



SUSTAINABLE ENERGY FOR ALL
**GLOBAL TRACKING
FRAMEWORK**

Progress Toward Sustainable Energy

2017

The Global Tracking Framework is based on a wide-ranging partnership

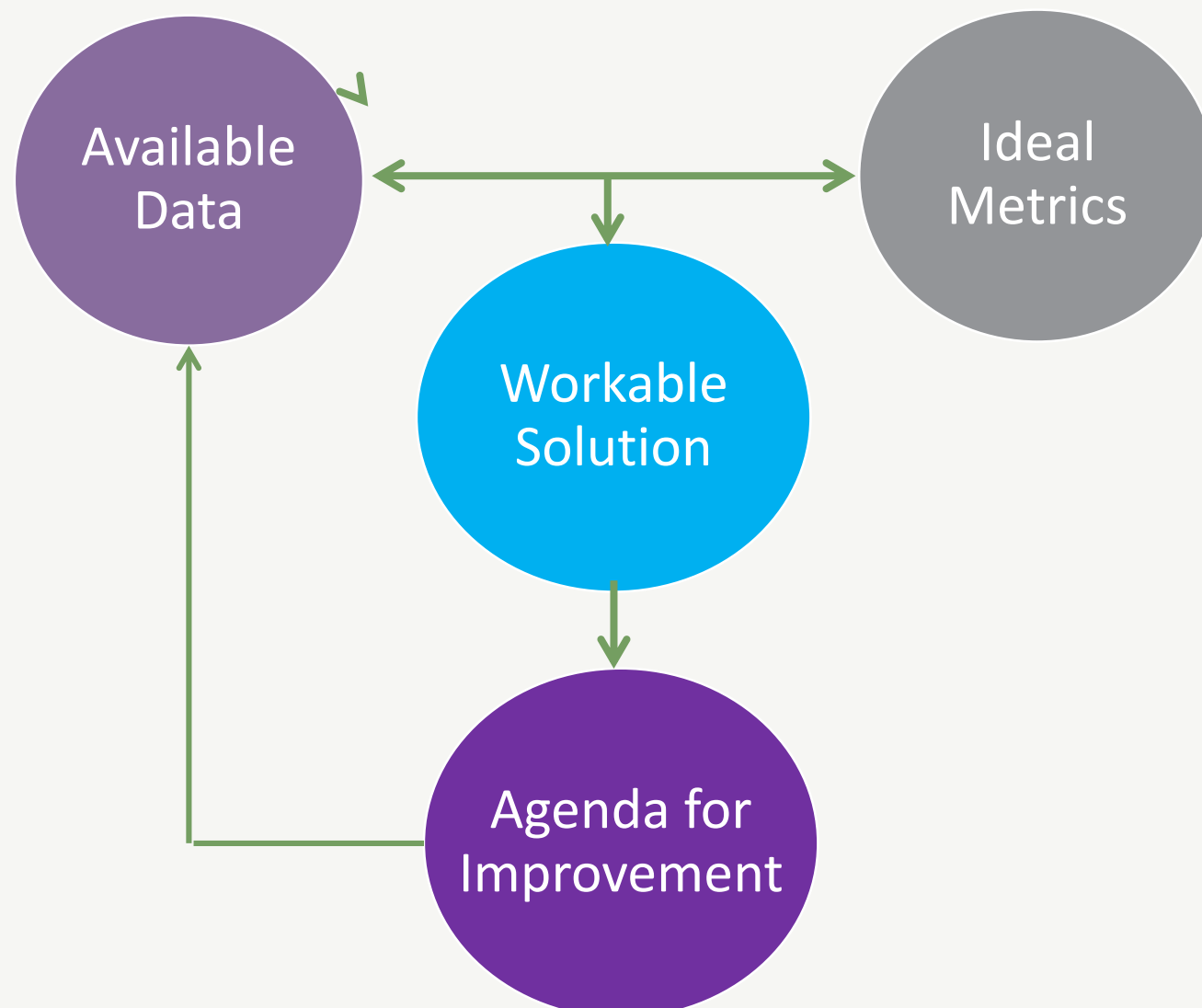


Incorporation of UN RECs in 2017 edition allowed for deeper coverage of regional findings, as well as regional consultation workshops, and companion regional reports

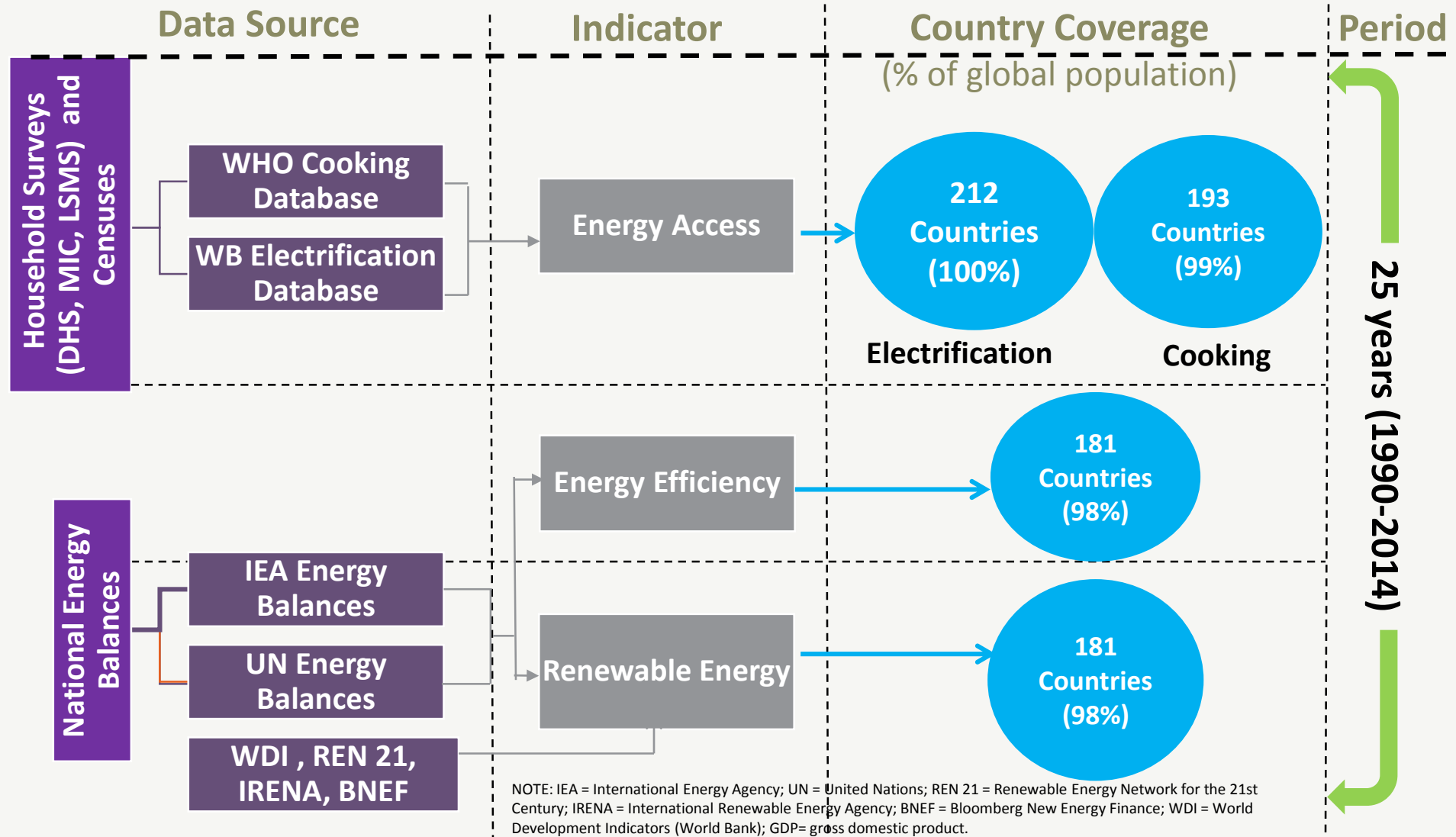


Methodology

A pragmatic approach to indicator development



Primary sources of data for Global Tracking Framework



Working indicator for electrification

Percentage of national population with an electricity connection

- Based on globally standardized national household omnibus surveys
- Published by National Statistical Agency in each country
- Captures household perspective (including off-grid, informal)
- Fails to capture quality dimensions of electricity service
- Differs from other indicators used in some countries
 - Percentage of villages electrified
 - Percentage of population in utility service area with an electricity connection

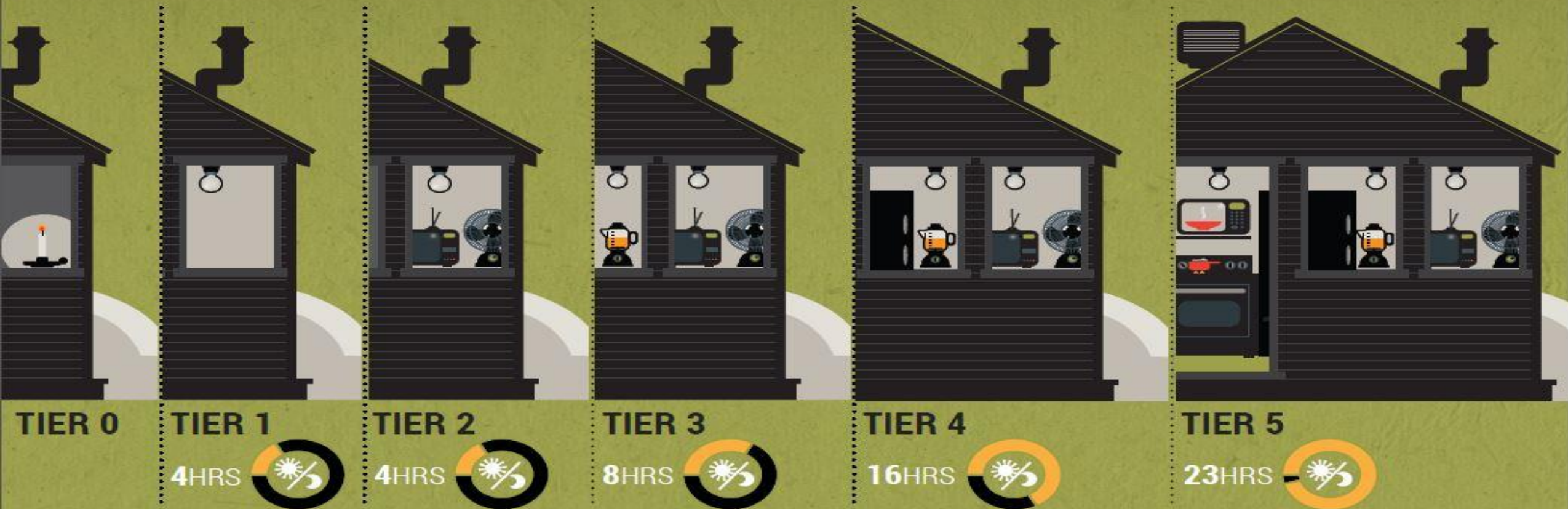
Working indicator for cooking

Percentage of national population with access to clean fuels and technologies

- Based on globally standardized national household omnibus surveys
- Published by National Statistical Agency in each country
- Previously defined as “access to non-solid fuels” (but kerosene)
- But most surveys do not yet adequately record “clean technology”
- Fails to capture many aspects of the user experience (e.g. stacking, health, convenience, efficiency, fuel availability, etc.)



Measuring energy access: the multi-tiers



Improving attributes of energy supply leads to higher tiers of access.

Multi-tier Matrix for Measuring Access to Household Electricity Supply

		TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
1. Peak Capacity	Power capacity ratings ²⁸ (in W or daily Wh)		Min 3 W	Min 50 W	Min 200 W	Min 800 W	Min 2 kW
	OR Services		Min 12 Wh	Min 200 Wh	Min 1.0 kWh	Min 3.4 kWh	Min 8.2 kWh
2. Availability (Duration)	Hours per day		Min 4 hrs	Min 4 hrs	Min 8 hrs	Min 16 hrs	Min 23 hrs
	Hours per evening		Min 1 hr	Min 2 hrs	Min 3 hrs	Min 4 hrs	Min 4 hrs
3. Reliability					Max 14 disruptions per week	Max 3 disruptions per week of total duration <2 hrs	
4. Quality					Voltage problems do not affect the use of desired appliances		
5. Affordability					Cost of a standard consumption package of 365 kWh/year < 5% of household income		
6. Legality					Bill is paid to the utility, pre-paid card seller, or authorized representative		
7. Health & Safety					Absence of past accidents and perception of high risk in the future		

Multi-tier Matrix for Measuring Access to Cooking Solutions

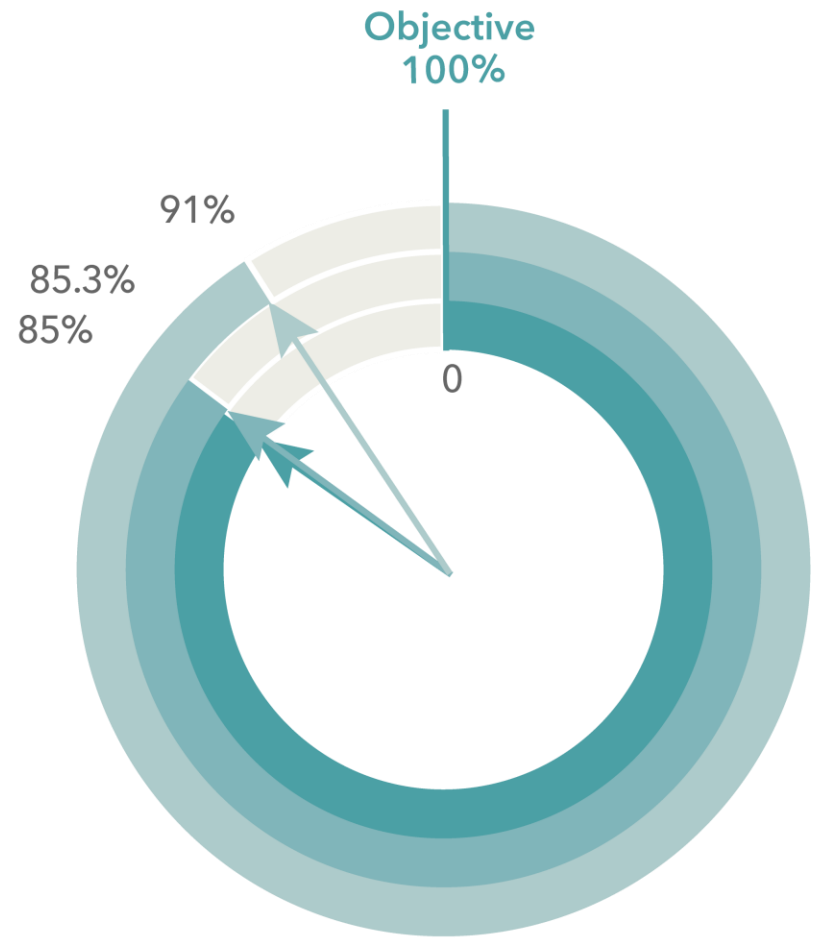
		LEVEL 0	LEVEL 1	LEVEL 2	LEVEL 3	LEVEL 4	LEVEL 5
1. Indoor Air Quality	PM _{2.5} (µg/m ³)		[To be specified by a competent agency, such as WHO, based on health risks]	[To be specified by a competent agency, such as WHO, based on health risks]	[To be specified by a competent agency, such as WHO, based on health risks]	< 35 (WHO IT-1)	< 10 (WHO guideline)
	CO (mg/m ³)					< 7 (WHO guideline)	
2. Cookstove Efficiency	(not to be applied if cooking solution is also used for space heating)		Primary solution meets Tier 1 efficiency requirements [to be specified by a competent agency consistent with local cooking conditions]	Primary solution meets Tier 2 efficiency requirements [to be specified by a competent agency consistent with local cooking conditions]	Primary solution meets Tier 3 efficiency requirements [to be specified by a competent agency consistent with local cooking conditions]	Primary solution meets Tier 4 efficiency requirements [to be specified by a competent agency consistent with local cooking conditions]	
3. Convenience:	Fuel acquisition and preparation time (hrs/week)			< 7	< 3	< 1.5	< 0.5
	Stove preparation time (min/meal)			< 15	< 10	< 5	< 2
4. Safety of Primary Cookstove	IWA safety tiers		Primary solution meets (provisional) IWA Tier 1 for Safety	Primary solution meets (provisional) IWA Tier 2	Primary solution meets (provisional) IWA Tier 3	Primary solution meets (provisional) IWA Tier 4	
	OR Past accidents (burns and unintended fires)					No accidents over the past year that required professional medical attention	
5. Affordability						Levelized cost of cooking solution (inc. cookstove and fuel) < 5% of household income	
6. Quality of Primary Fuel:	variations in heat rate due to fuel quality that affects ease of cooking					No major effect	
7. Availability of Primary Fuel						Primary fuel is readily available for at least 80% of the year	Primary fuel is readily available throughout the year



Results

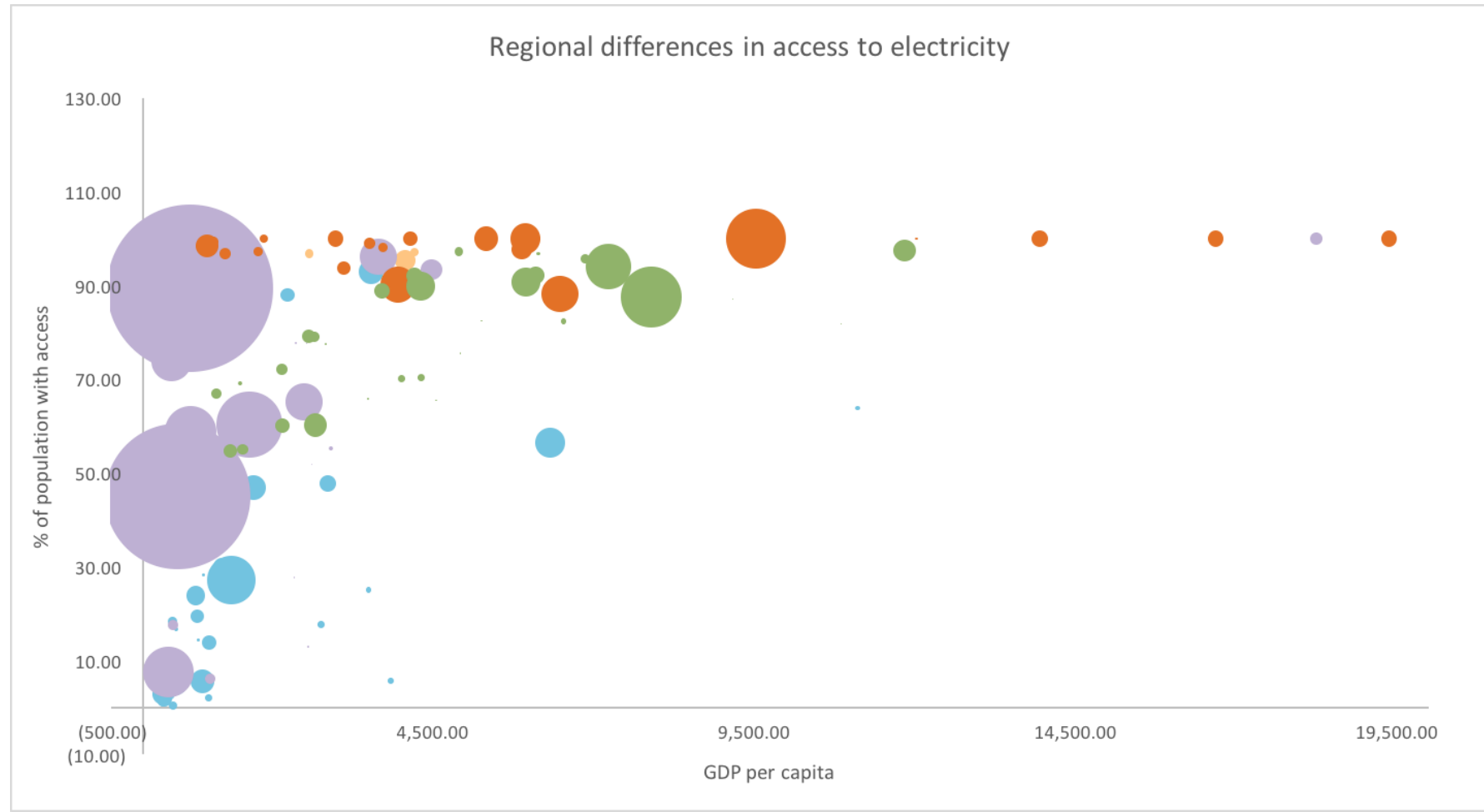
Under current trends, global electrification rate projected to rise from 85% in 2014 to 91% by 2030

Access to Electricity

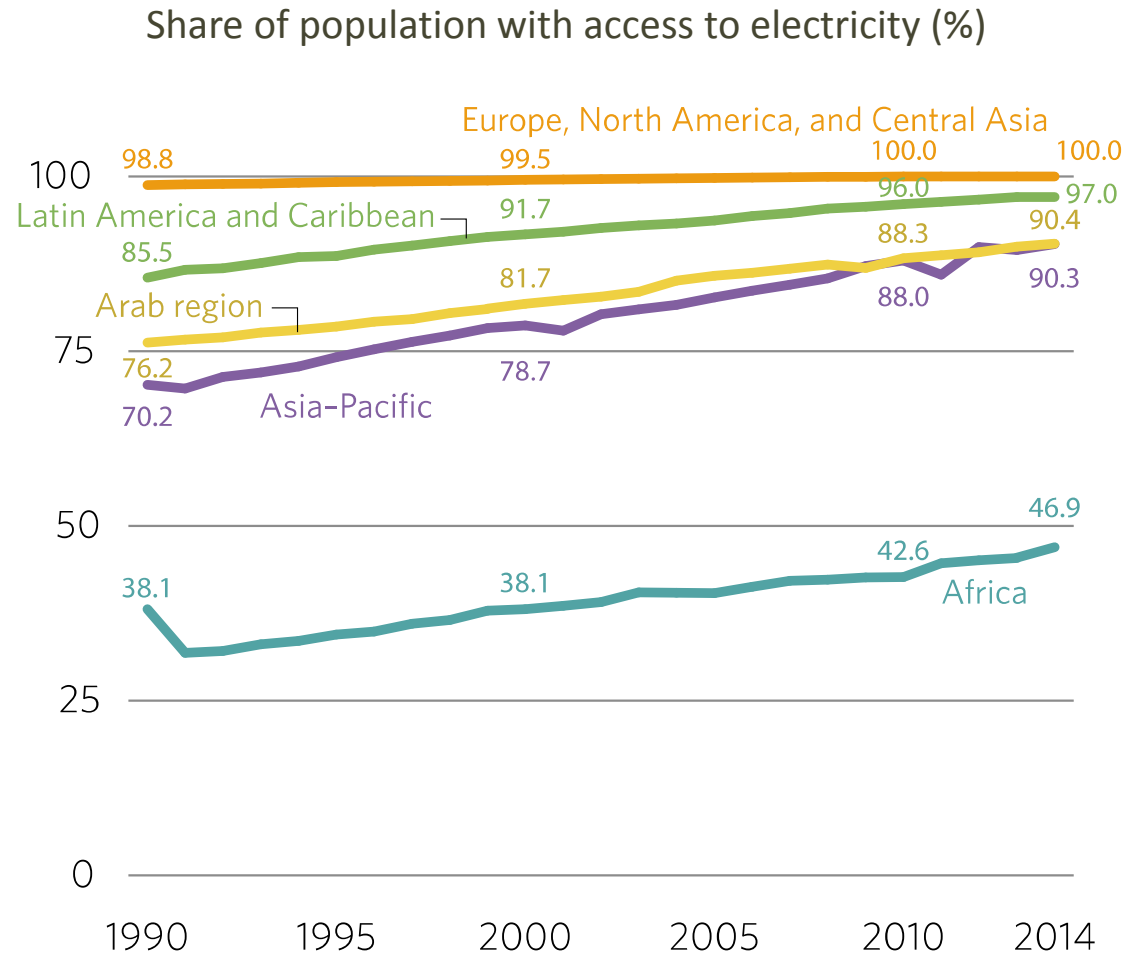


- Access to electricity, 2012
- Access to electricity, 2014
- Access to electricity, 2030-IEA estimates
- Access to electricity, 2030-SEforAll objective

Sharp increase in electrification across regions between \$500-\$1000 GDP per capita

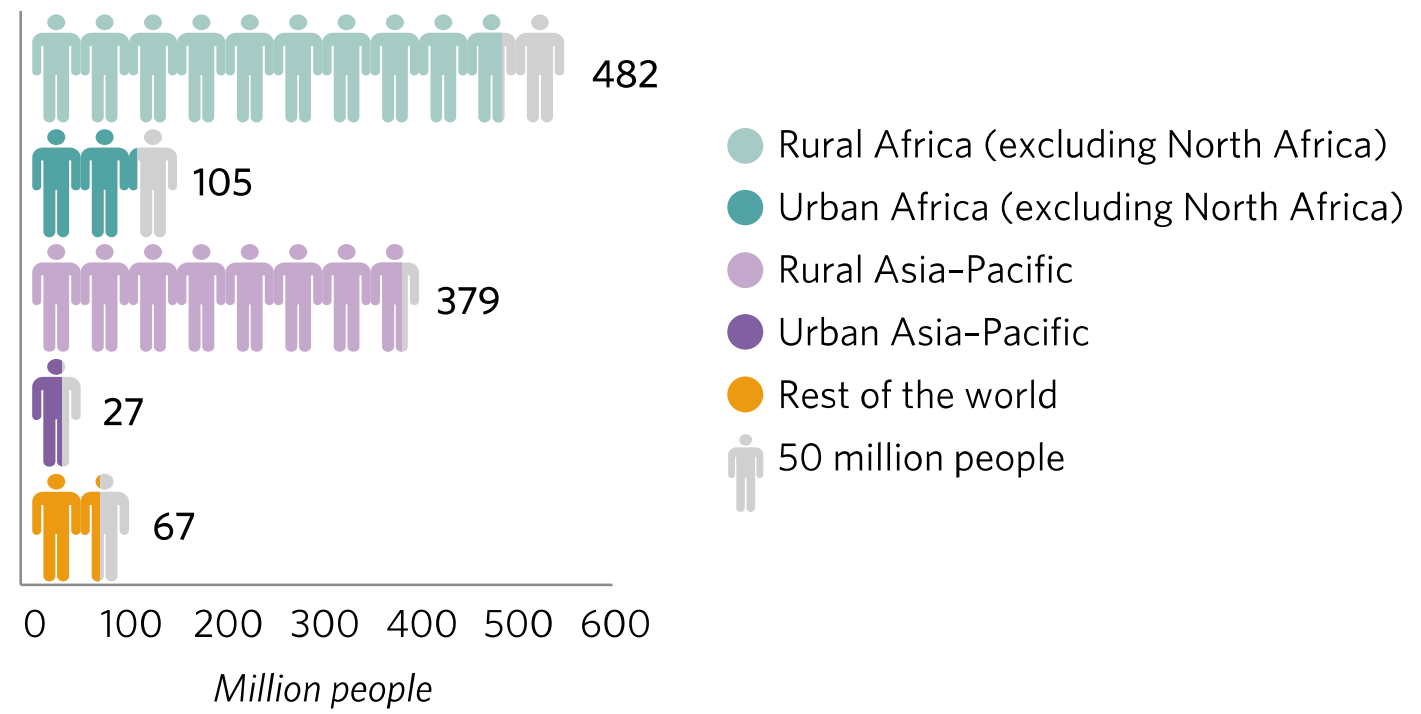


Asia-Pacific saw electrification converge with other regions during last 25 years



Almost 40% of the 1.06 billion living without electricity are found in Asia-Pacific's rural areas

Location of the 1.06 billion people living without electricity, 2014

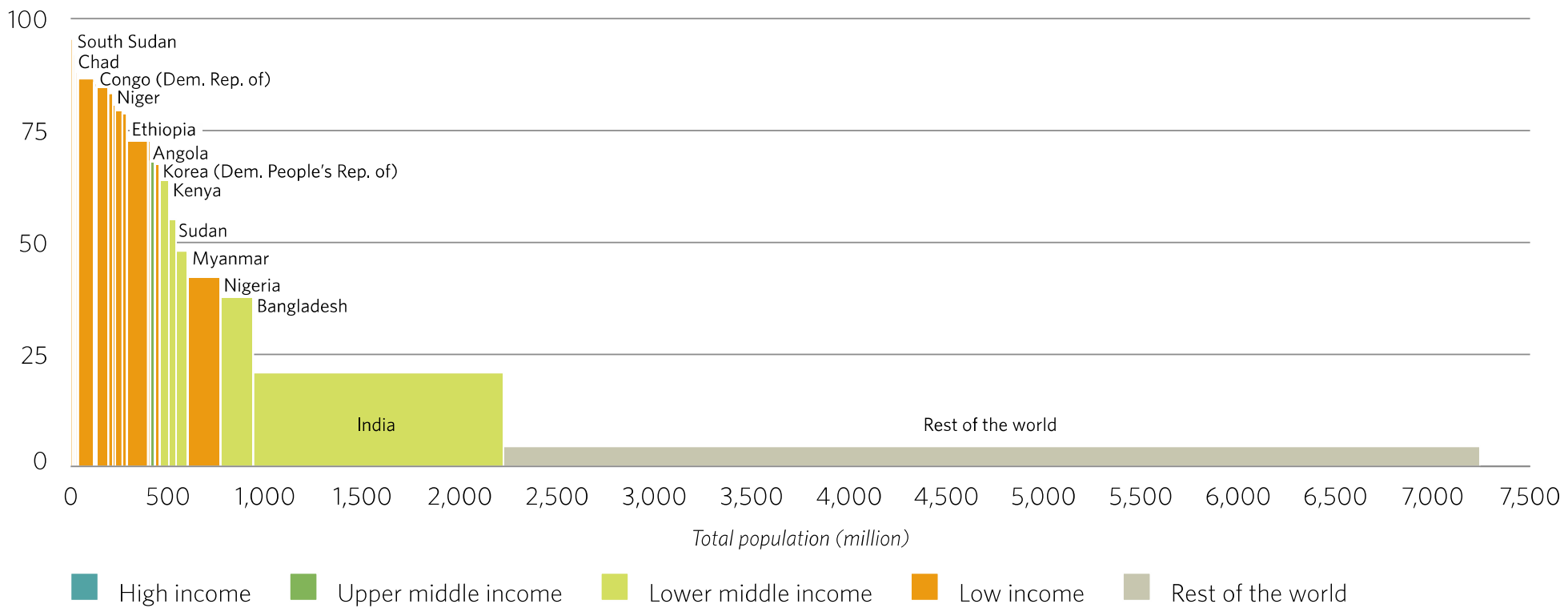


A quarter of those without electricity globally live in India and Bangladesh alone

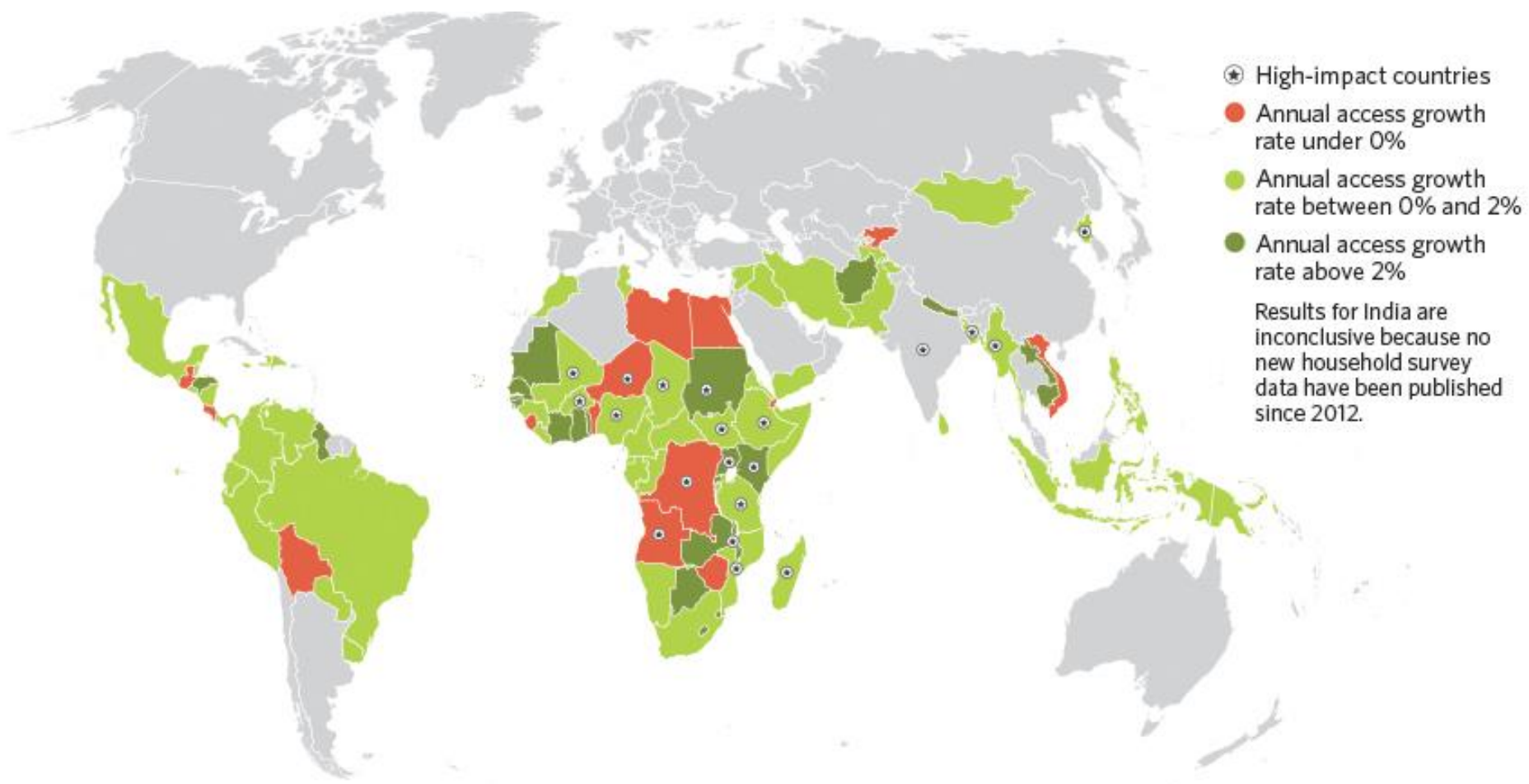


Share of population without access and total population, 2014

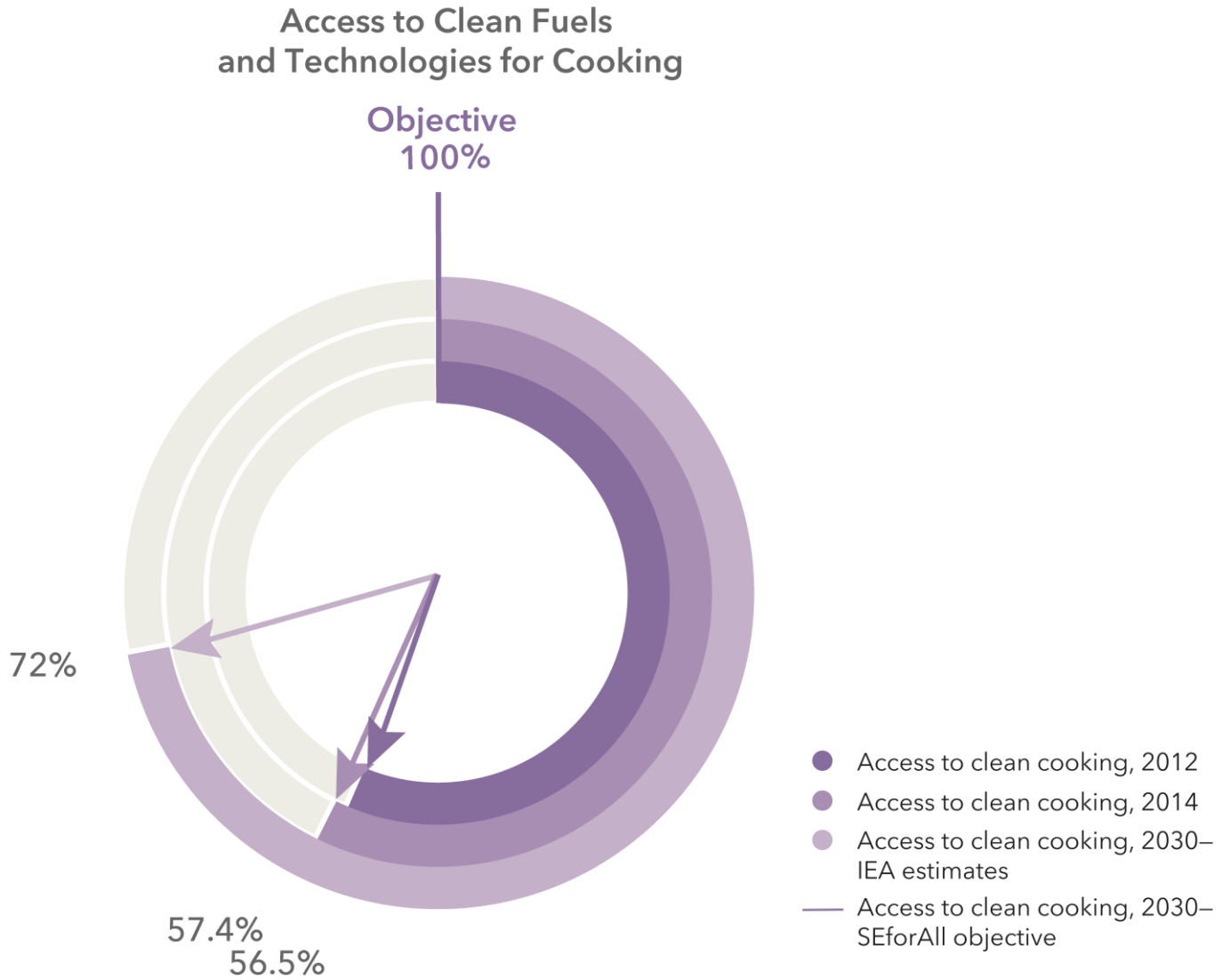
Share of population without access (%)



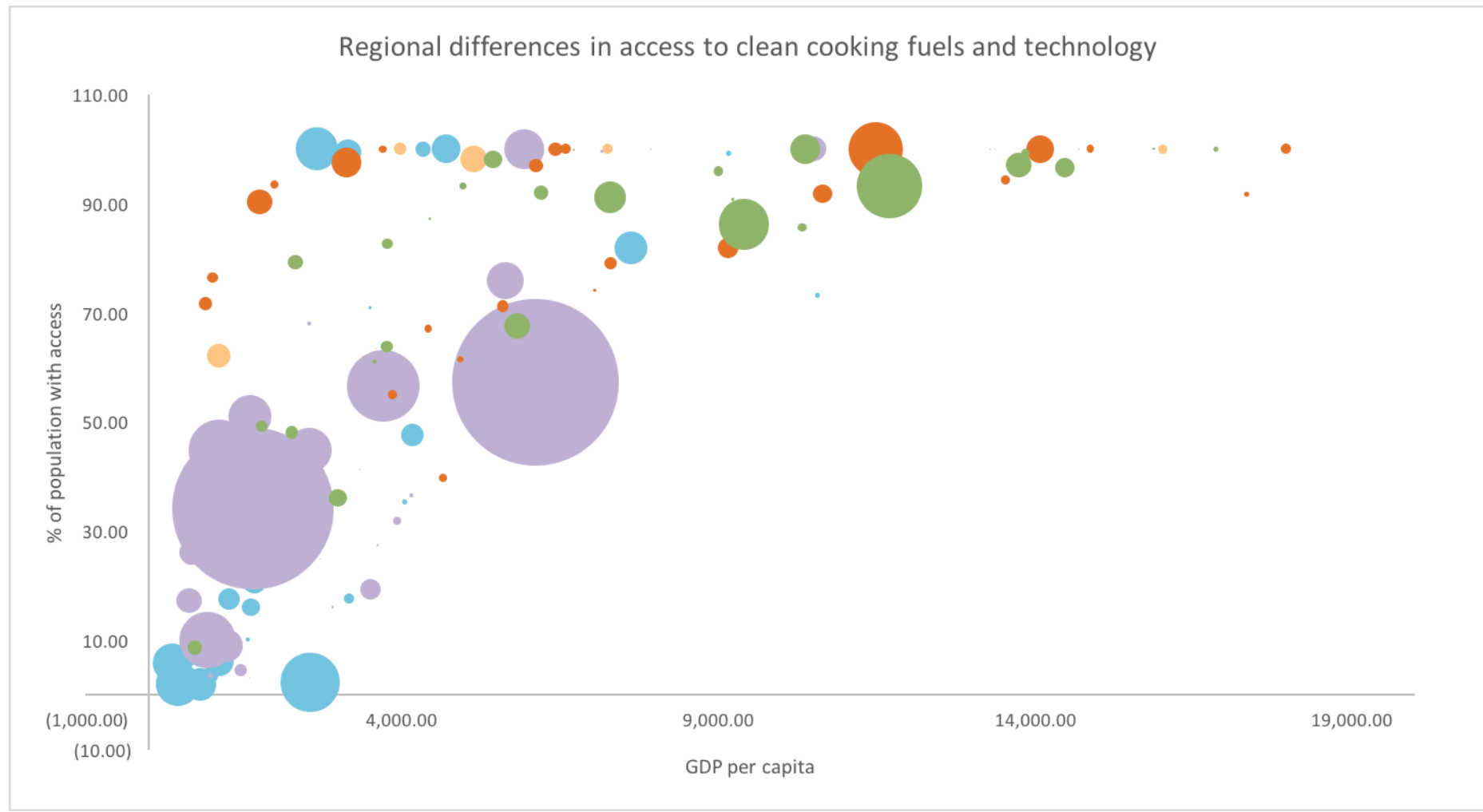
Asia-Pacific countries show good progress towards universal electrification (particularly Afghanistan and Cambodia)



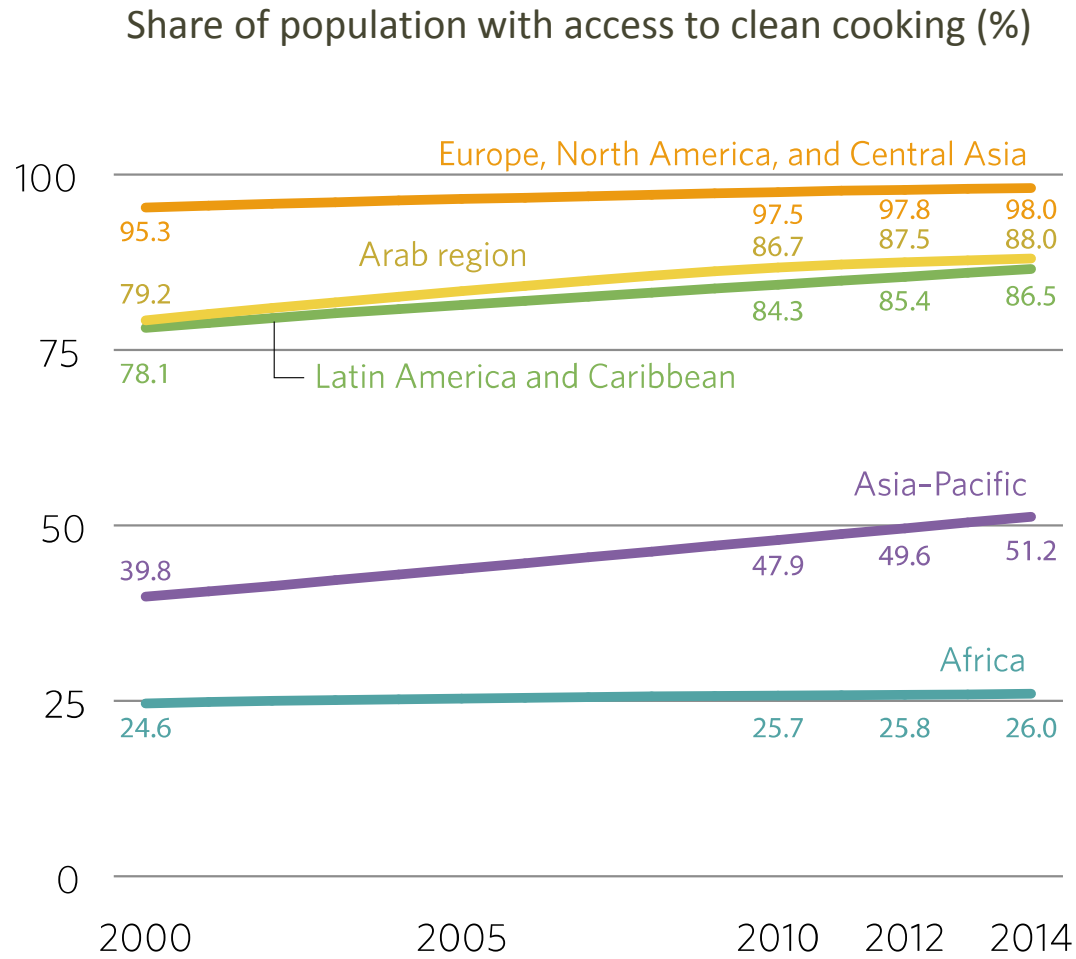
Under current trends, global access to clean cooking projected to rise from 57% in 2014 to 72% by 2030



Universal access to clean cooking reached only at much higher levels of income (>\$10,000 pc)

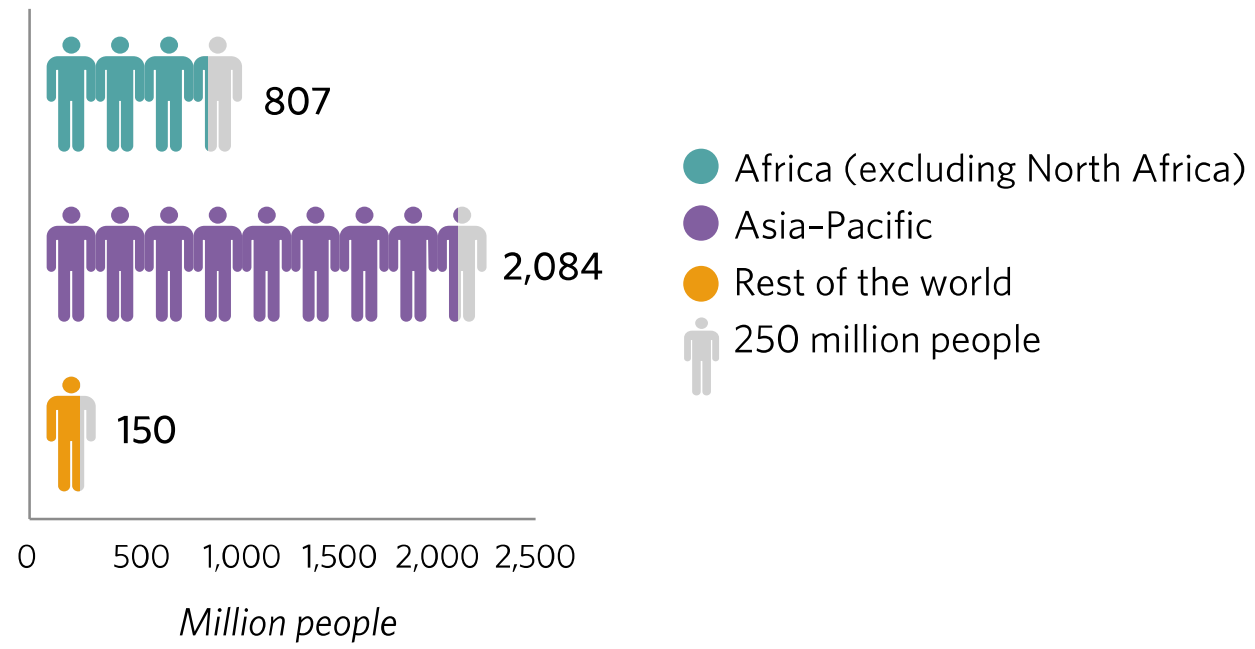


Africa and Asia–Pacific both lagging far behind on access to clean cooking



More than two-thirds of the world's population without access to clean cooking in 2014 lived in Asia–Pacific

Location of the 3.04 billion people living without access to clean cooking, 2014

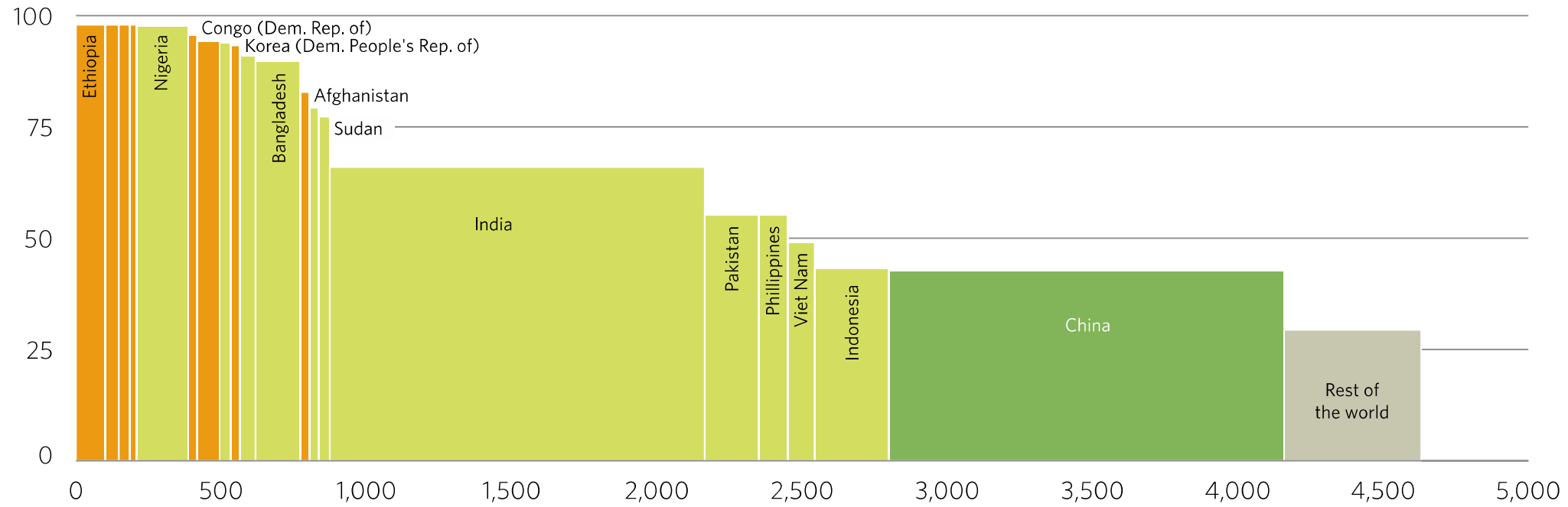


Two thirds of those without access to clean cooking globally live in India, China and half a dozen other Asian countries



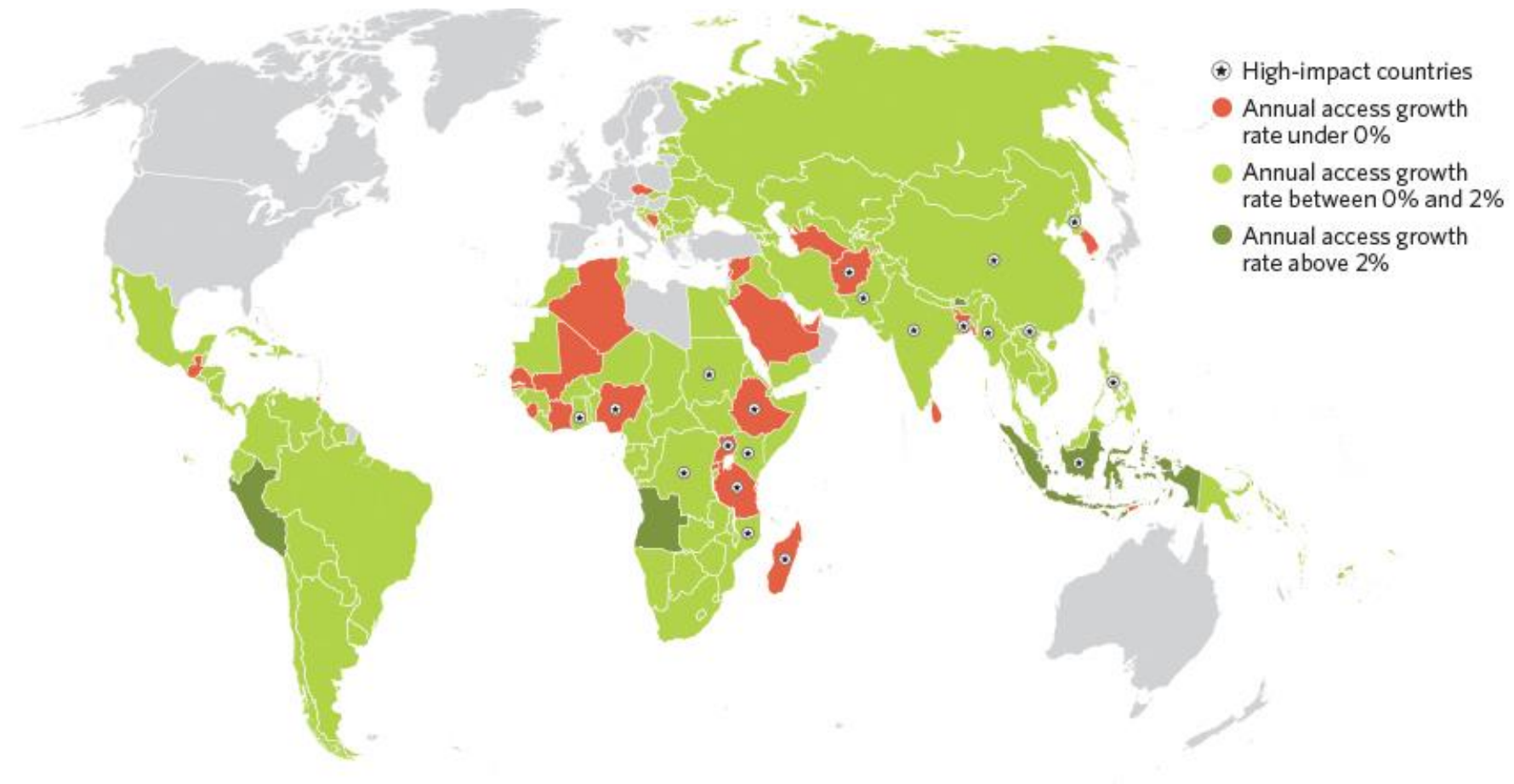
Share of population without access and total population, 2014

Share of population without access (%)



High income Upper middle income Lower middle income Low income Rest of the world

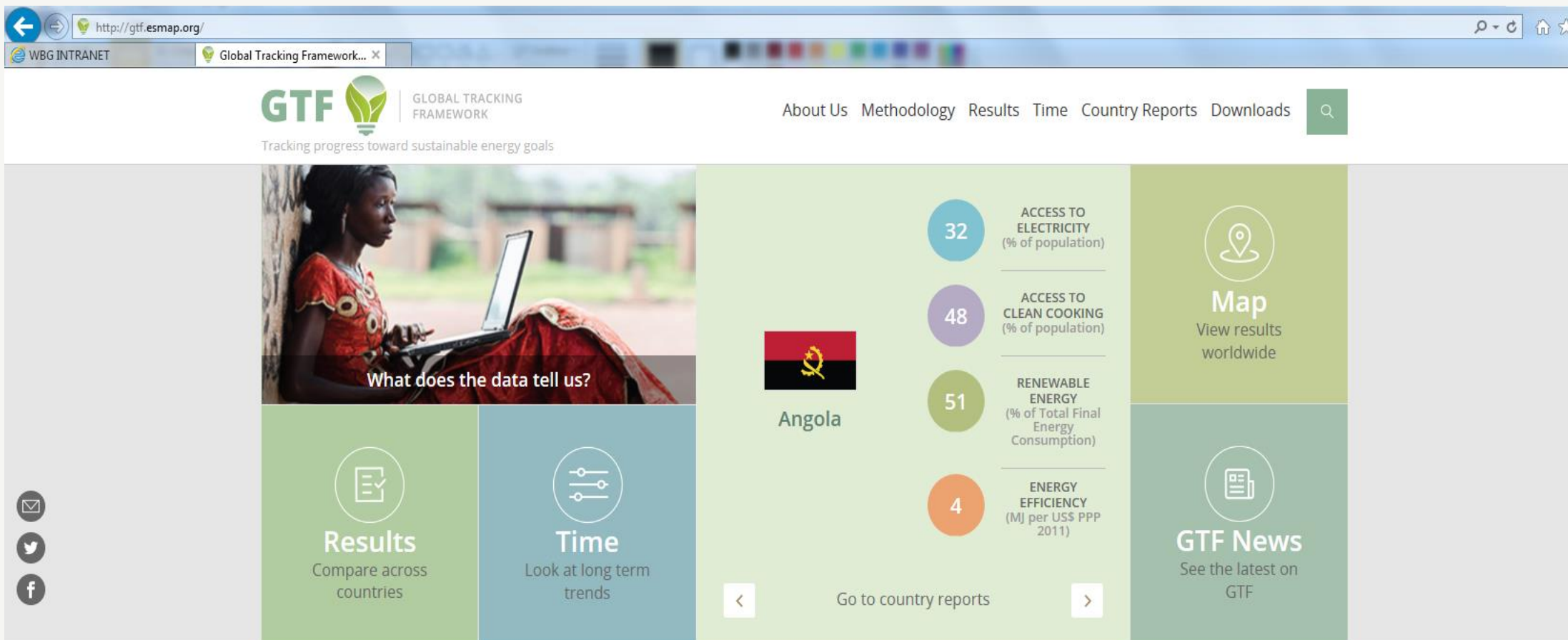
Asia-Pacific countries make some progress on universal access to clean cooking (particularly Indonesia)





Takeaway messages

1. Indicators are a work in progress; but global standardization will inevitably introduce differences with country conventions
2. Asia-Pacific made strong progress on electrification during last 25 years converging rapidly with more developed regions
3. Asia-Pacific lags far behind on access to clean cooking and progress is slow, with few exceptions



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GTF GLOBAL TRACKING FRAMEWORK
Tracking progress toward sustainable energy goals

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Results
Compare across countries

Time
Look at long term trends

Angola

32	ACCESS TO ELECTRICITY (% of population)
48	ACCESS TO CLEAN COOKING (% of population)
51	RENEWABLE ENERGY (% of Total Final Energy Consumption)
4	ENERGY EFFICIENCY (MJ per US\$ PPP 2011)

Map
View results worldwide

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