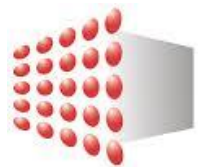


Charting ASEAN's energy efficient future

Yang LIU

Singapore, October 2017



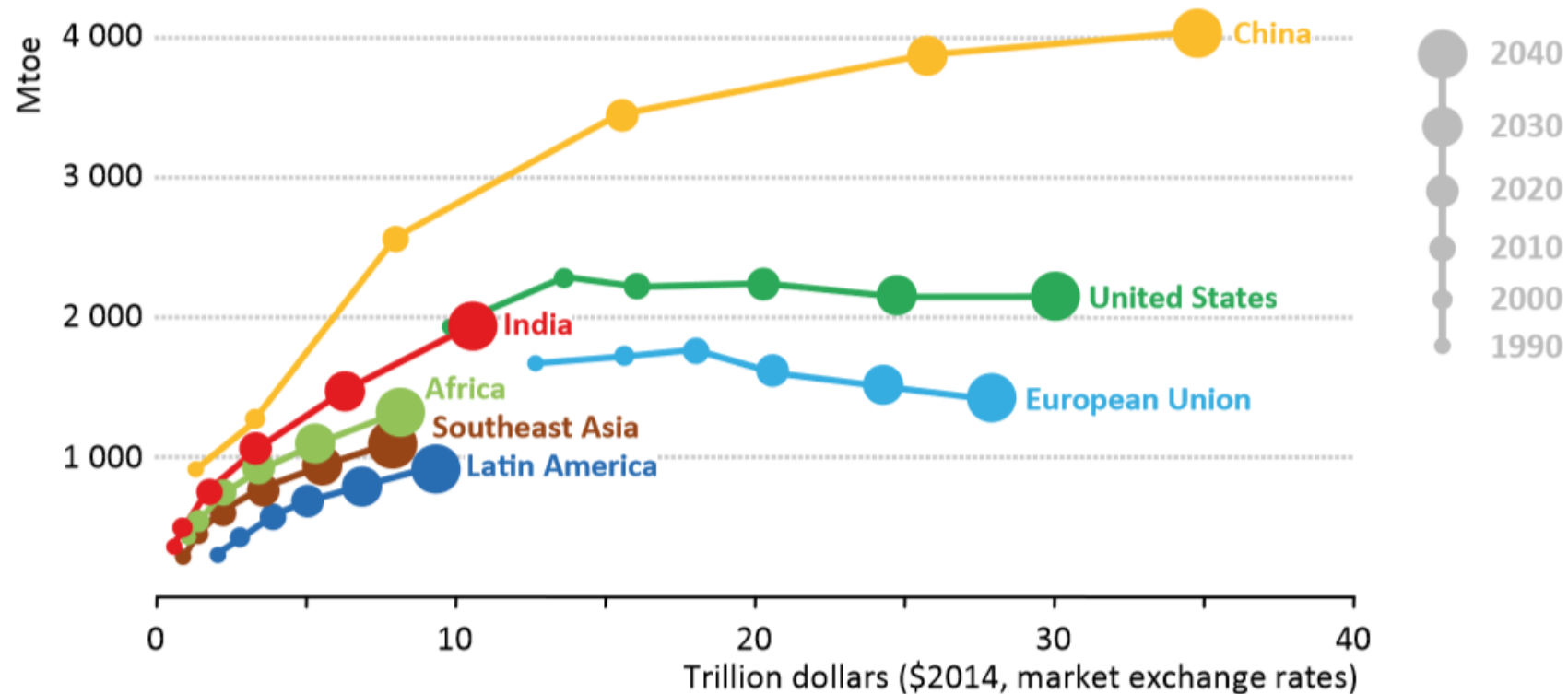
ENERGY
STUDIES
INSTITUTE



NUS
National University
of Singapore

Changing dynamics of global energy demand

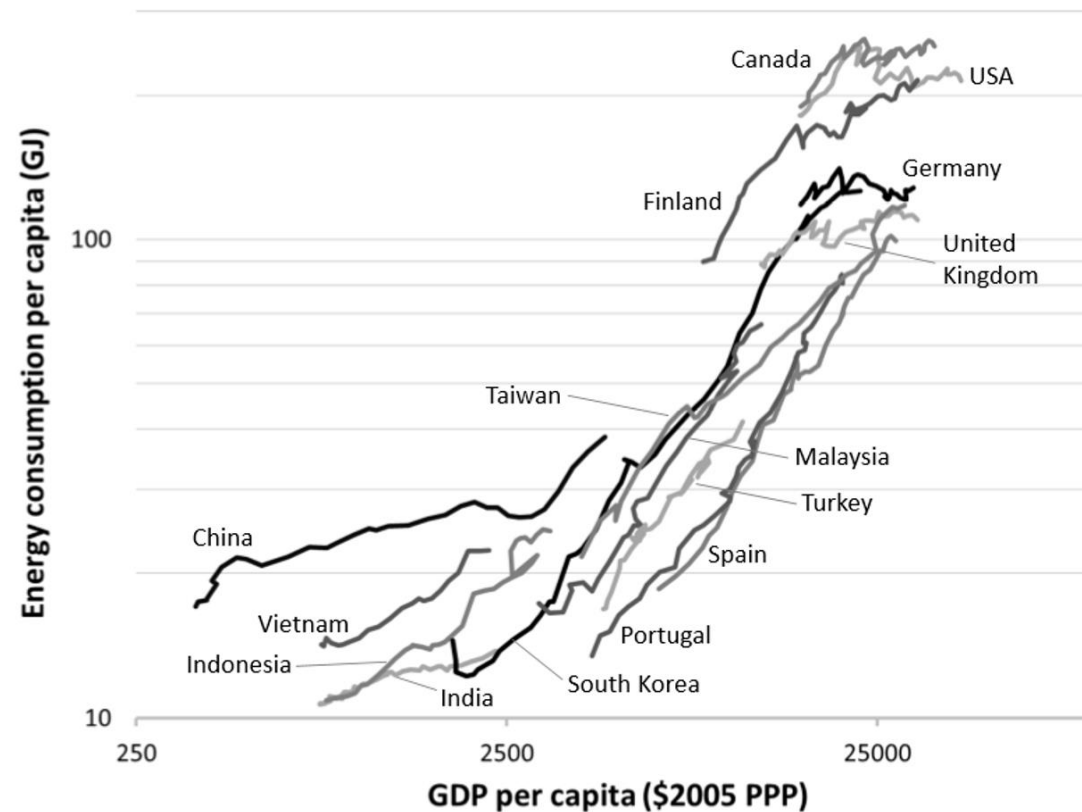
Primary energy demand and GDP by selected region in IEA New Policies Scenario (1990-2040)



Source: IEA World Energy Outlook (2015)

Can ASEAN leapfrog to an energy efficient economy?

- Despite dramatic improvements in the energy efficiency of specific technologies, economic growth in developing economies has not become less energy intensive than past growth in industrialized countries.

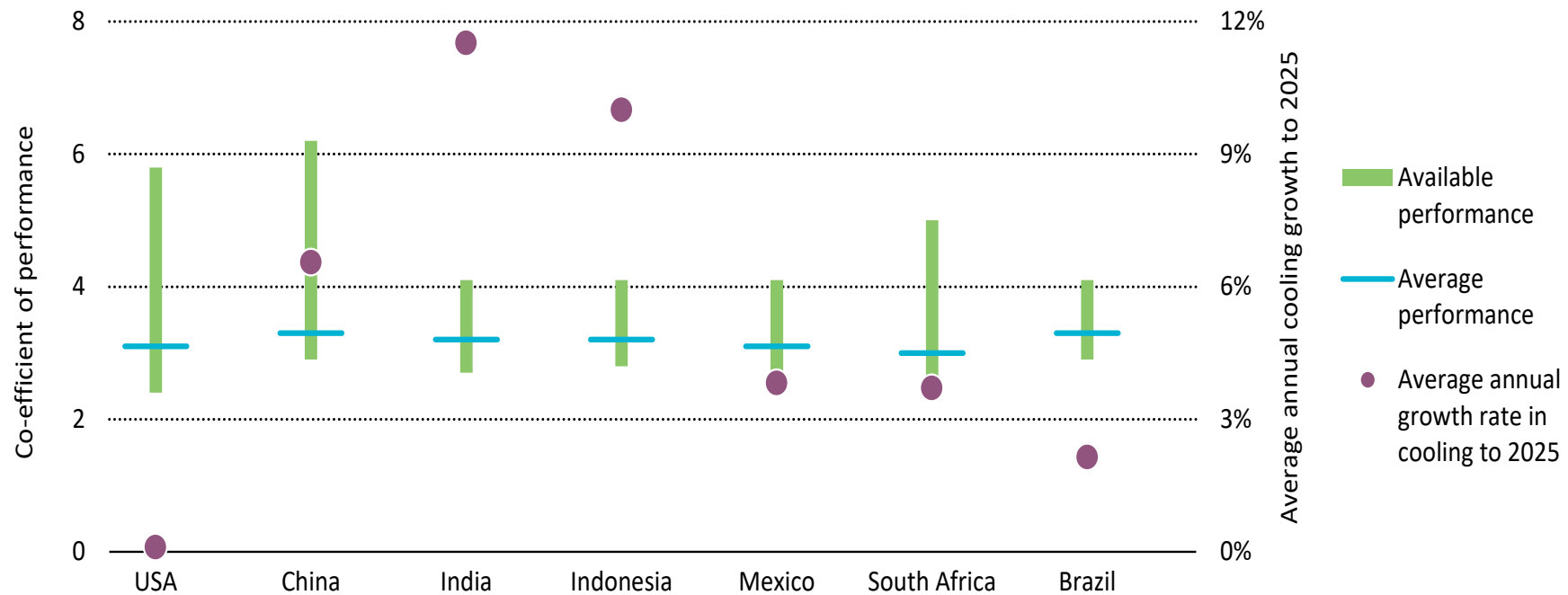


Notes: Both axes have a logarithmic scale.

Source: Van Benthem (2015)

Potential for international harmonisation of energy efficiency standards is huge

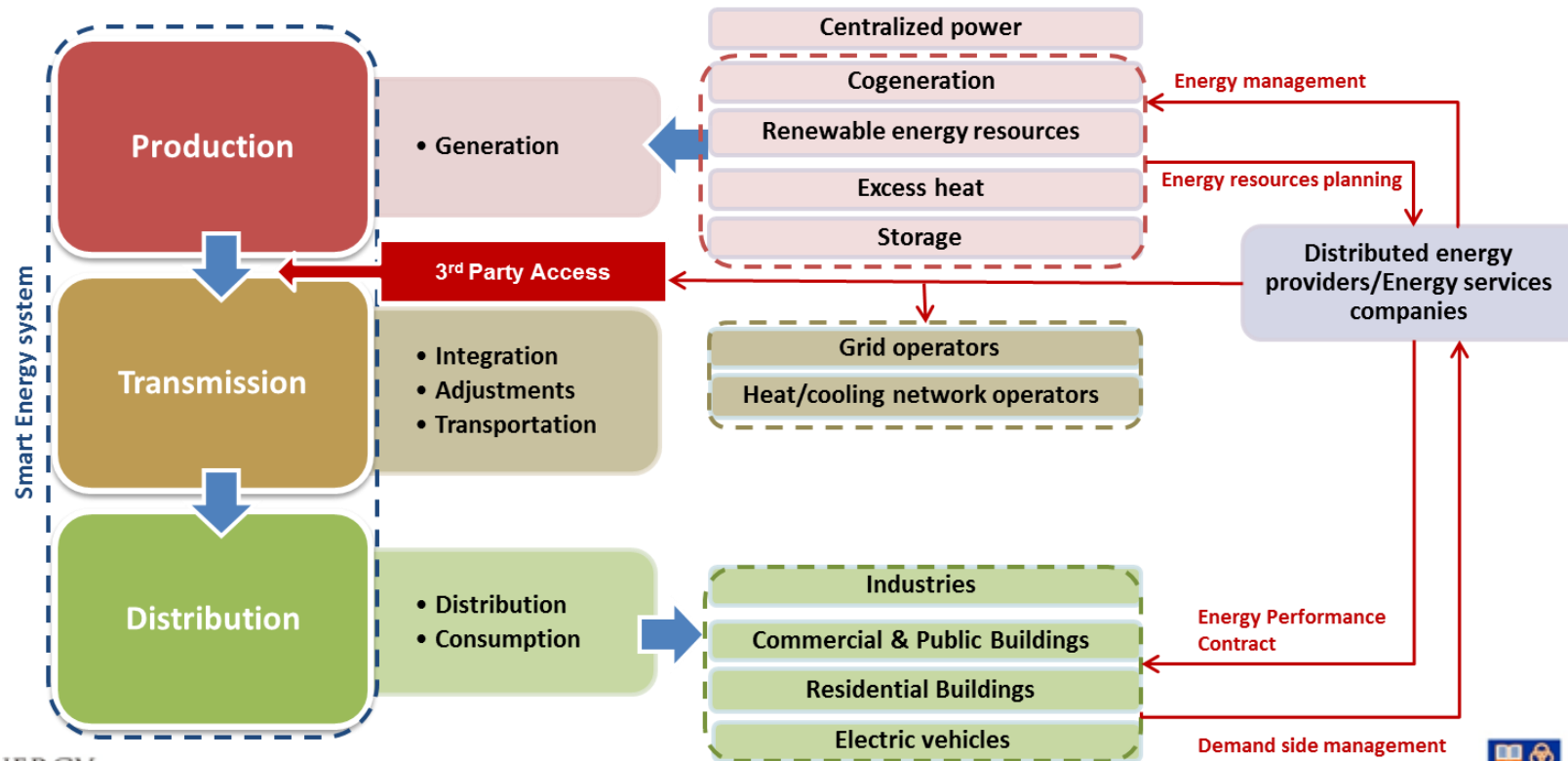
Ex: Typical energy efficiency ratios of split-package air conditioning units in 2015

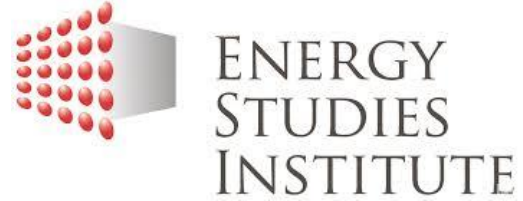


Notes: co-efficient of performance (COP) represents the energy efficiency ratio (watts in cooling equivalent per watt of electricity consumption): the higher the COP, the greater the energy-efficiency. Annual average growth in space cooling demand represents the expected change in useful cooling energy demand between 2015 and 2025. Source: IEA (2017)

System integration is essential for energy leapfrogging opportunities

- We need to unlock energy system efficiency potential by
 - Coupling heat/cooling and electricity markets
 - Incorporating distributed energy resources
 - Enabling demand-side management





Yang LIU
Senior Research Fellow
Email: yang_liu@nus.edu.sg

<http://www.esi.nus.edu.sg>

Energy Studies Institute
National University of Singapore

29 Heng Mui Keng Terrace
Block A, #10-01
Singapore 119620

