Sustainable development means overcoming several energy challenges.

Energy Security

Climate Change

Energy Poverty

Water

Land Use & Forests

Air Pollution
POVERTY

Based on WB, 1992
Energy Policy

- Major driver of past transitions and future solutions
- Effects often “asymmetric” – solving one problem, but creating another one
- Integration across objectives, sectors, and scales needed
- Example: climate-energy poverty linkages
Impacts of Energy Access Policies on GHG Emissions are Negligible

Source: Pachauri et al. 2013, Environ. Research Letters
Impact of Climate Policy on Energy Access (without compensatory mechanisms)

PRELIMINARY RESULTS: Cameron, Pachauri, Rao, Riahi (forthcoming)
SE4ALL Goals / Energy SDGs
Integration of Access, Efficiency and Renewables can provide an entry point for the Climate Objective

Energy savings (efficiency, conservation, and behavior)
~50% renewables by 2050

Primary Energy, EJ per year

GEA: Chapter 17 (Riahi et al, 2012)
The Energy-Food-Water Nexus

How do these linkages facilitate or constrain our ability to meet development and sustainability goals?
Thank you!
Synergies of Meeting Multiple Energy Objectives

Added costs of ES and PH are comparatively low when CC is taken as an entry point.

Integrated Climate-Pollution-Security Policies

D. McCollum, V. Krey, K. Riahi (2011)