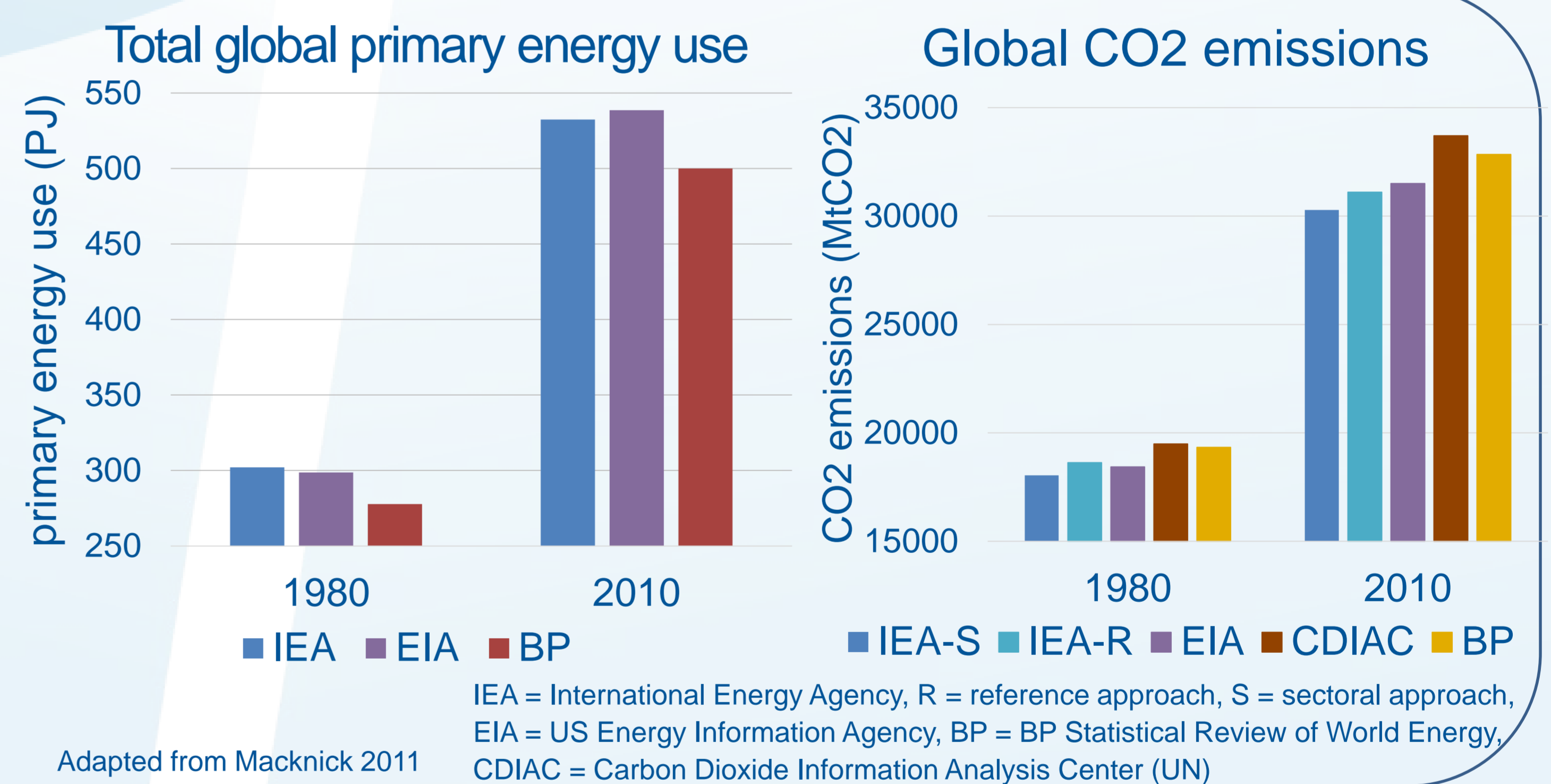
Scaling Dynamics of Energy Technologies (ST-ET)

- historical patterns of technological change
- “reality check” for scenario formulation and validation



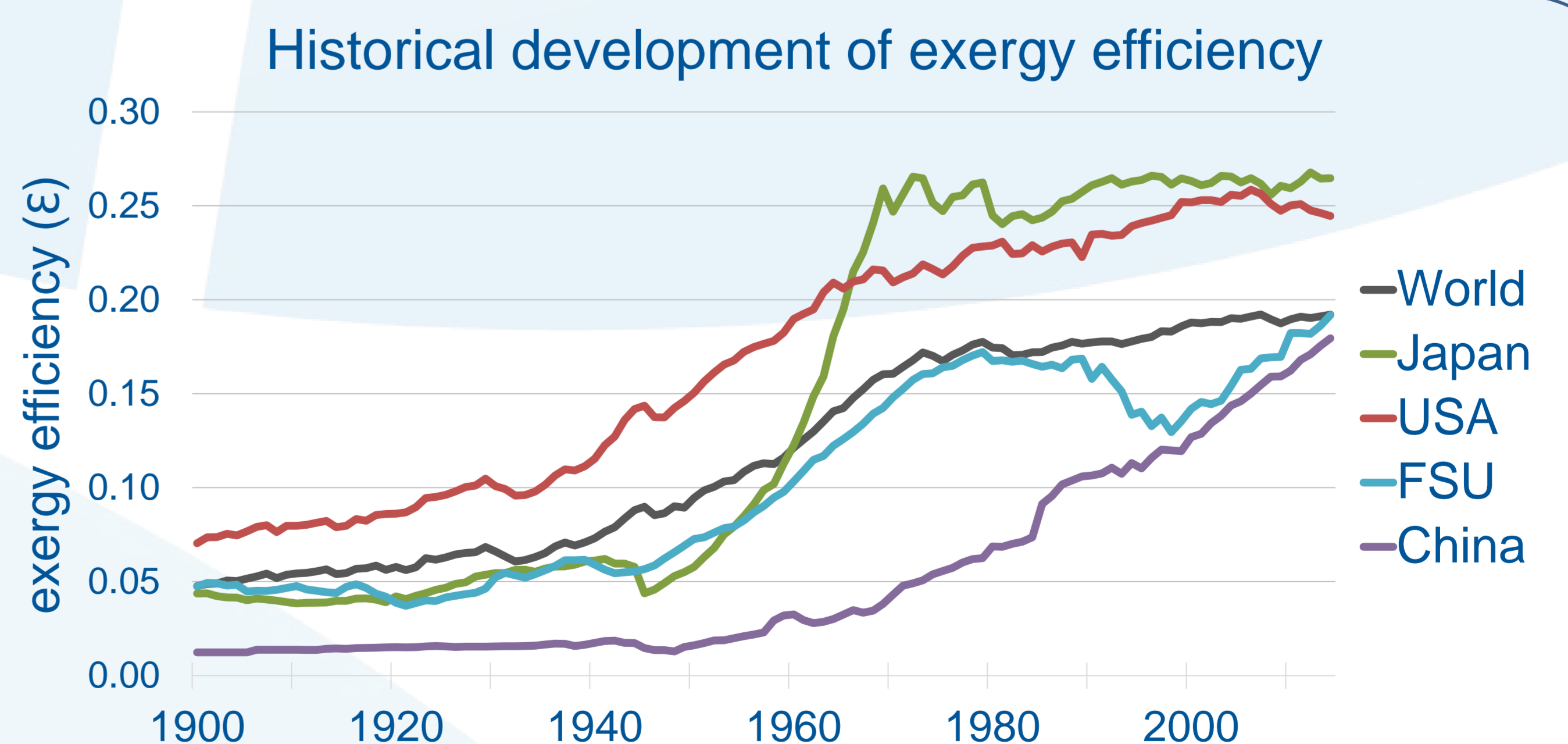
Energy and Carbon Emissions Inventories Database (ECDB)

- compares & harmonizes energy and carbon emissions data published in major international inventories (IEA, EIA, BP, UN)
- quantifies inventory and carbon-tax uncertainty

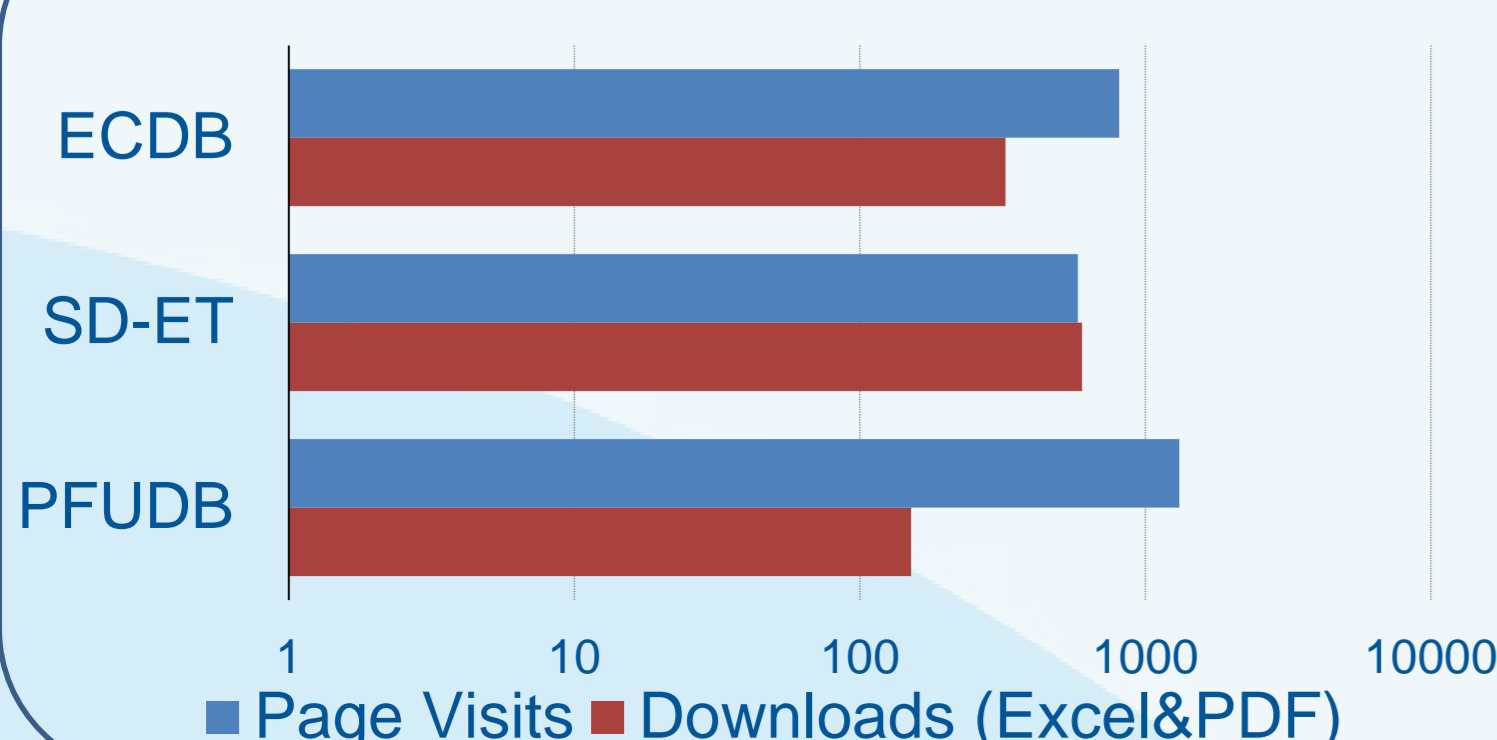


Primary, Final and Useful Energy Database (PFUDB)

- primary, final, useful energy and exergy
- data: 1900 to 2014
- disaggregation: spatial, sectorial, energy carriers, end-use types



Access statistics



References

- Wilson, C. (2012). Up-scaling, formative phases, and learning in the historical diffusion of energy technologies. *Energy Policy* 50: 81-94.
- Bento, N. (2013). New Evidences in Technology Scaling Dynamics and the Role of the Formative Phase. Laxenburg, Austria: IIASA.
- Wilson, C., Grubler, A., Bauer, N., Krey, V., Riahi, K. (2013). Future capacity growth of energy technologies: are scenarios consistent with historical evidence? *Climatic Change* 118(2): 381-395.
- De Stercke S (2014). Dynamics of Energy Systems: A Useful Perspective. IIASA Interim Report. Laxenburg, Austria: IIASA.
- Macknick, J. (2011). Energy and CO2 emission data uncertainties. *Carbon Management* 2(2): 189-205.