

INVESTMENT IN SUSTAINABLE ENERGY

OCTOBER 22, 2021

AMBASSADORIAL RETREAT IN PREPARATION FOR LDC5



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I. THE SUSTAINABLE ENERGY CHALLENGE

SDG7 DETAILED OBJECTIVES. 2 SUB-GOALS RELATED TO ENSURING UNIVERSAL ACCESS. 1 SUB-GOAL TO INCREASE ENERGY EFFICIENCY. 1 SUB-GOAL TO INCREASE RENEWABLE ENERGY

The [Sustainable Development Goals](#) are a universal call to action to end poverty, protect the planet and improve the lives and prospects of everyone, everywhere. The 17 main Goals were adopted by all UN Member States in 2015, as part of the [2030 Agenda for Sustainable Development](#)

All figures below in %

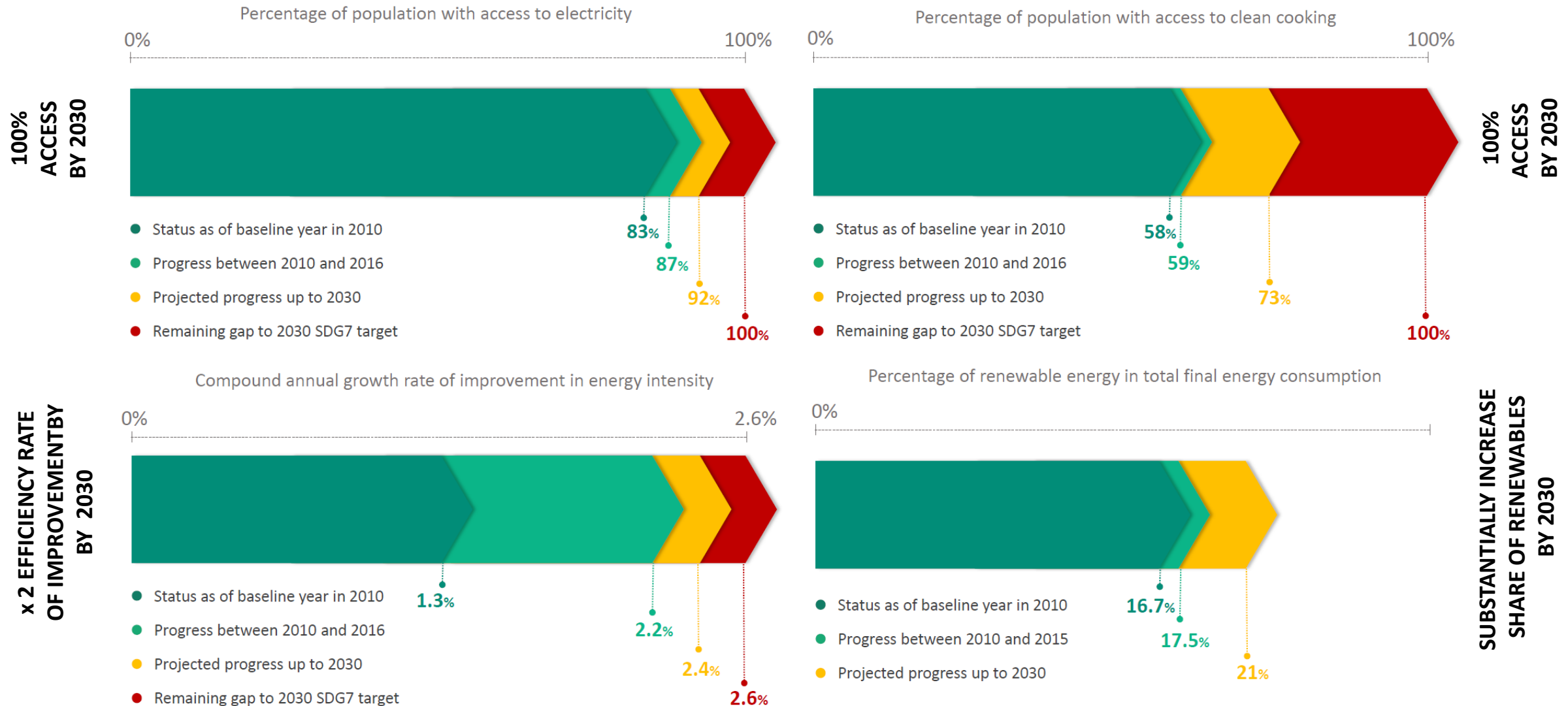
	OBJECTIVE 1		OBJECTIVE 2	OBJECTIVE 3
	Universal access to modern energy services		Doubling global rate of improvement of energy efficiency	Increase substantially renewable energy in global energy mix
Proxy indicator	Percentage of population with electricity access	Percentage of population with primary reliance on non-solid fuels	Rate of improvement in energy intensity *	Renewable energy share in TFECE
Historic reference 1990	76	47	1.3	16.6
Starting point 2010	83	59		
Objective for 2030	100	100	2.6	

Source: World Bank/ESMAP, IEA, *Global Tracking Framework*, 2013.

* The rate of improvement in energy intensity is measured as the global annual average percentage of reduction of total primary energy supply per unit of GDP. It used to decrease by 1.6% in 1990 and SDG7 goal is to double that reduction rate.

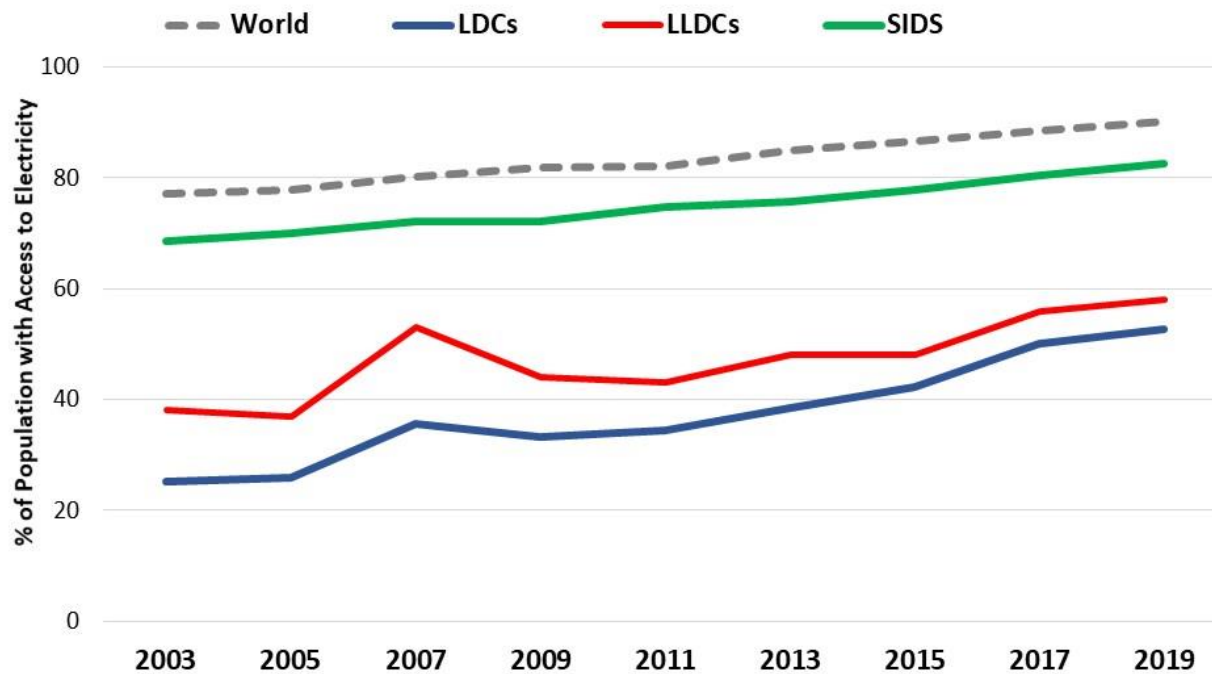
PROGRESS FROM 2010 TO 2020 ACROSS ALL SDG7 GOALS HAS BEEN UNEVEN

2020-2030 WILL NEED TO BE A DECADE OF STRONG ACTION



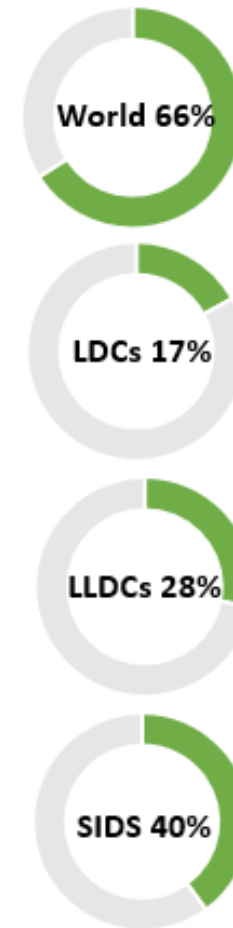
ACCESS TO ELECTRICITY AND CLEAN COOKING SOLUTIONS IS KEY TO ECONOMIC AND HUMAN DEVELOPMENT

Access to Electricity (2003-2019)



Source: World Bank (2021)

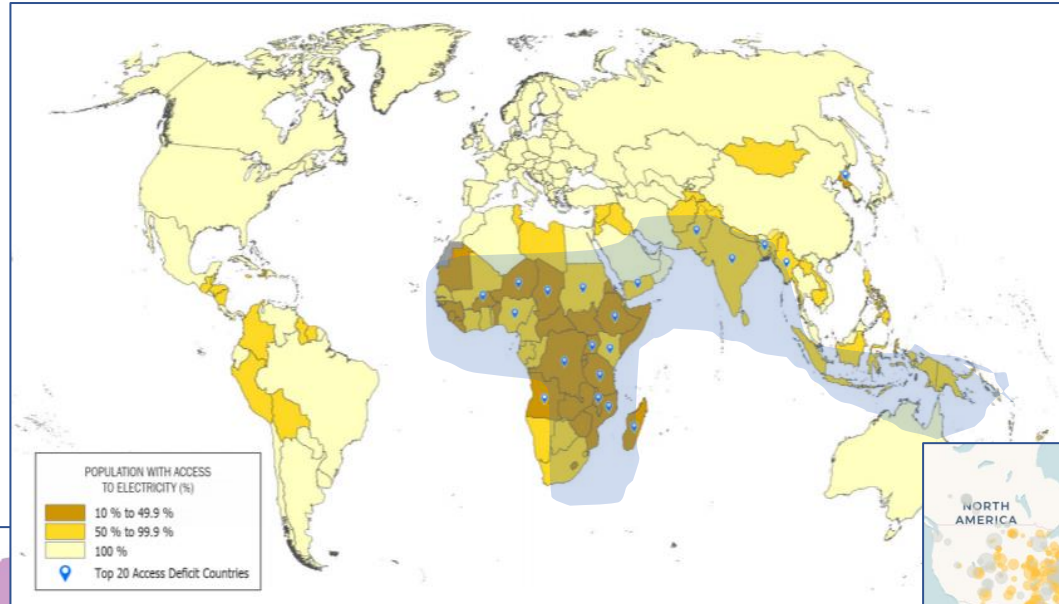
Access to Clean Cooking (2019)



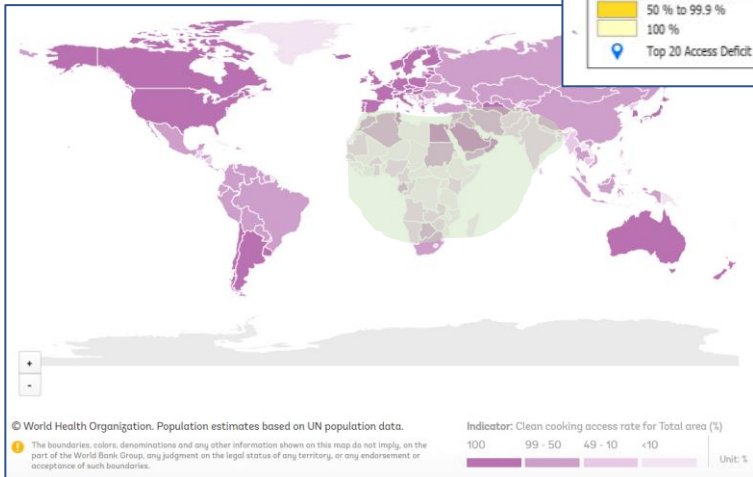
Achieving universal access of energy remains a critical challenge for LDCs, LLDCs, and SIDS

TWO GEOGRAPHICALLY CONCENTRATED SDG7 CHALLENGES: SUSTAINABLE ENERGY ACCESS AND ENERGY TRANSITION

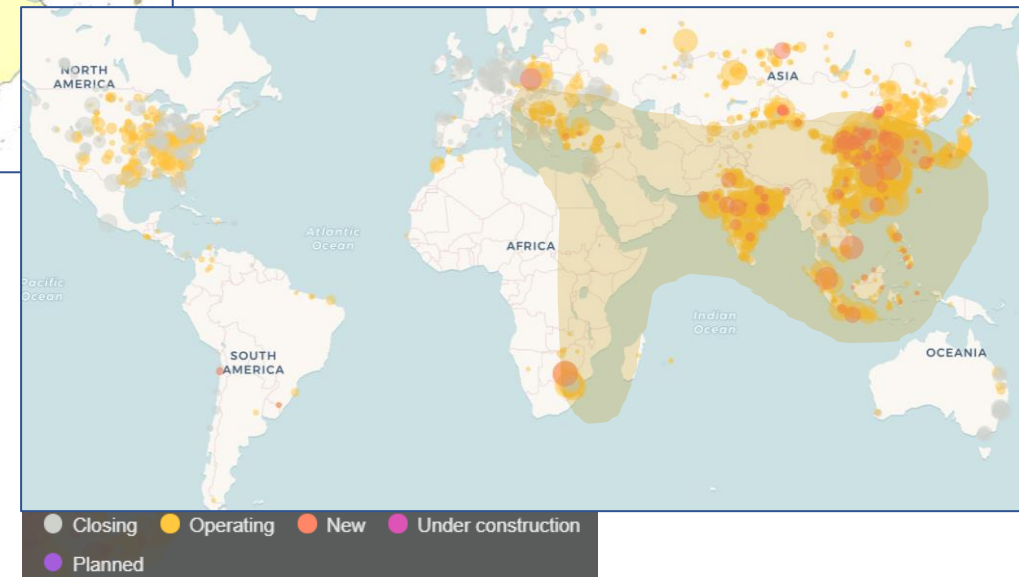
Access to electricity, 2018



Access to clean cooking, 2018



Coal-fueled electricity plants, 2019



Source: IEA, IRENA, World Bank, WHO, UNSD, *Tracking SDG7, The Energy Progress Report 2020*, 2020.

Source: <https://www.carbonbrief.org/mapped-worlds-coal-power-plants>

II. THE INVESTMENT CHALLENGE

Substantial Investment Gaps for achieving universal access of energy and net zero emissions

Getting the world on track to net zero emissions by 2050 requires clean energy transition related investments to accelerate from current levels (~ 1 trillion) to around US\$ 4 trillion annually by 2030

- ❖ It covers the world and RE, EE, grid infrastructure, and end-use decarbonization
- ❖ This level of investments is necessary mainly to achieve NDC targets in six major Asian economies: China, India, Indonesia, Pakistan, Philippines and Vietnam

Achieving universal access of energy in emerging markets and developing economies will require on average US\$ 35 billion annually by 2030 (US\$ 30 billion for electricity and US\$ 5 billion for clean cooking), with more than half concentrated in Sub-Saharan Africa.

In total, around \$195B are needed to achieve universal electricity access in SSA by 2030, most in LDCs

based on high level geospatial electrification models by GEP

By 2030, ~\$195 billion is needed to achieve universal electricity access, among them:

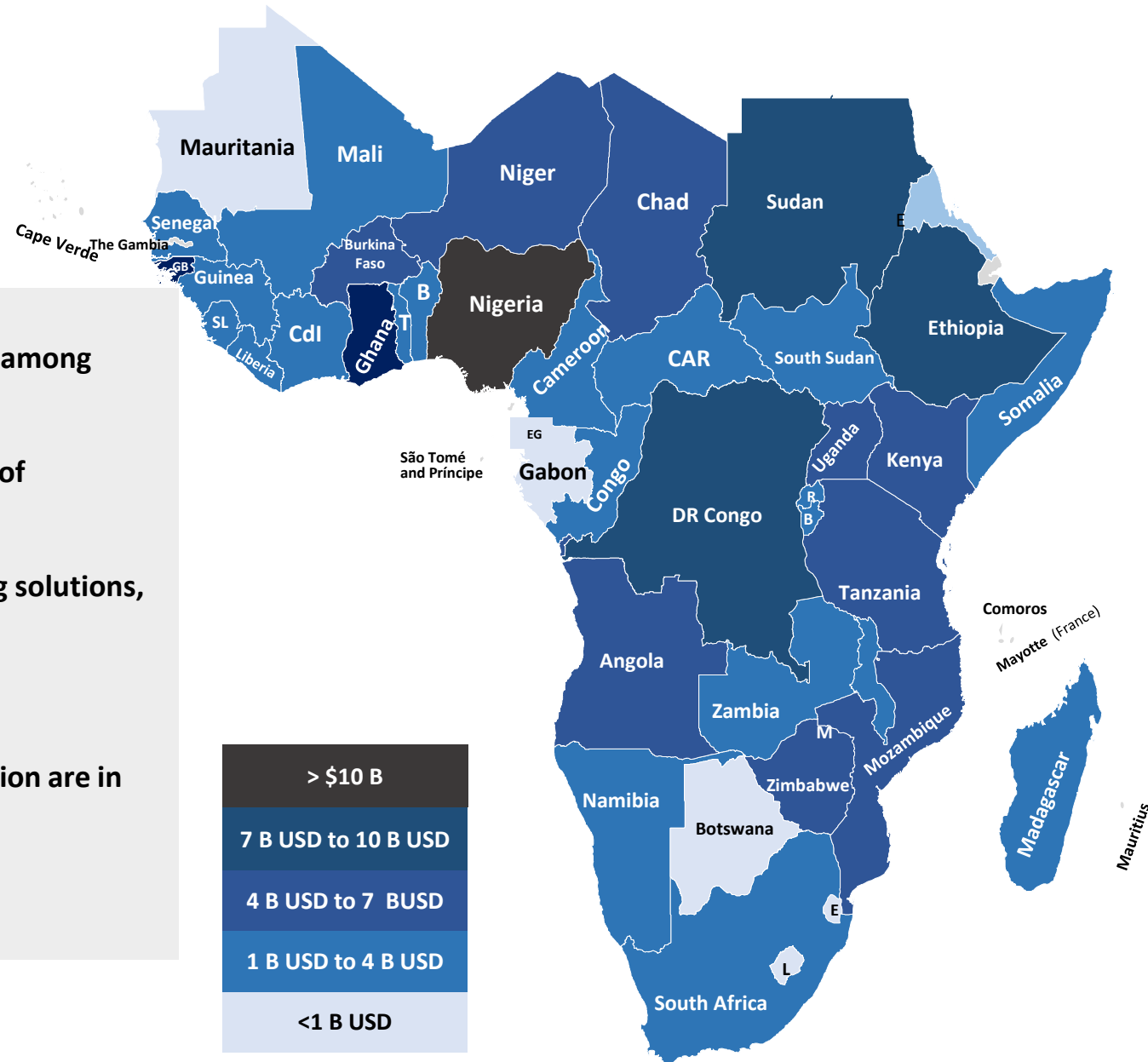
~\$155 billion to connect roughly 200 million households. The majority of unelectrified households are in LDC countries.

~\$40 billion to connect schools and health clinics, provide clean cooking solutions, and strengthen the enabling environment

The majority of unelectrified households are in LDCs

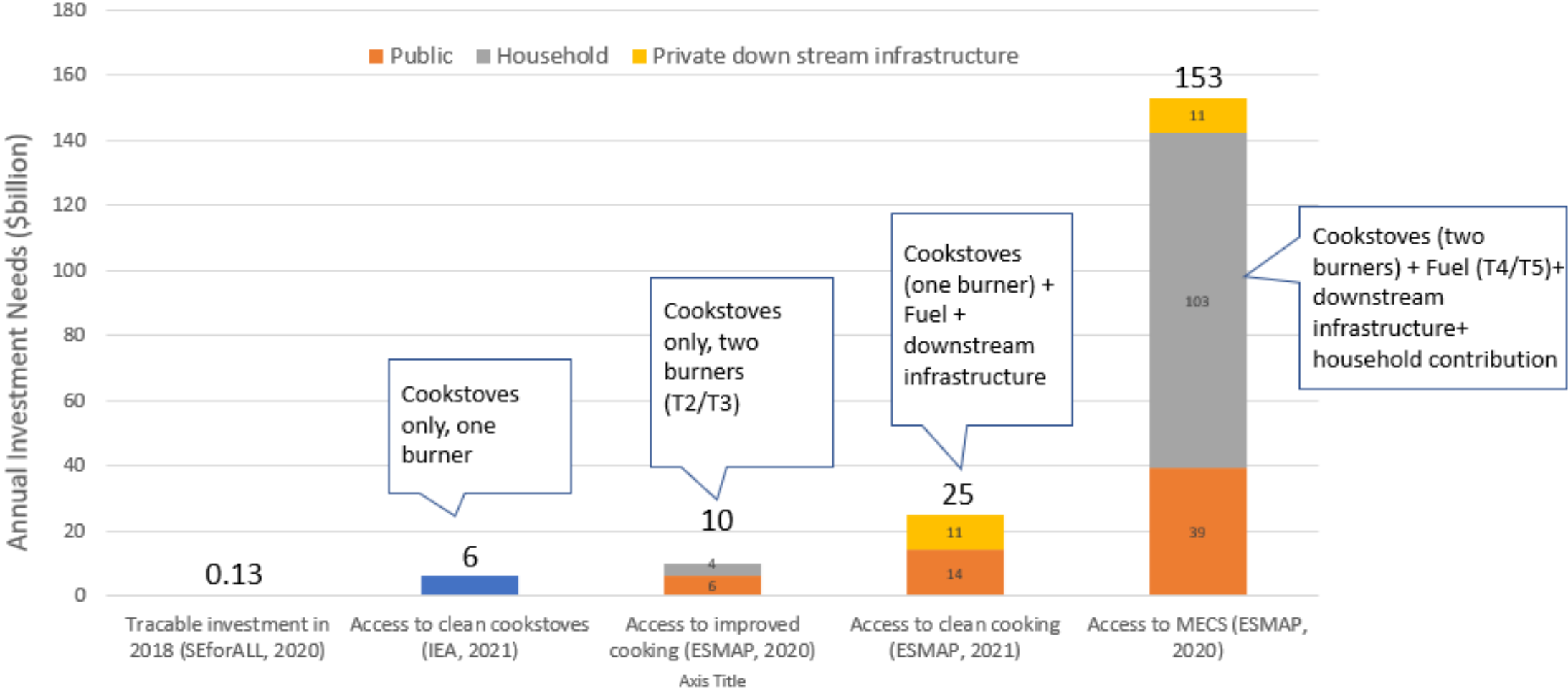
4 out of five countries with the largest investment needs for electrification are in LDCs: Ethiopia, DRC, Sudan and Uganda

Leveraging both public and private sector financing is essential.

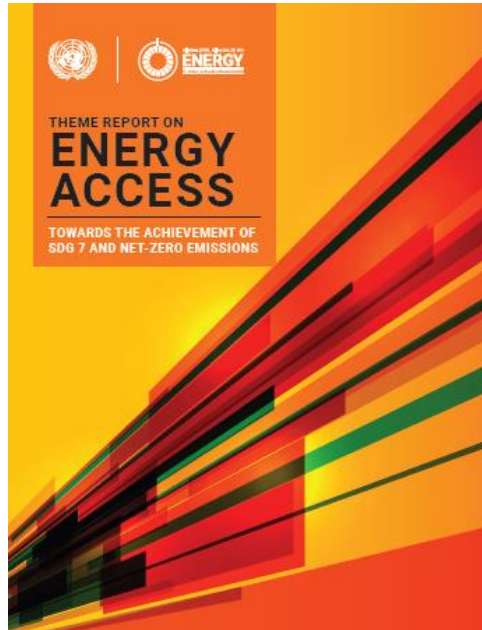


* Source: Estimates based on 2019 Global Electrification Platform

Investment Gap to Achieve Universal Access to Clean Cooking



Estimated Energy Access Financing by 2025



Co-Lead organizations



Energy Access Financing	2020	2025
Annual financing (public/ private) flows to clean cooking access	Tens of millions ⁶⁷	USD 25 billion ⁶⁸
Share of annual financing flows to clean energy access going to Least-Developed Countries (LDCs)	n/a	50%
An impact bond market is established for energy access, including for clean cooking	No	Yes
Annual financing flows to electricity access	USD 20 billion ⁶⁹	USD 35 billion ⁷⁰
Share of annual financing flows to electricity access going to Least-Developed Countries (LDCs)	n/a	50%
Portion of annual electricity access financing going to mini-grids	USD 1 billion ⁷¹	USD 10 billion ⁷²
Annual financing for equity, debt, and grants to off-grid solar companies	USD 315 million ⁷³	USD 1.1 billion
Annual public sector financing for off-grid solar to bridge affordability gap	USD 0.01 billion ⁷⁴	0.34 billion

III. THE FINANCING CHALLENGE

The Key Financing Challenge

No amount of public financing will be sufficient to meet the goals of the Paris Agreement and SDG7, private capital will be essential to fill the gap

Concessional financing needs to target high impact solutions focused on reducing poverty, enhancing developmental outcomes, and reducing carbon emissions.

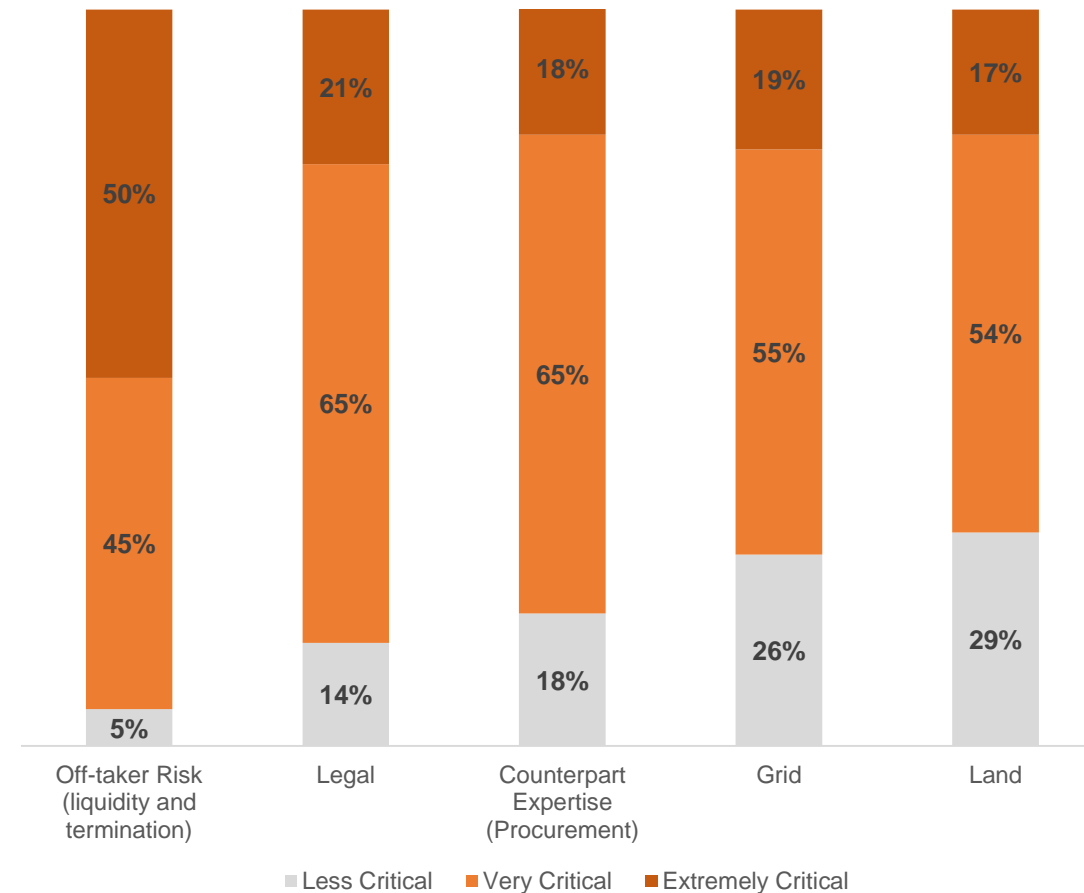
How to mobilize private capital in sustainable energy?

Crucial challenges are hindering a sustained and significant deployment of privately-owned clean energy projects in most developing countries:

- Weak enabling policy/regulatory environment
- Absence of open and transparent procurement
- Lack of access to risk mitigation coverage
- Grid integration issues for VRE technology

As a result, (i) a piecemeal approach, project-by-project and (ii) a lack of bankable and sustainable pipeline of projects for private sector investment

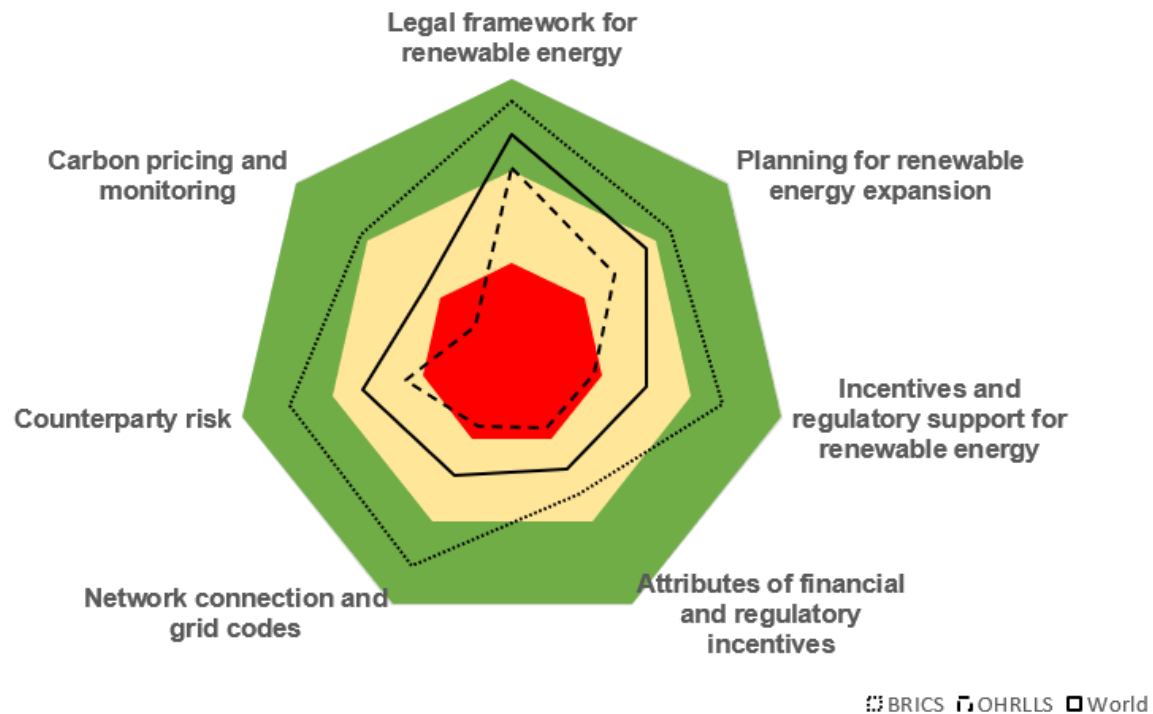
Key Risks Identified by Private Investors (1)



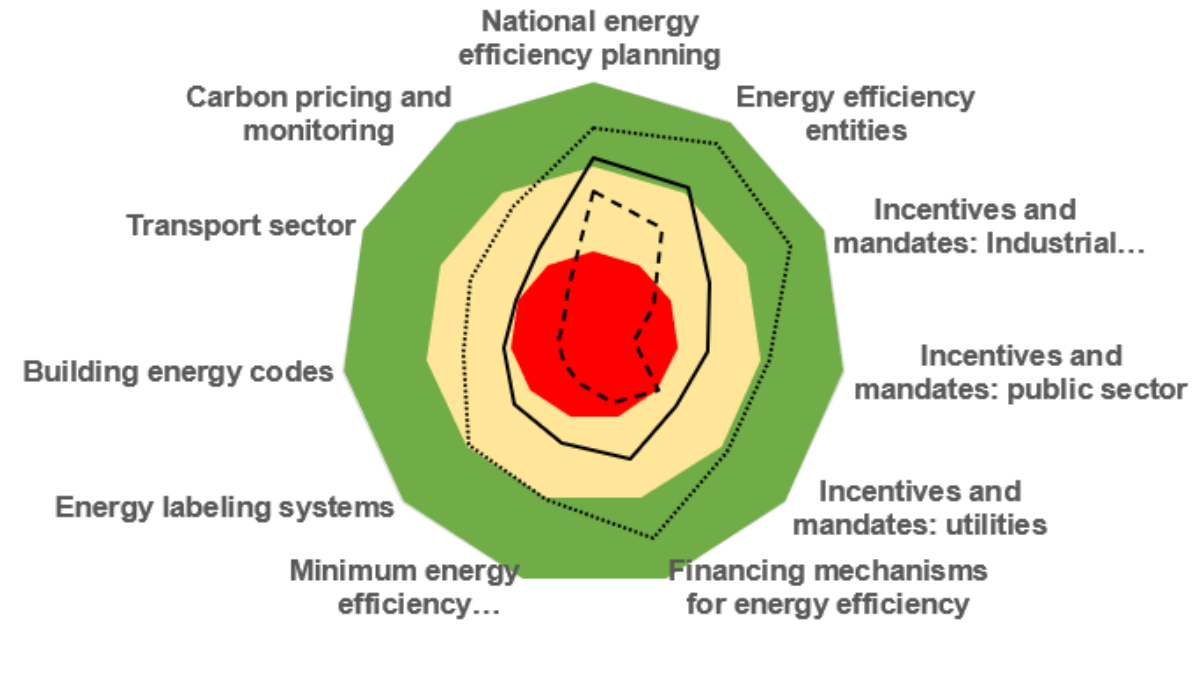
(1) Based on a market sounding conducted in Sept 2018 with 45 responses from private sector IPPs/lenders covering more than 20 countries on solar

Tracking Policies to Drive Investment in Clean Energy

RISE Renewable Energy score 2019



RISE Energy Efficiency score 2019

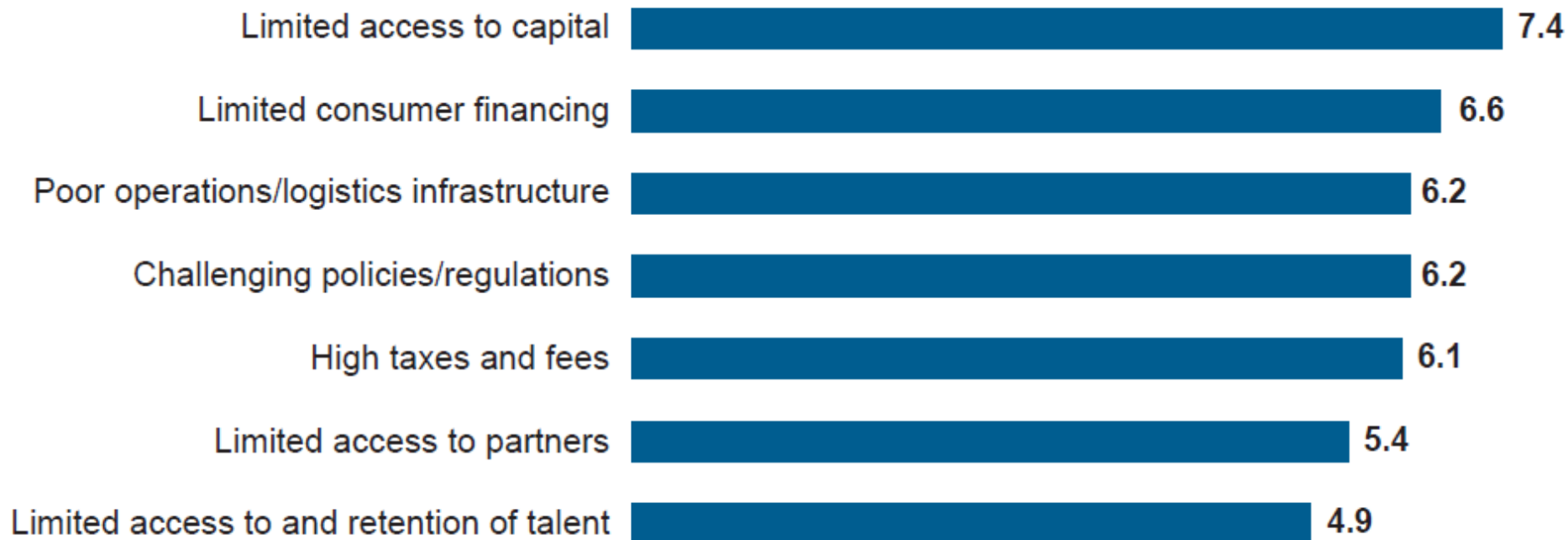


Attracting private sector participation for expanding access to electricity and clean cooking is challenging

Weighted rank score

N = 56

Ranking of Biggest Barriers to Scale

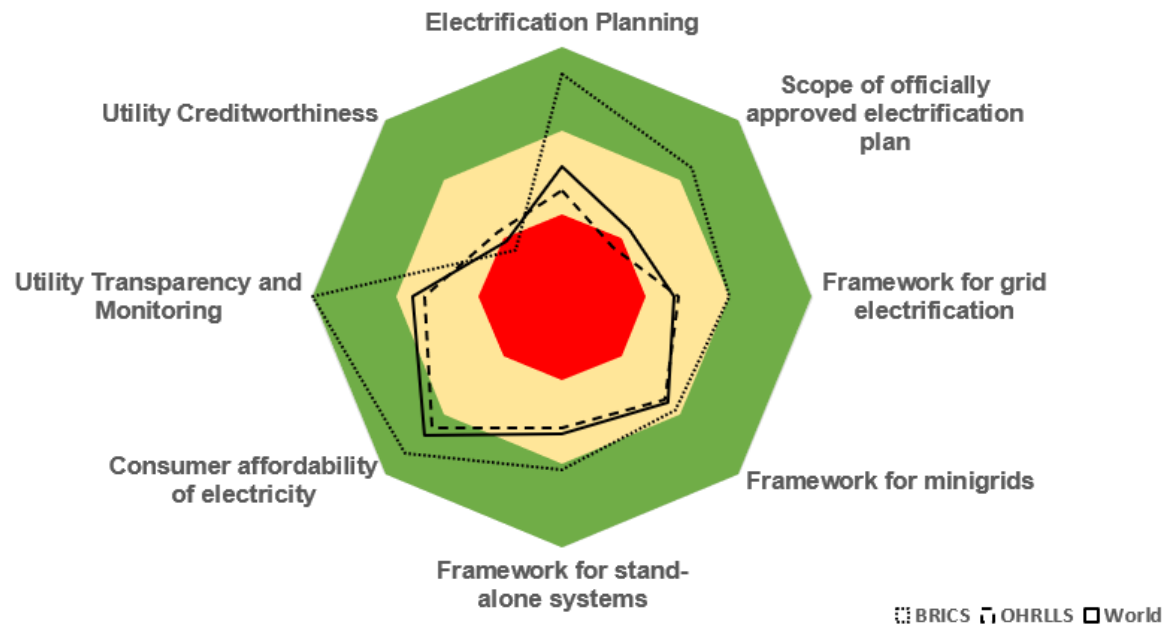


Sources: 2019 ESMAP/CCA/LU Enterprise Survey; Task Team analysis.

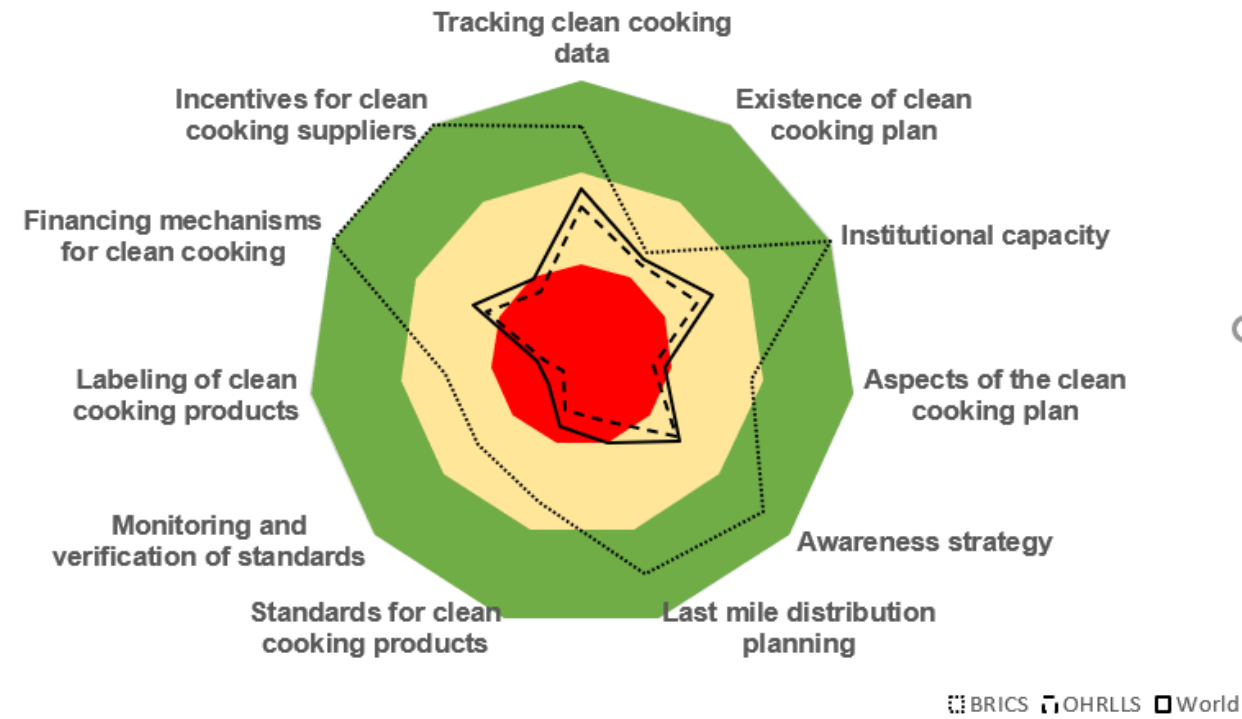
Note: Non-categorized or incomplete answers were excluded from the scoring.

Tracking Policies to Drive Investment in Energy Access

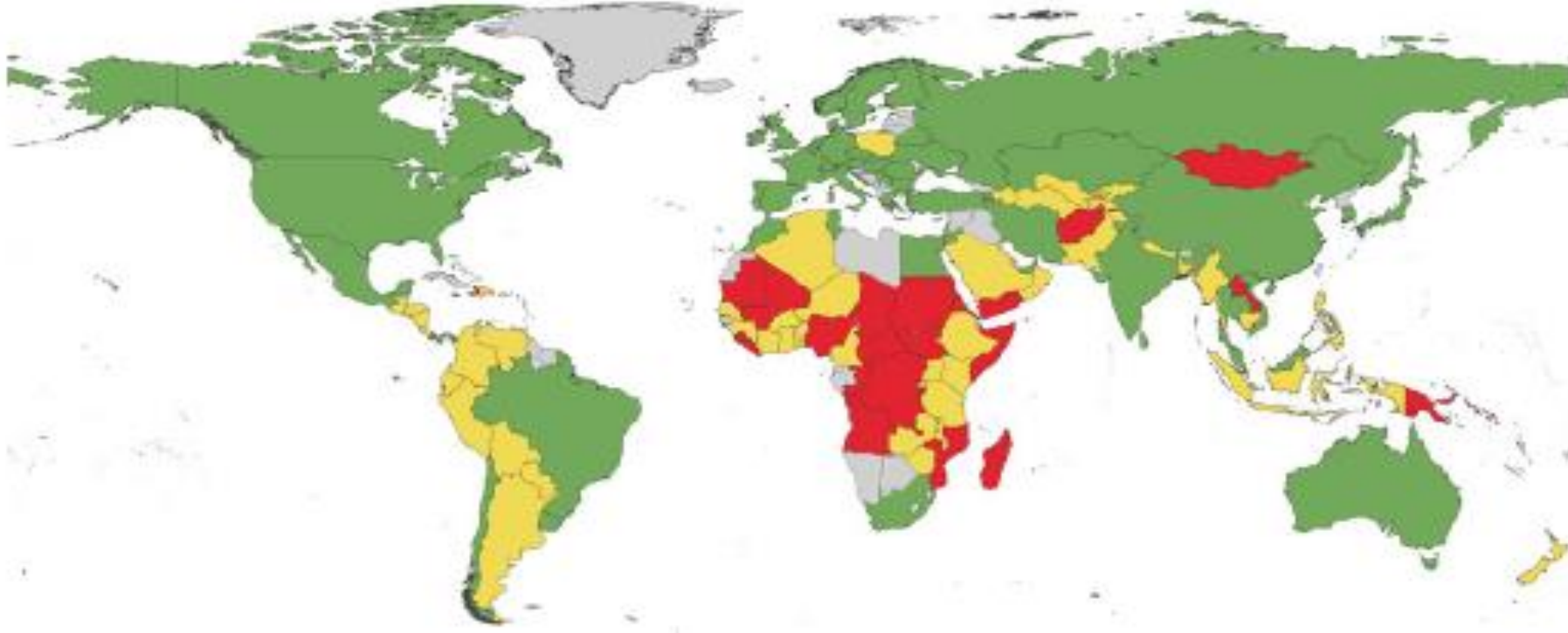
RISE Electricity Access score 2019



RISE Clean Cooking Access score 2019

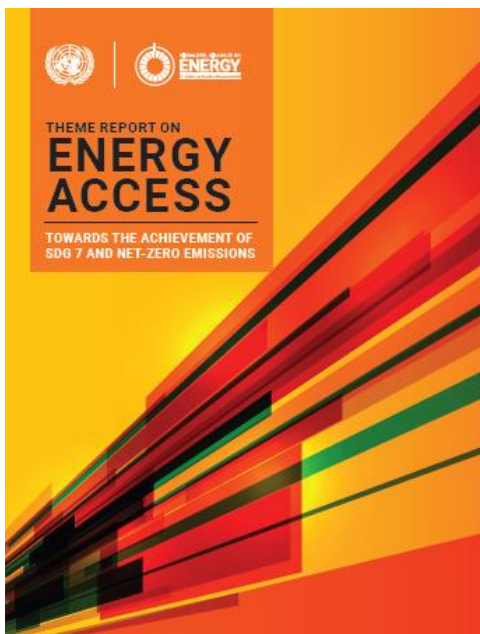


Overall Global Progress in Regulatory Indicators for Sustainable Energy



A priority is to reinforce enabling policy and regulatory frameworks to attract private investment

Enabling Policy and Regulatory Frameworks to be Achieved by 2025



Co-Lead organizations



Enabling policy and regulatory frameworks	2020 ³⁵	2025 ³⁶
Share of access-deficit countries with clean cooking strategies, action plans, and target countries with clean cooking RISE scores above 67 (advanced framework)	15%	100%
Share of access-deficit countries with national electrification strategies and integrated least-cost electrification plans with RISE scores above 67 (advanced framework)	26%	100%
Share of access-deficit countries with frameworks mini-grids and for stand-alone systems with RISE scores above 67 (advanced framework)	45%	100%
Share of access-deficit countries with utilities that are considered at least moderately creditworthy (medium and advanced framework)	41%	100%
Average RISE score for clean cooking access	37	Above 67
Average RISE score for electricity access	53	Above 67

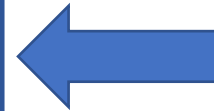
IV. DEPLOYING SOLUTIONS

How to fill the investment gaps?

- **Public sector**
 - Improve enabling environment
 - Provide public investment for public benefits (e.g., climate, health, social equity)
 - Incentivize/crowd in the private investment
- **Private sector**
 - Improve business viability and bankability: reduce costs, improve products/services, and increase revenues/profitability.
 - Support access to finance
 - Private/philanthropy funding for public benefits
- **Households**
 - Increase awareness and willingness to pay
 - Support access to consumer finance

Financing instruments

- Results-based financing
- Carbon finance
- Impact financing
- Grant financing
- Debt financing
- Equity financing
- Risk Mitigation
- Guarantees
- Collateral support
- Crowdfunding
- Microfinancing
- ...



Sustainable Renewables Risk Mitigation Initiative (SRMI)

An Integrated Approach for Sustainable VRE Deployment

Enabling Environment

(upstream support incl. generation & transmission planning, variable renewables (VRE) integration, regulatory and strategic support)

Critical Public Investments

(transmission lines, solar/wind park infrastructure and PPP mini-grids/SHS)

Robust Procurement

(downstream TA support incl. transaction advisory, feasibility studies, E&S instruments)

Risk Mitigation Coverage

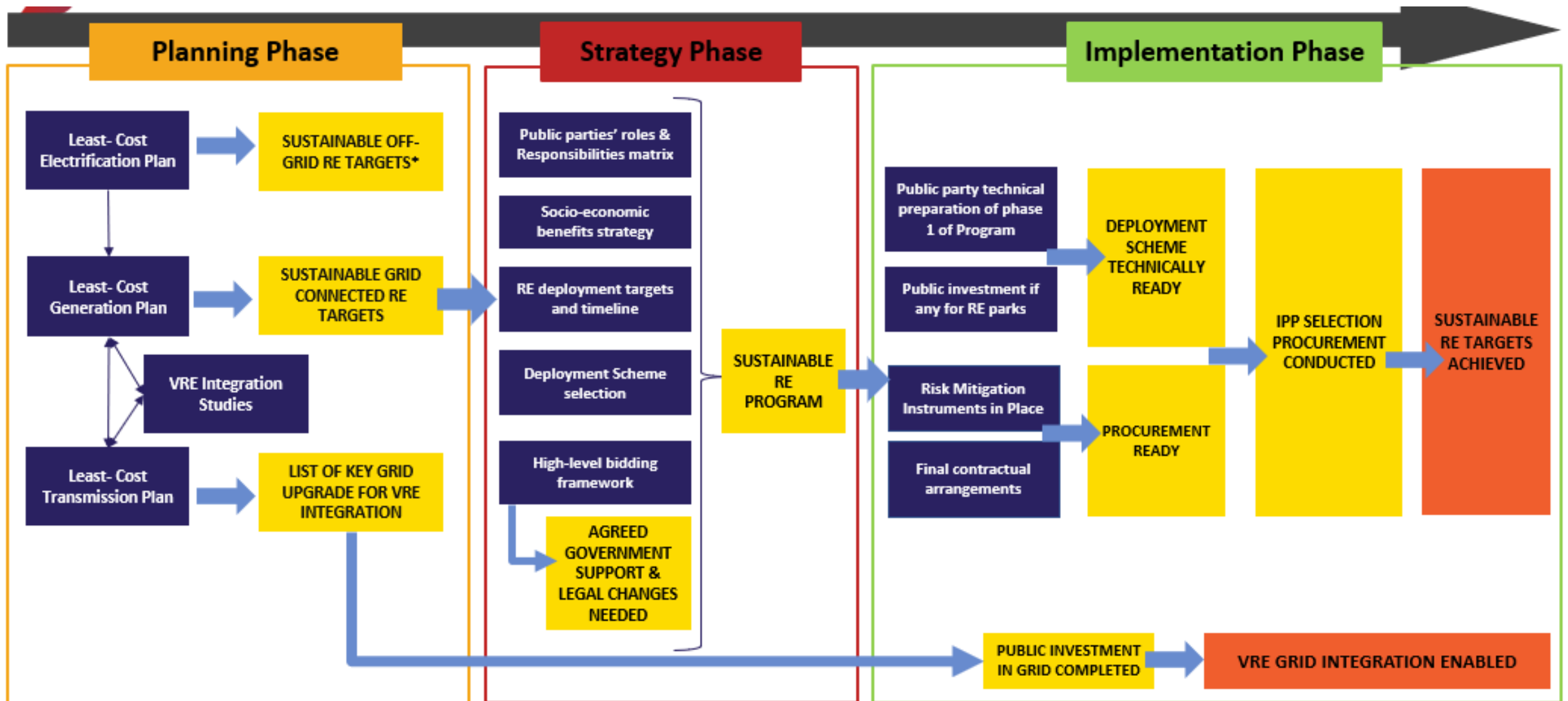
(guarantees for IPPs for grid-connected and off-grid projects, geothermal resource de-risking)

➔ **Leveraging private investments at scale while maximizing socio-economic benefits**

Blended with climate finance



A step-by-step process from the Government's perspective



■ Analysis/Studies ■ Outputs ■ Outcomes

(* In cooperation with the access team)

Burkina Faso: Innovative Financing to Leverage Private Financing in Sustainable Energy

Burkina Faso Solar Energy and Access project (SEAP)

Objective: to increase access to electricity services in selected rural areas and the availability of solar energy in Burkina Faso by leveraging private finance

Financing: IDA and CTF (Clean Technology Fund) financing (US\$168 million)
Private Sector Mobilization: \$ 350 million (attracting IPPs via auctions)

- Double solar penetration in the grid
- Government: acquisition of land/permits before auction, reinforcement of grid and dispatch
- Facilitate private investments mobilization through a competitive procurement of ~300 MW of solar energy with 335 MWh of battery storage
- Scale-up solar PV mini grids
- Provide electricity access to over a half million people, as well as SMEs, schools and health centers in rural areas.
- Save USD 230m over 10 years by switching from HFO to solar



ESMAP: Clean Cooking Fund



- Leverage World Bank/Multilateral Development Banks finance and attract private-sector **investments** in the clean cooking sector.
- Catalyze technology and business **innovations** by providing incentives for players across clean-cooking value chains.
- Link incentive payments with verified results at the output, outcome, and **impact** levels.



US\$500 MILLION TO CATALYZE \$2 BILLION IN INVESTMENTS AND REACH 200 MILLION PEOPLE

- Support a sizable stream of businesses along the supply chain delivering clean cooking solutions.
- Develop an impact bond market for the clean cooking sector to attract a broad range of funding.



REPLICATION AND SCALE-UP

Universal Access to Clean Cooking

Rwanda: Innovative Financing to Provide Clean Energy Access for the Poor

Rwanda Energy Access and Quality Improvement Project aims at increasing access to modern energy for households, enterprises, and public institutions and enhance the efficiency of electricity services in Rwanda.

- **Financing: IDA \$150 million, ESMAP Clean Cooking Fund \$10 million**
- Provide electricity access to 1.6 million people, including first-time access to 150,000 people in low-income brackets through off-grid solar systems
- Provide clean cooking access to 2.15 million people
- Responds to the challenge of low affordability by providing pro-poor results-based financing (RBF)
- RBF leverages private sector financing and delivery, while making services affordable for the poor
- Innovative subsidy targeting per household poverty status

Supported by Clean Cooking Fund (CCF)

At the United Nations 2019 Climate Summit, ESMAP launched its US\$500 million Clean Cooking Fund (CCF) – the first ever such fund to scale up investments in the clean cooking sector. The fund aims to scale up public and private investments by co-financing with Multi-lateral Development Bank's lending operations, catalyzing technology and business innovation, and linking incentives with verified results.

Supported by Lighting Global

Lighting Global is ESMAP-supported World Bank Group's initiative to rapidly increase access to off-grid solar energy for millions people living without electricity world-wide. Lighting Global works with manufacturers, distributors, governments, and other development partners to build and grow the modern off-grid solar energy market.



THANK YOU

