The role of energy efficiency in achieving the 2030 Agenda

Mark Lister

Asia Clean Energy Forum 2017

Deep Dive Workshop, 6 June 2017

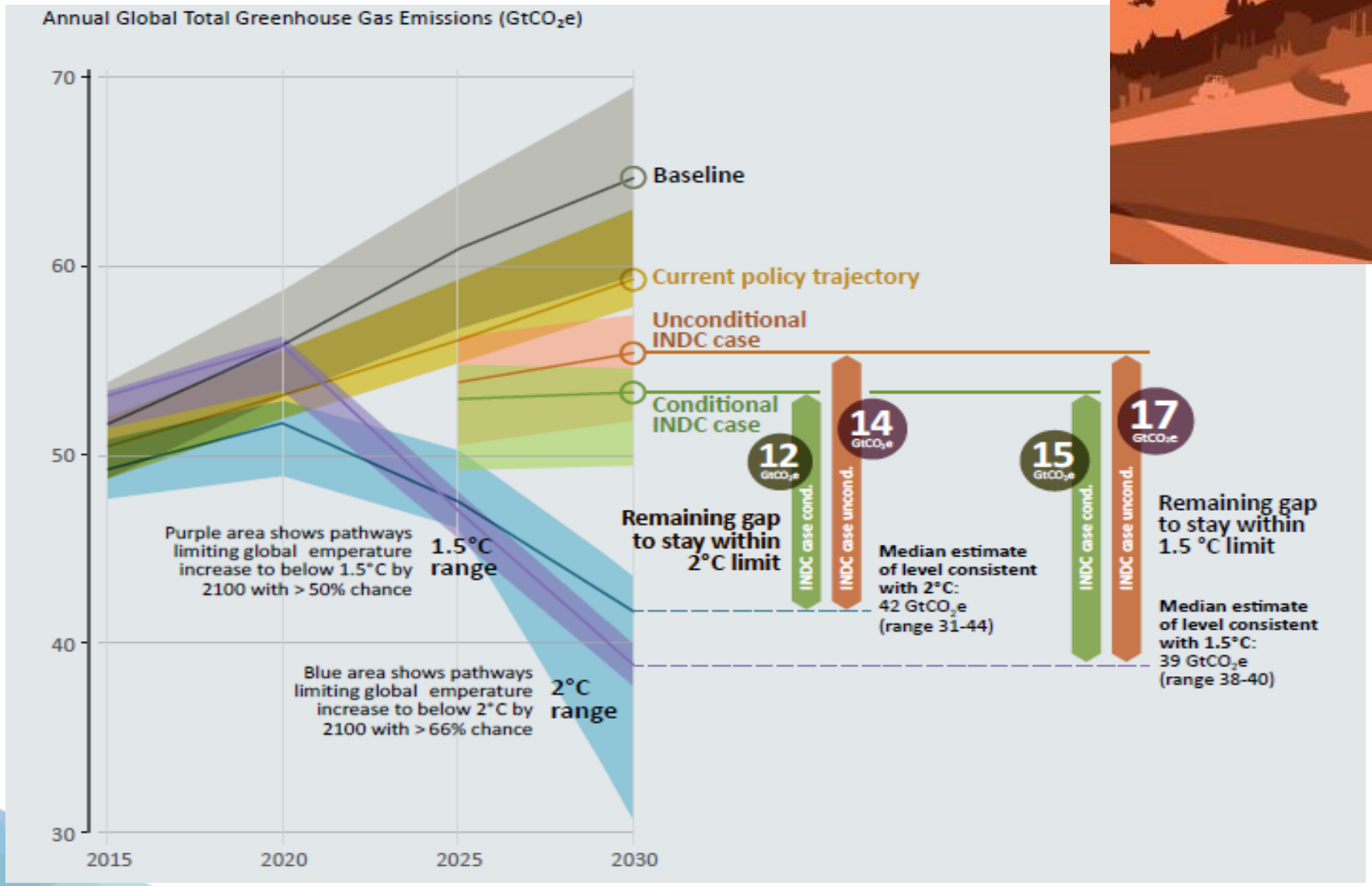
Achieving Sustainable Energy for All by 2030: the complementarity of the Goals

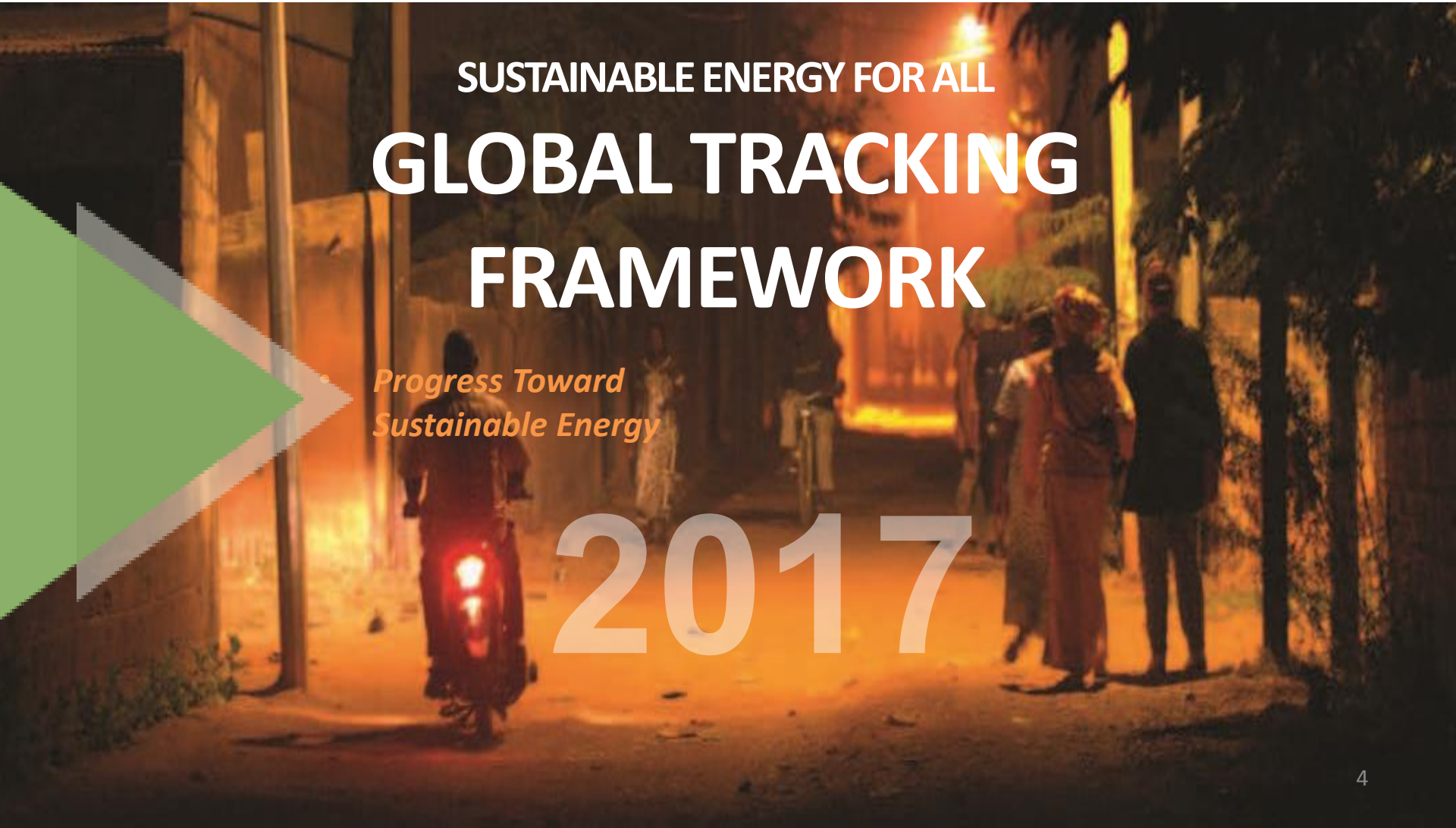
ENSURING *universal access* TO MODERN ENERGY SERVICES.

DOUBLING THE GLOBAL RATE OF IMPROVEMENT IN *energy efficiency.*

DOUBLING THE SHARE OF *renewable energy* IN THE GLOBAL ENERGY MIX.

The Emissions Gap Report: the need to raise ambitions of (future) NDCs





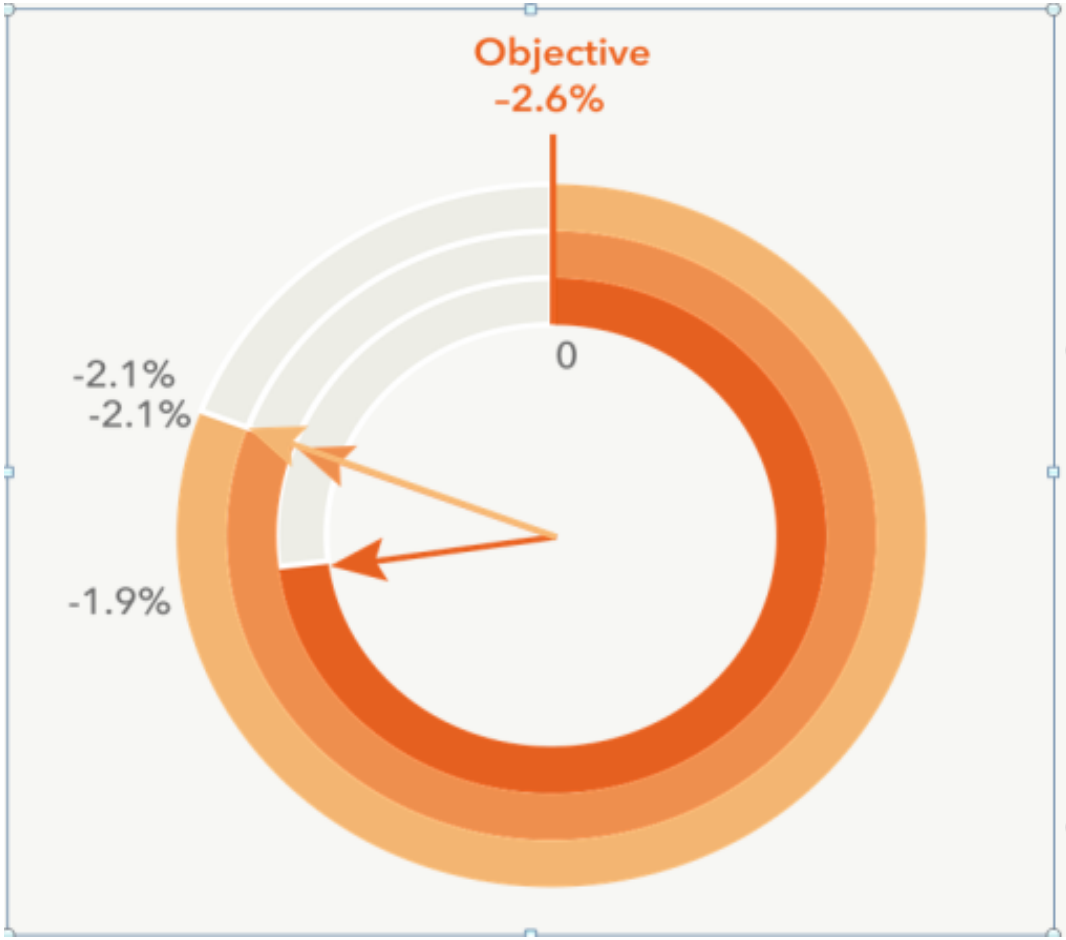
SUSTAINABLE ENERGY FOR ALL

GLOBAL TRACKING FRAMEWORK

Progress Toward Sustainable Energy

2017

Energy Efficiency progress towards the 2030 goal

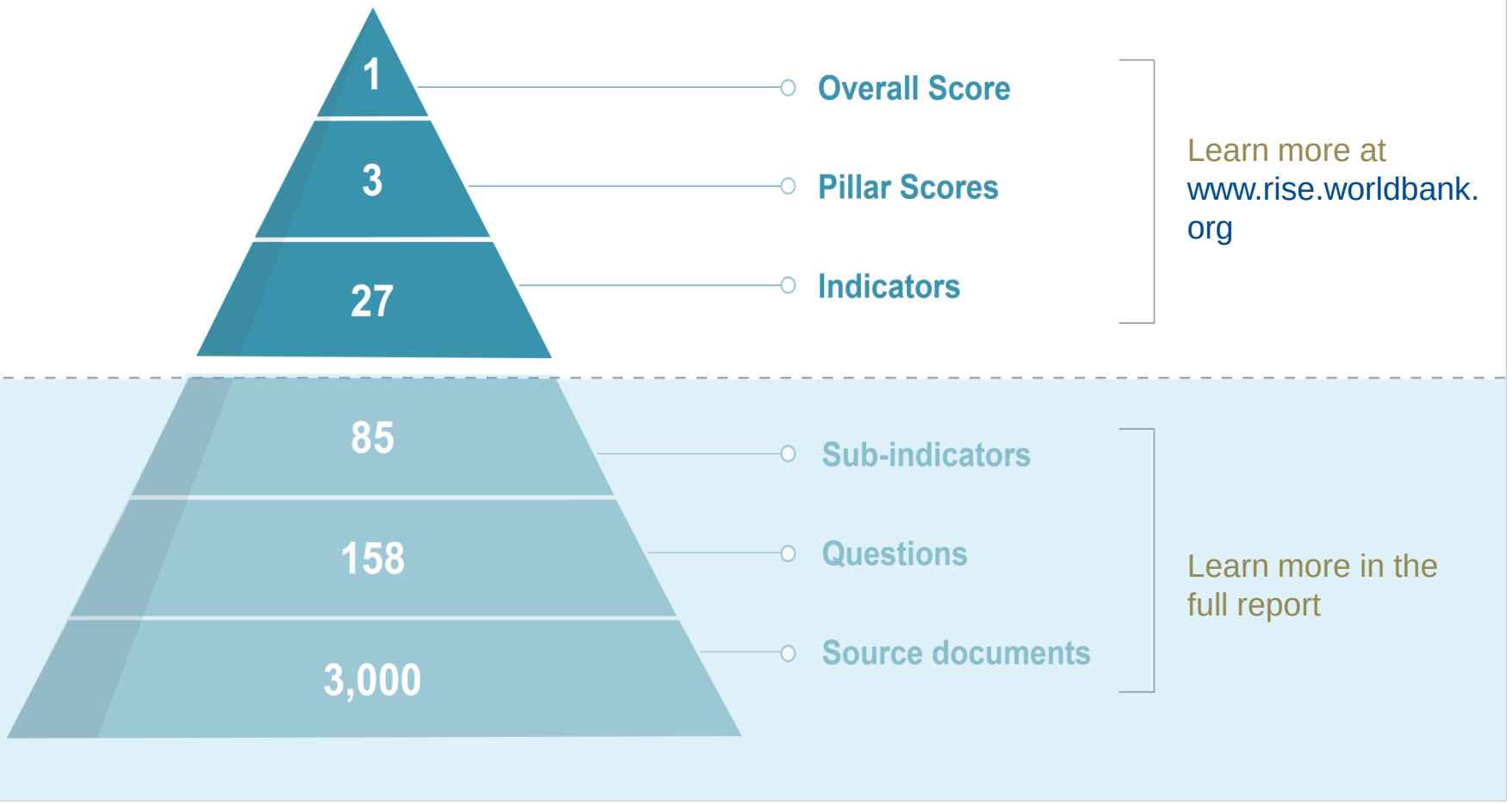


- Compound annual growth rate of energy intensity, 2010–12
- Compound annual growth rate of energy intensity, 2012–14
- Compound annual growth rate of energy intensity, 2012–30– current trends
- Compound annual growth rate of energy intensity, 2010–30– SEforAll objective

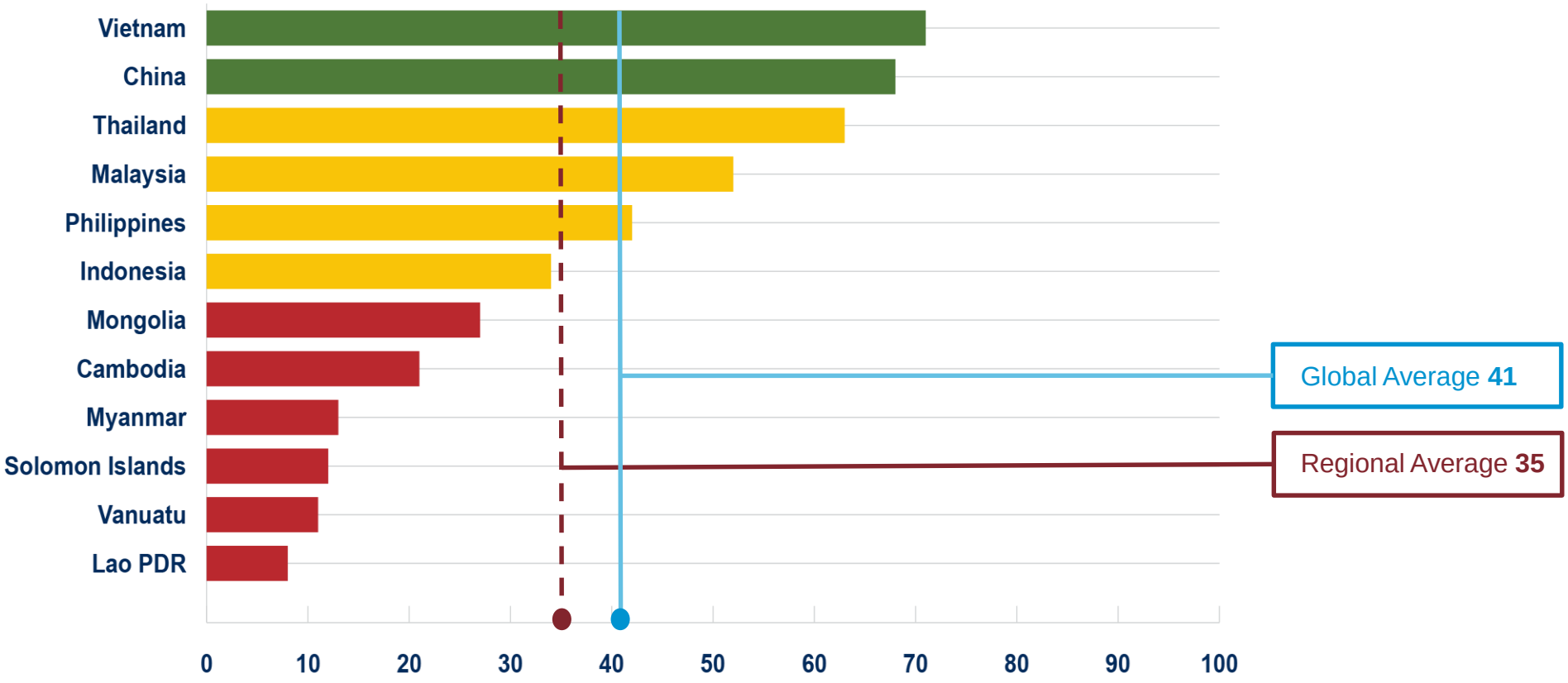
Regulatory Indicators for Sustainable Energy

www.rise.worldbank.org

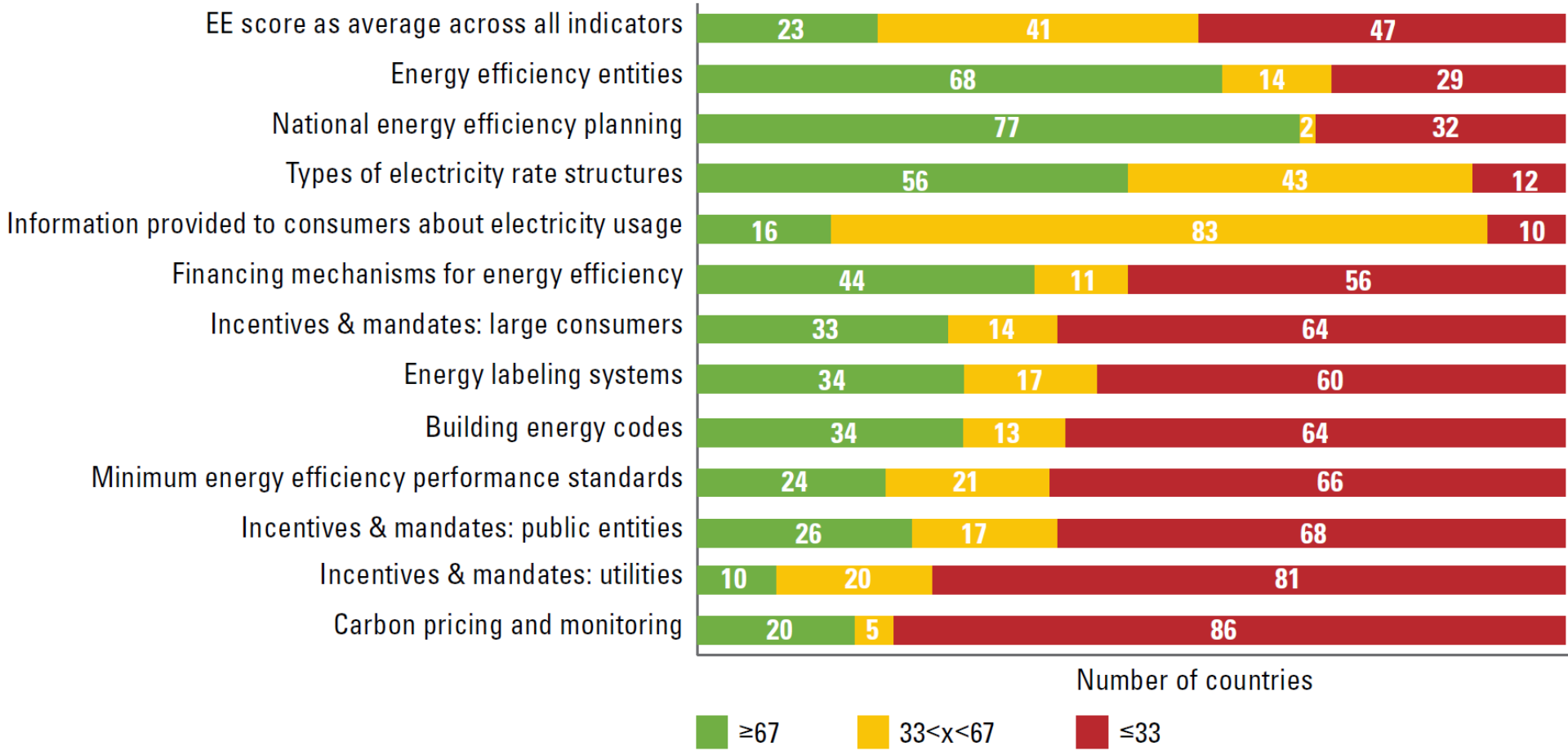
The RISE methodology: a bottom-up approach to assessing clean energy progress



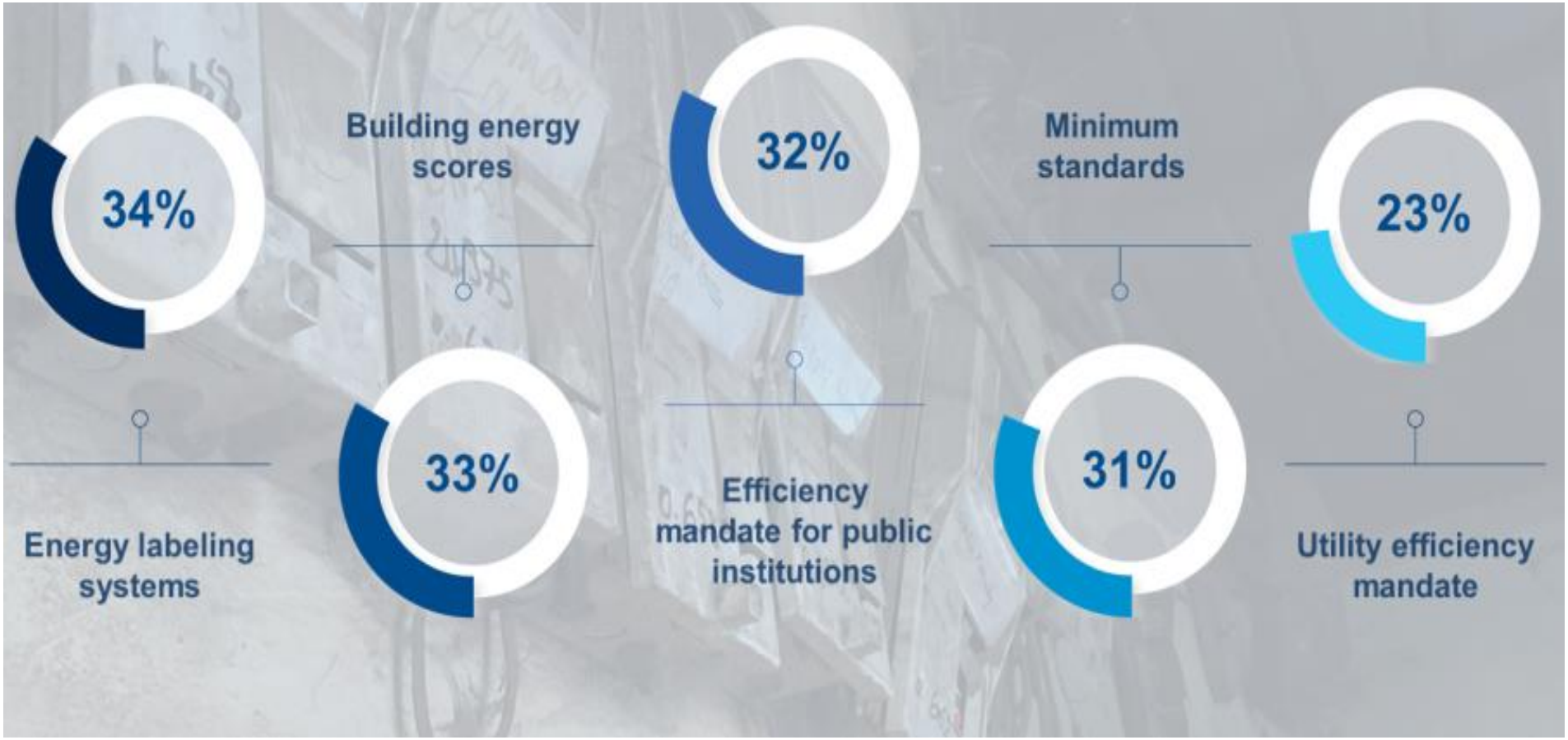
East Asia and Pacific:
RISE Energy Efficiency Country Scores



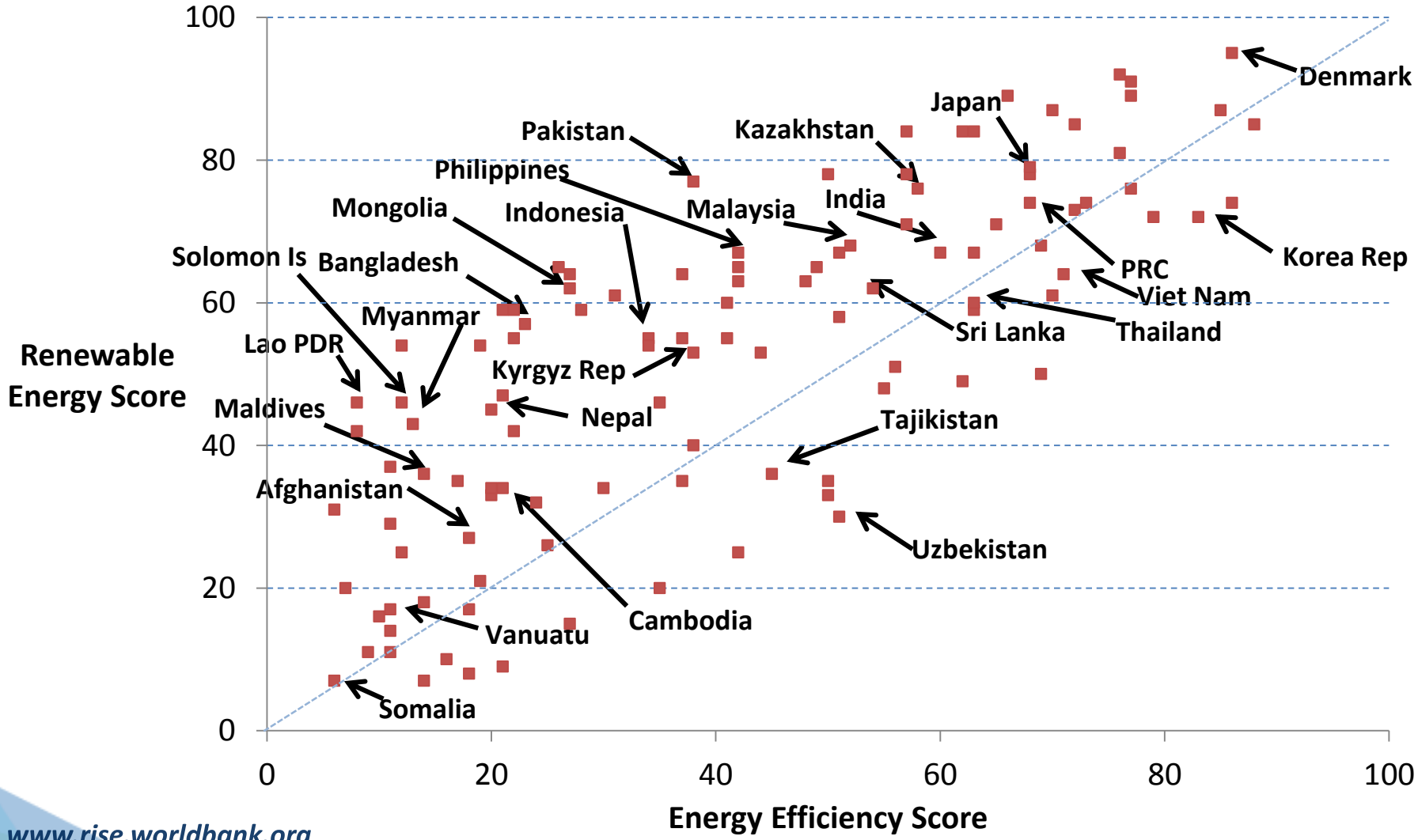
Energy Efficiency Scores by indicator and number of countries



Many quick wins on energy efficiency are being overlooked



There remains an emphasis on renewable energy actions for most countries



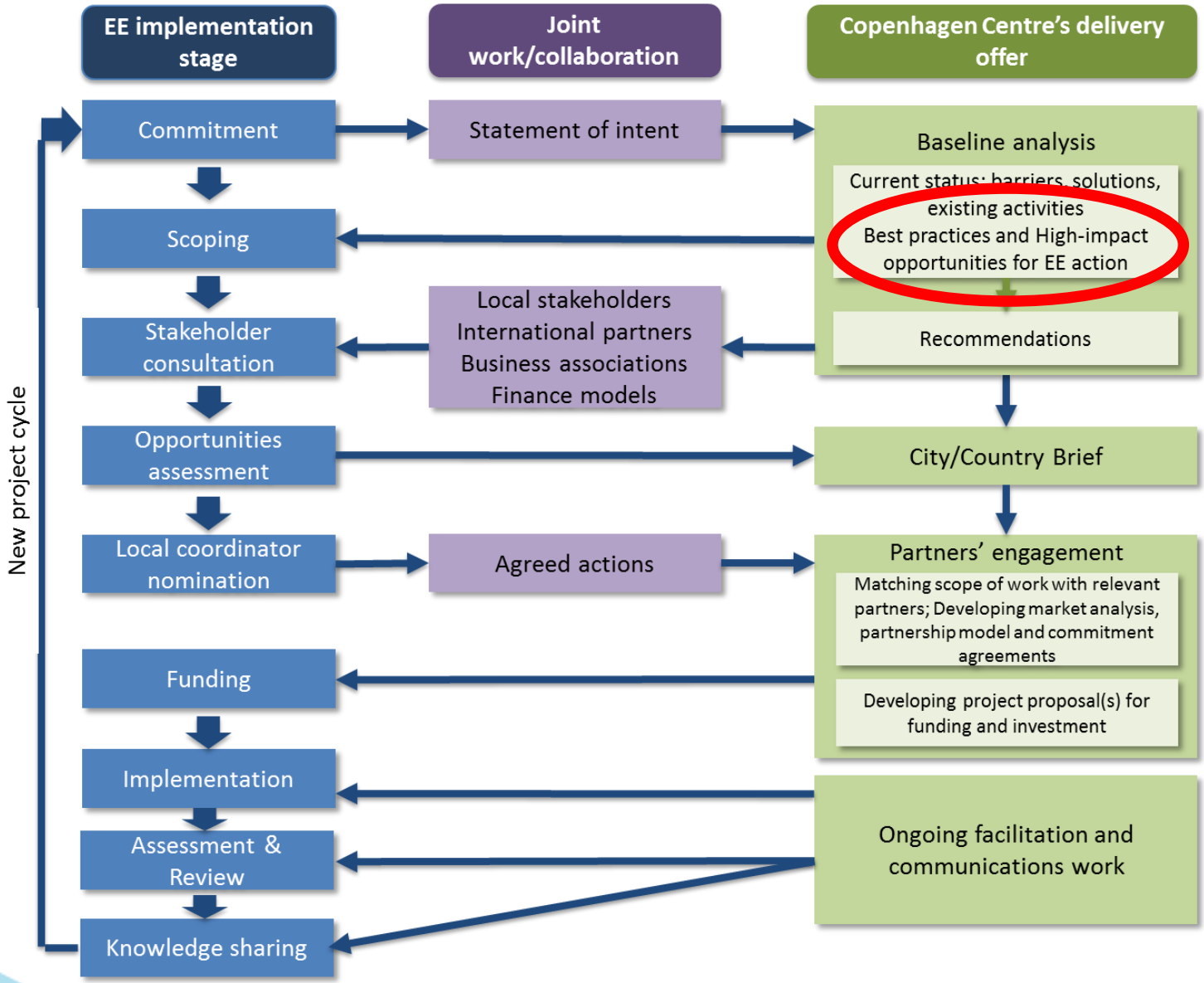
From campaign to implementation: capitalising on the opportunities

- It is clear that many developing country governments cannot realise their energy efficiency aspirations without assistance.
- Ongoing innovation and new thinking on partnership and delivery models is required, to reconnect the private sector with delivery of global climate (NDC) and development goals towards 2030.
- More work needs to be done to formulate a real energy efficiency investment pipeline, in high impact sectors and key locations, with a focus on replicability and speed.

The Copenhagen Centre on Energy Efficiency

- was formed in September 2013 under an agreement between UN Environment, the Technical University of Denmark ("DTU") and the Government of Denmark
- serves as **Sustainable Energy for All** (SEforALL) **Energy Efficiency Hub** and supports doubling the global rate of EE improvement by 2030
- coordinates and facilitates implementation of the SEforALL work program and related energy efficiency activities globally, by:
  - **Assisting policy change in countries and cities**
  - **Accelerating energy efficiency through innovation in delivery models**
  - **Raising the profile of energy efficiency**

The process by which we're working with governments



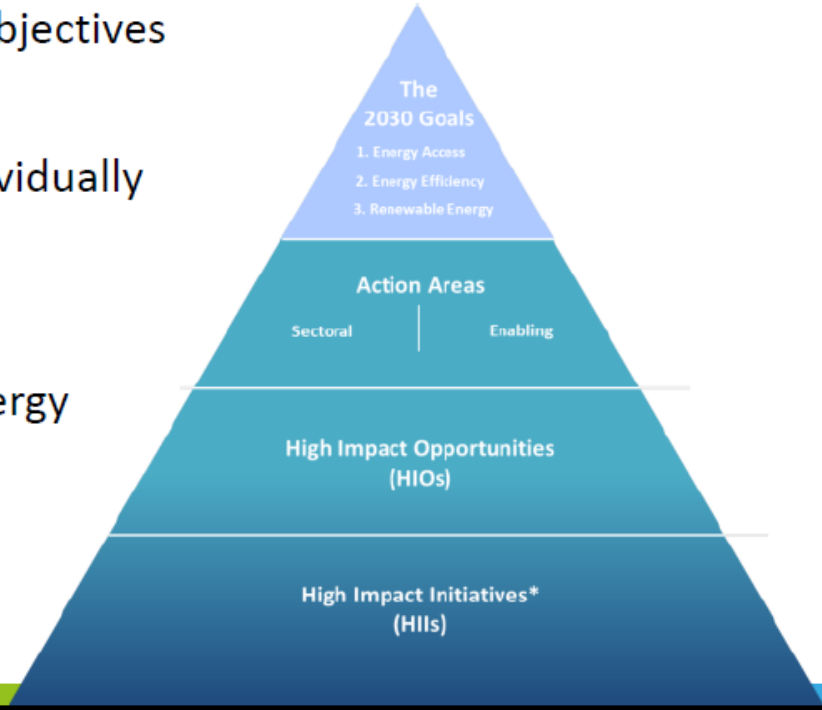
What is a 'High Impact Opportunity'?

A primary way the UN Initative Sustainable Energy for All (SEforALL) uses to drive the realisation of its three objectives.

SEforALL identified over 50 HIOs globally, some are sector based, while others are enabling factors, like finance and policies

HIOs provide a platform for stakeholders from the private sector, public sector, and civil society to work together on specific actions that advance sustainable energy within the framework of the larger global initiative. HIOs enable partners to:

- Collaborate with other organizations on similar objectives
- Track and mobilize resources and investment
- Overcome barriers that are difficult to tackle individually
- Share best practices and coordinate activities
- Broker new partnerships
- Access global decision-making on sustainable energy



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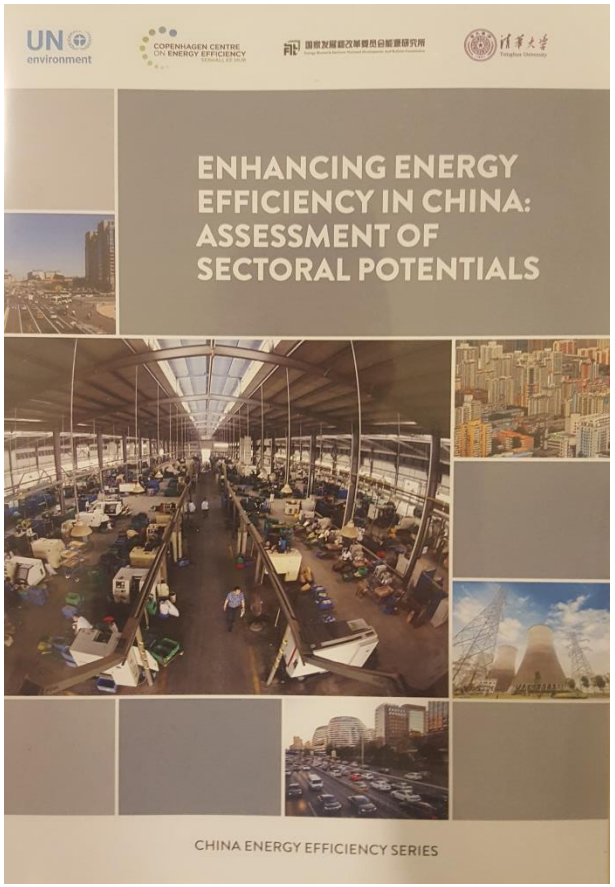
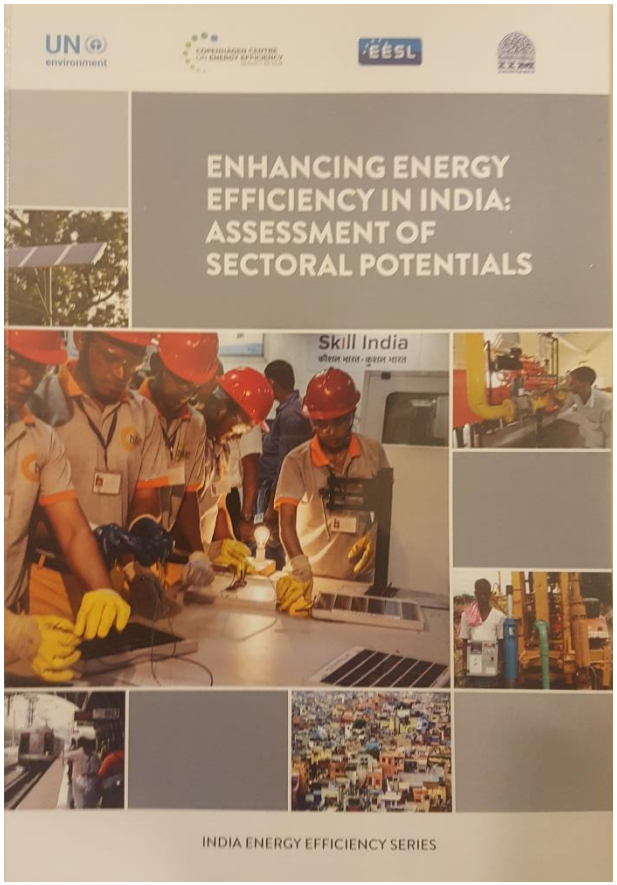
SE4ALL EE HUB

Some of our existing knowledge base

Today's launch: two new reports





Download both of these reports from www.energyefficiencycentre.org

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Launch of Report

Enhancing Energy Efficiency In India: Assessment of Sectoral Potentials

Mark Lister, Copenhagen Centre on Energy Efficiency

Nitin Bhatt, EESL

Asia Clean Energy Forum 2017

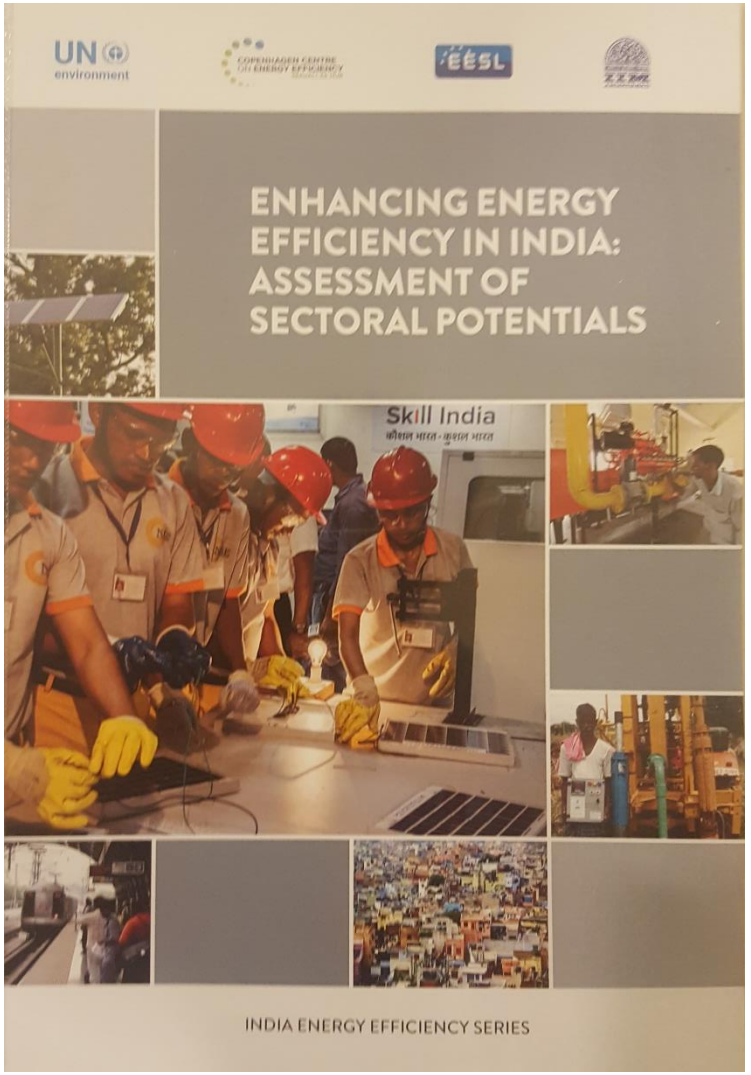
Deep Dive Workshop, 6 June 2017

UN environment

SUSTAINABLE ENERGY FOR ALL

Background and scope to the report

- Lead collaborators: EESL and Indian Institute of Management
- Scope: to use a bottom-up (AIM/End-use) assessment of sectoral energy efficiency opportunities to determine highest impact options in the short, medium and long term



Some key discussion points

- India will remain a high-growth energy consumer
- T&D losses are very high compared to world averages (24% compared to 9% in 2012)
- Relative importance of the transport sector to future energy use is increasing
- Opportunities exist across all the sectors, and are dynamic: highest impact opportunities will change dramatically over time

High Impact Opportunities: the report's findings

SECTOR	HIO – SHORT TERM 2015-2020	HIO – MEDIUM TERM 2020-2030	HIO – LONG TERM 2030-2050
Agriculture	Energy-efficient (EE) Pumps	EE Pumps	EE and Solar Pumps
Residential	LED, advanced space cooling systems, cleaner cooking	Energy-efficient fans, advanced space cooling systems, cleaner cooking (LPG, biofuels)	Advanced space cooling systems (AC with cool roof), solar concentrators for cooking, city/ housing complexes based heating and cooling systems
Transport	Metro	Metro, Electric vehicles (EV)	Metro, Electric vehicles (EV)
Industry	PAT	PAT (enhanced sectoral and plant coverage)	PAT (enhanced specific energy consumption targets)
Power	Transmission and commercial (T&C) loss reduction, super-critical (SC) coal-based power plants	Super-critical (SC) and ultra-mega power plants (UMPP), T&C loss reduction, solar and wind, smart grids	SC and UMPP, storage technologies, solar/wind and other new and renewable sources, smart grids

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SUSTAINABLE ENERGY FOR ALL

Lead collaborators: Energy Research Institute (NDRC) and Tsinghua University

研究任务设置
Research Tasks

Decomposed into 8 tasks:

Task 1: Role of energy conservation in achieving China's climate pledge(TU)

Task 2: Policy Mapping and Good Practices(ERI)

Task 3: Analysis of Energy Efficiency Options in Industrial Sector(ERI)

Task 4: Analysis of Energy Efficiency Options in Building Sector(ERI)

Task 5: Analysis of Energy Efficiency Options in Transportation Sector(ERI)

Task 6: Analysis of Energy Efficiency Options in Electricity Sector(ERI)

Task 7: High Impact Opportunity Analysis and Project Concept Notes(TU)

Task8: Two Big Workshops and Dissemination(TU,ERI)

Some key discussion points

- Industry dominates energy usage in China
- From 2010 to 2015, energy use per unit of GDP declined by 18.4%
- Under LEAP-CGEM modelling, it was concluded that China could reduce emissions by a further 27% in 2030 under an intensified energy savings scenario
- Energy efficiency contributes about three quarters of total emissions reductions in this period
- The study uncovered 26 HIOs which together would realise energy savings of over 2Gtce by 2050

Identified High Impact Opportunities

6个HIOs和2个PCNs项目建议
6 HIOs and 2 PCNs proposal

	HIO	PCN
Industry	余热回收技术 Waste heat recovery	
Building	被动房 Passive house	√
	空气源热泵技术 Air source heat pump	√
Transport	卡车燃油经济性 Upgrade fuel economy of trucks	
	电动汽车 EV	
Power	燃煤电厂改造，包热电联产 Energy conservation transformation of coal-fired power plant（including CHP）	