



Covenant of Mayors
in Sub-Saharan Africa

CoM SSA SEACAP Toolbox

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Publication date: November 2020

Author: ICLEI Africa

The full SEACAP Toolbox is found here: <https://comssa.org/>



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CoM SSA SEACAP Toolbox

3.1: Introducing the Energy Access Pillar

This chapter is one component of the SEACAP Toolbox for the full Toolbox, please visit: <https://comssa.org/>

What you will learn in this chapter:
Key definitions related to Energy Access
Energy access attributes and indicators
4 phases of developing the Access to Energy pillar of the SEACAP

This chapter has been designed for Local Government Officials and partners completing a SEACAP



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THE 3 PILLARS OF A SEACAP



Mitigation

Adaption

Acess to Energy



What is energy access?

The International Energy Agency defines energy access as:

“A household having reliable and affordable access to both clean cooking facilities and to electricity, which is enough to supply a basic bundle of energy services initially, and then an increasing level of electricity over time to reach the regional average”.

“A basic bundle of energy services means, at a minimum, several lightbulbs, task lighting (such as a flashlight), phone charging and a radio.”



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Access to Energy:

Key attributes:

- **Secure:** The reliability and the stability of the energy sources
- **Sustainable:** The share of renewable energy in the energy mix
- **Affordable:** The cost and the willingness to pay for the energy
- **Other attributes:** health, safety, capacity, modern



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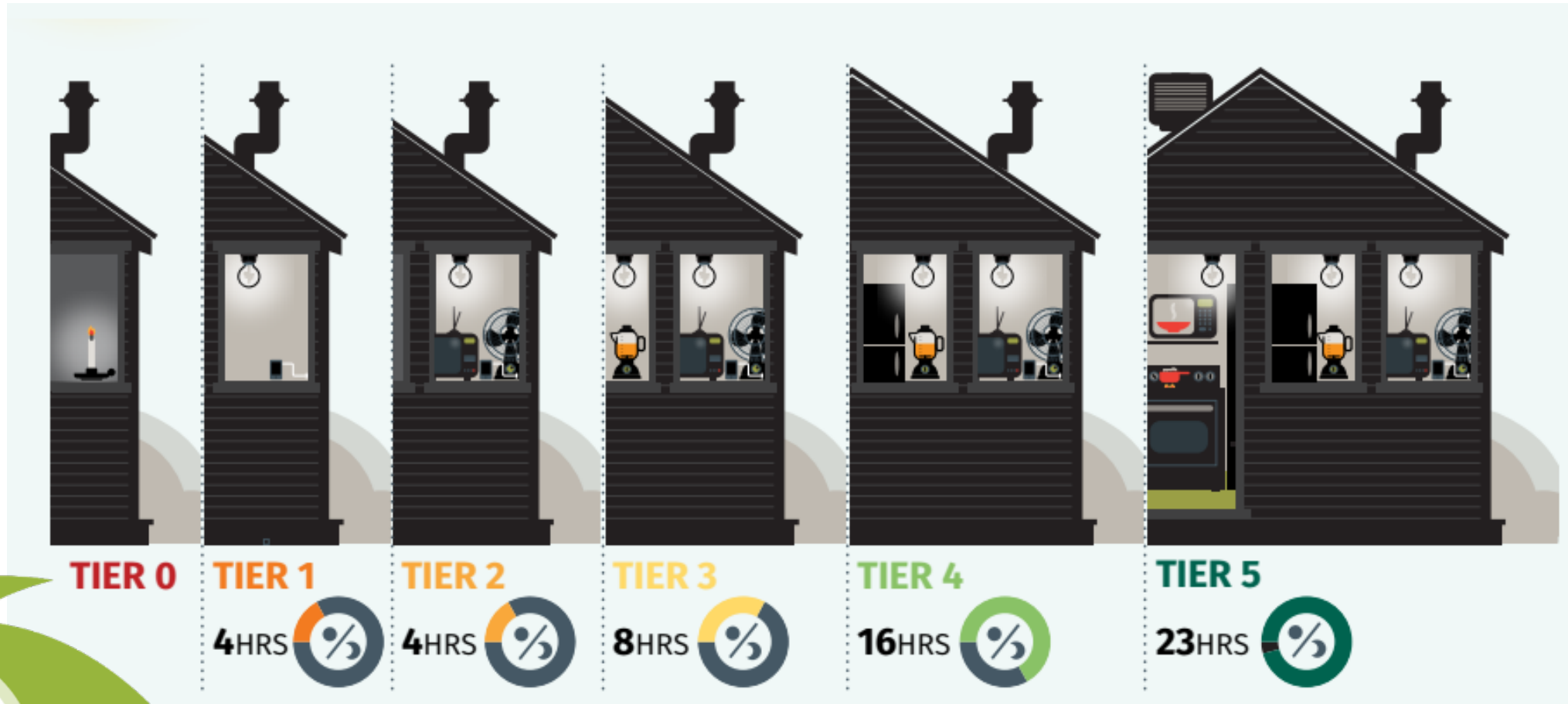
The Multi-Tier Framework of energy access

- The MTF approach goes beyond the traditional binary measurement of energy access—for example, having or not having a connection to electricity, using or not using clean fuels in cooking
- The multi tier framework attempts to capture the multi-dimensional nature of energy access and the vast range of technologies and sources that can provide energy access, while accounting for the wide differences in user experience.



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Minimum electricity requirements by tier of electricity access



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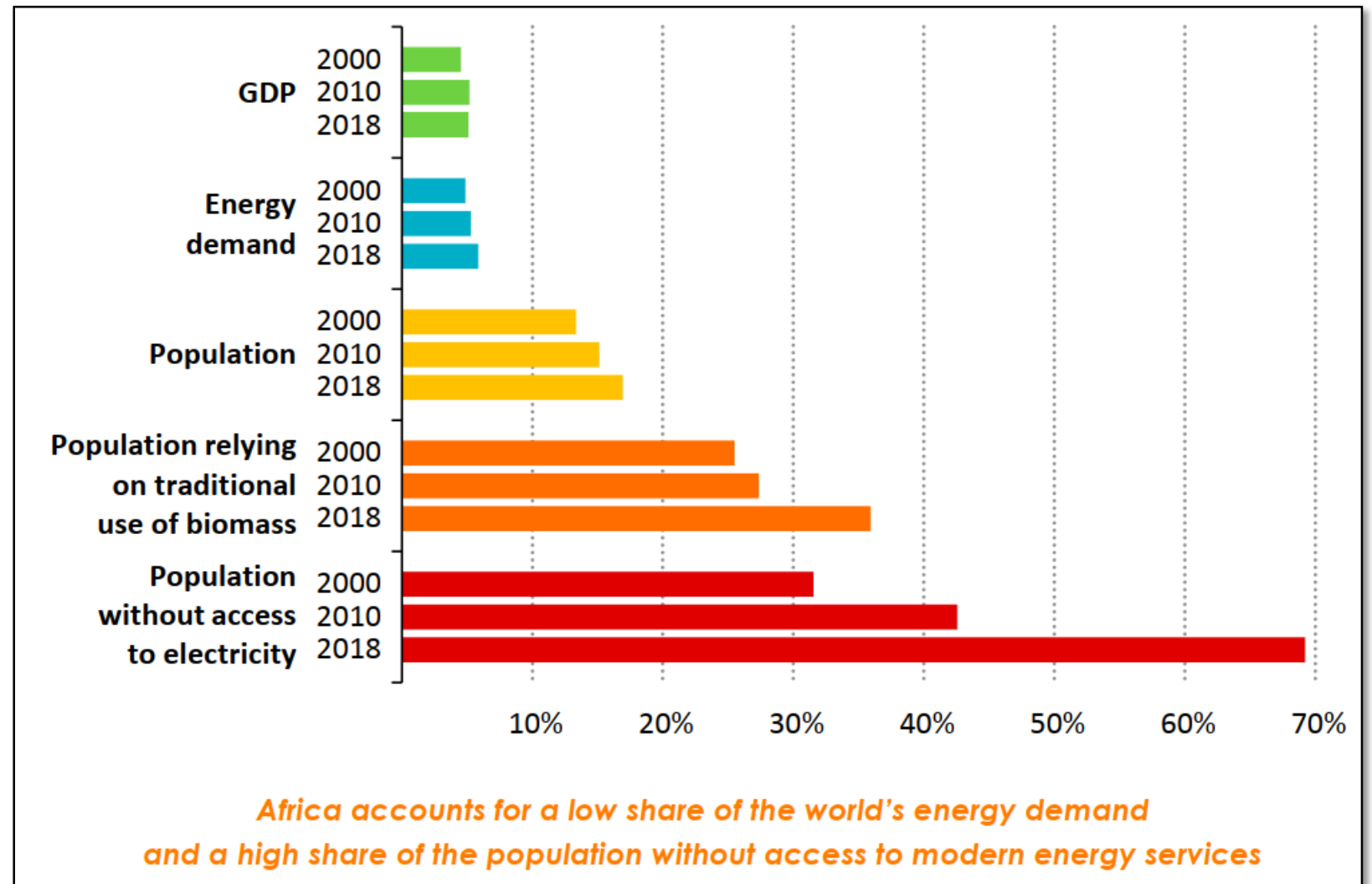
Appliances by load level and associated capacity tiers

Load level		Indicative electric appliances	Capacity tier typically needed to power the load
Very low load (3–49 W)		Incandescent light bulb, fluorescent tube, compact fluorescent light (CFL) bulb, LED light bulb, Torch/flashlight/lantern, Radio/CD Players/sound system, Smartphone (internet phone) charger, Regular mobile phone charger	TIER 1
Low load (50–199 W)		Television B/W, computer, fan, flat color TV, regular color TV, VCD/DVD	TIER 2
Medium load (200–799 W)		Indoor air cooler, refrigerator, electric water pump, electric food processor/blender, rice cooker, freezer, electric sewing machine, electric hot water pot/kettle	TIER 3
High load (800–1,999 W)		Washing machine, electric iron, microwave oven, hair dryer	TIER 4
Very high load (2,000 W or more)		Air conditioner (AC), space heater, electric water heater, solar based water heater	TIER 5



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Africa's share of selected global indicators



Source: IEA 2019: Africa Energy Outlook



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State of energy access in Africa

- In Africa, about 565 million people still lack access to electricity while an estimated 900 million people do not have access to clean cooking solutions (2018 data reported in 2020)
- 70% (548 million people) of global population without electricity access are from sub-Saharan Africa. (2018 data reported in 2020)
- About 85% of the sub-Saharan African population lacks access to clean cooking (2018 data reported in 2020)



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Access to Electricity

Definition:

- Access to electricity refers to the availability of electricity in areas not reached by the grid. In this case, there are options for providing electricity by a decentralised or stand-alone power source (petrol or diesel generator), or a renewable energy device (solar PV, wind turbine or biomass gasifier). (Source: JRC guidebook, 2018)
- Electricity access refers to the percentage of people in a given area that have relatively simple, stable access to electricity (IEA).

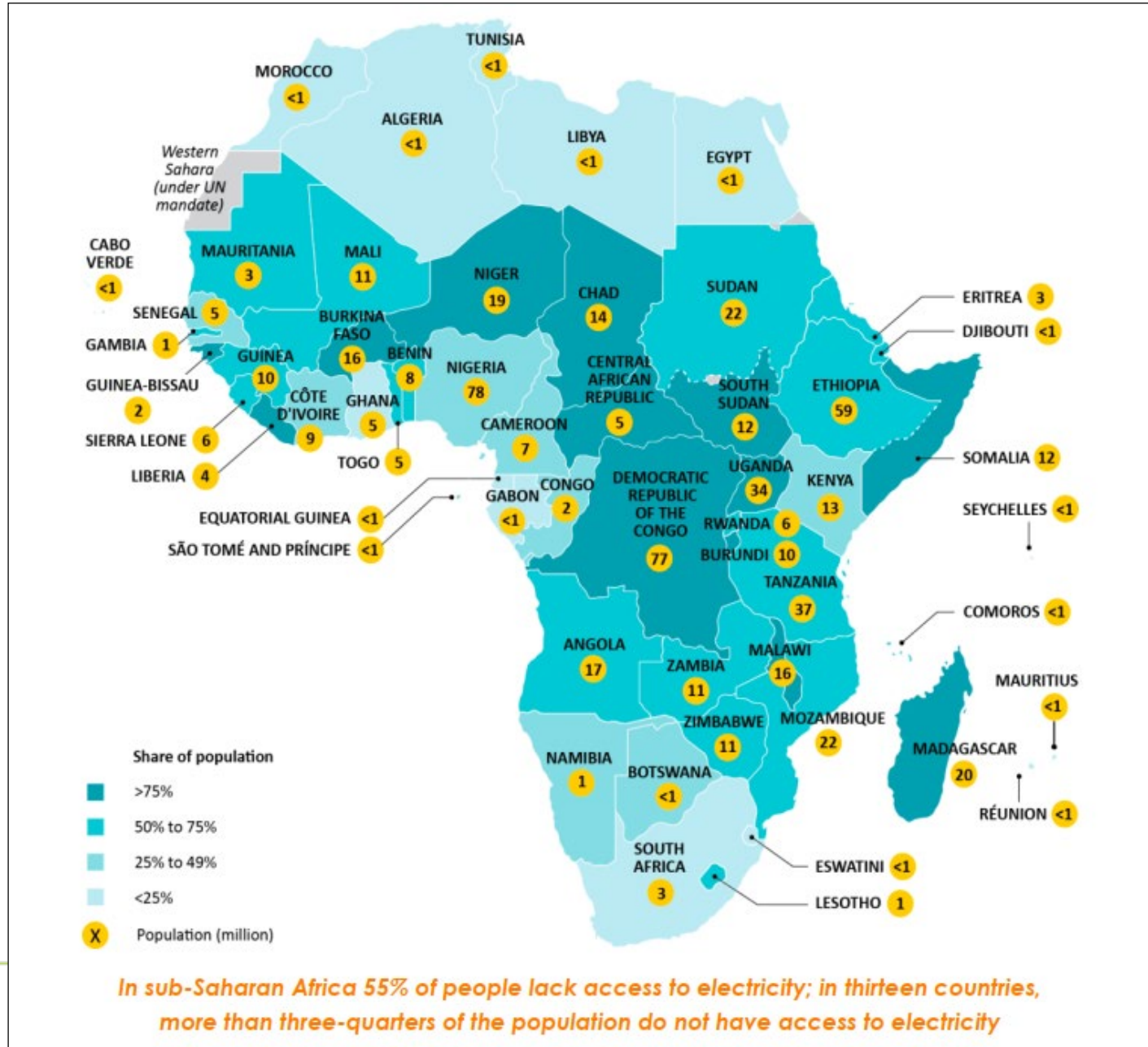


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Population without access to electricity by country in Africa, 2018



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Source: IEA 2019: Africa Energy Outlook



Key benefits of increased electricity access in Africa

- Cold storage powered by renewable energy supply, for example, could help reduce post-harvest losses, which are estimated at between 20% and 50% of food produced in sub-Saharan Africa.
- Electricity can also play an important role in improving agricultural productivity through irrigation, as several successful examples of stand-alone solar water pumps show, provided that policy makers also tackle wasteful irrigation practices



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Impacts of electricity access deficits in Africa

- The absence of electricity access, or intermittent access deeply impacts service delivery:
- In 2016 in sub-Saharan Africa, around half of lower secondary schools and 57% of upper secondary schools had no access to electricity (UNICEF Institute for Statistics, 2019).
- In 27 sub-Saharan African countries, close to 60% of health centre facilities have no access to reliable electricity



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Access to Clean cooking

Definition:

Access to clean cooking facilities means “access to (and primary use of) modern fuels and technologies, including natural gas, liquefied petroleum gas (LPG), electricity and biogas, or improved biomass cook-stoves (ICS), as opposed to the basic biomass cook-stoves and three-stone fires”. (JRC guidebook, 2018)

Cook-stoves are commonly called “**improved**” if they are more efficient, emit less emissions or are safer than the traditional **cook stoves** or three-stone-fires.

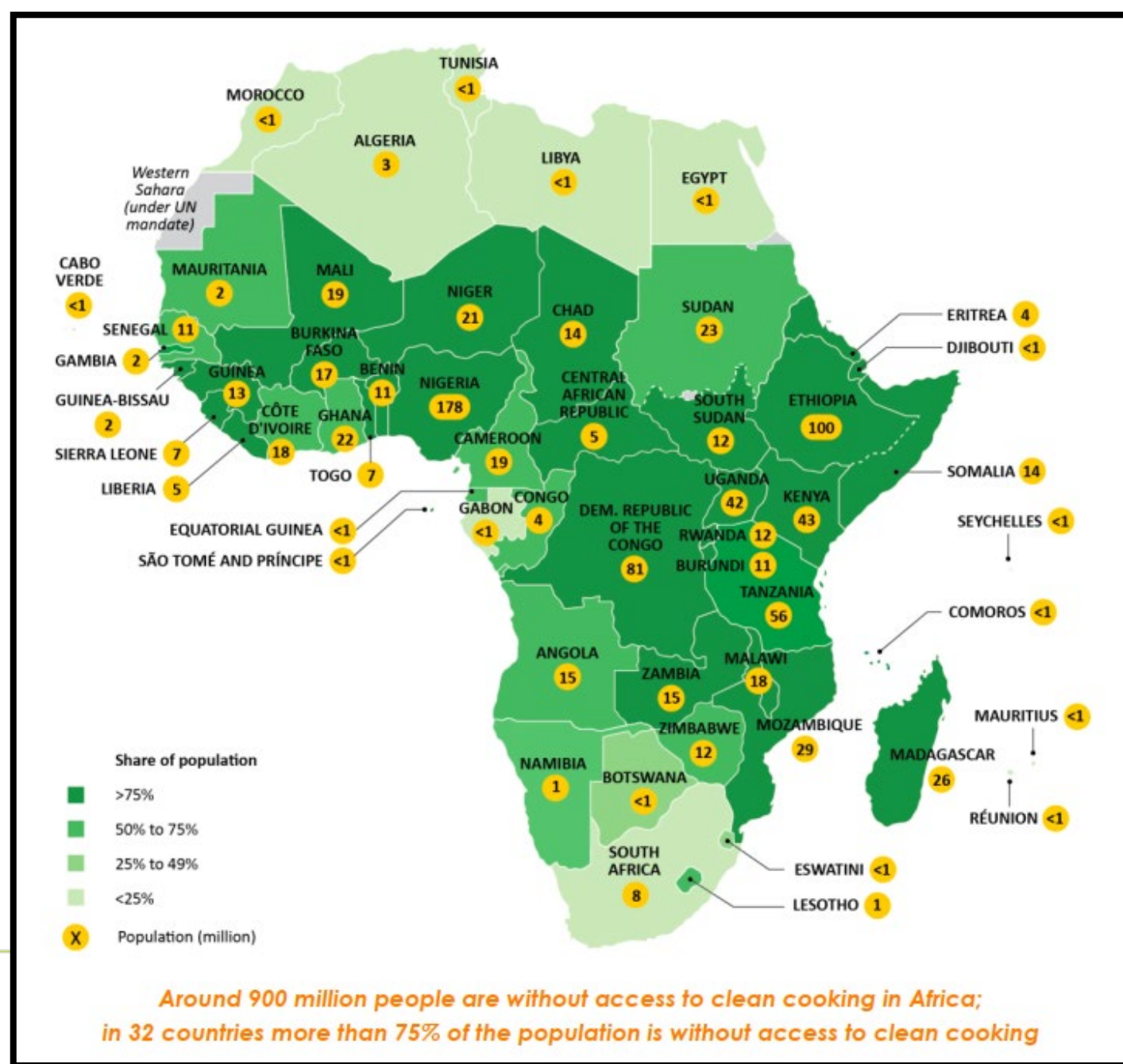


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Population without access to clean cooking in Africa, 2018



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Source: IEA 2019: Africa Energy Outlook



Impacts of clean cooking access deficits in Africa

- About 500 000 premature deaths per year are related to lack of access to clean cooking facilities, with women and children the worst affected.
- Lack of access to clean fuels contributes significantly to women's workloads, and poses a barrier to the economic advancement of women.
- Increasing forest degradation and deforestation as forest cover in SSA is declining at 3%, almost double the rate in other developing regions



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Access to Electricity:

Indicators as per the JRC Guidebook

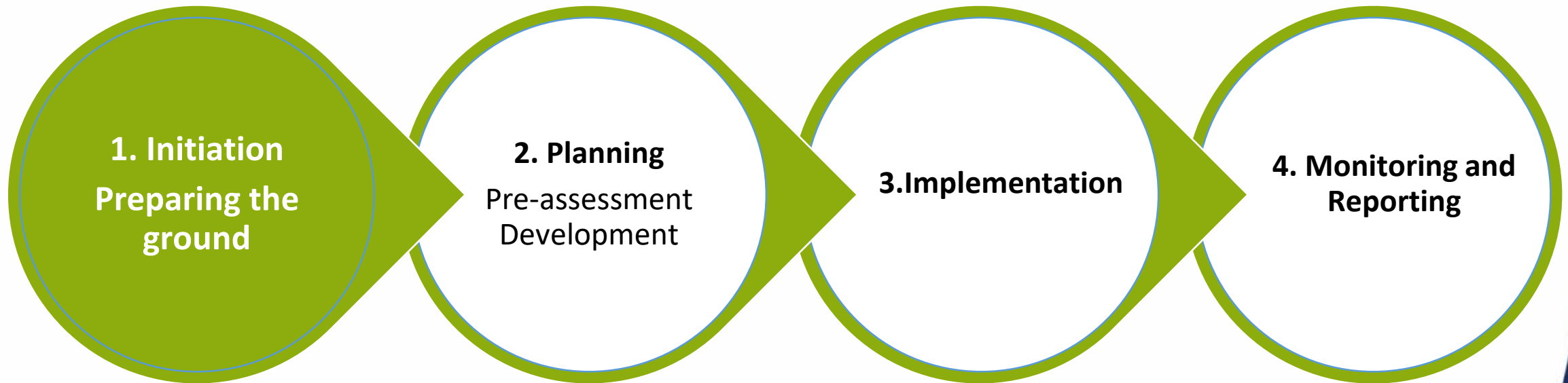
Key Attributes	Key Indicators
Overall	• % of population or households having access to electricity (grid/off-grid)
Security	• Number of hours per day of available electricity • Average number of electricity interruptions per day • Number of days without electricity per year
Sustainability	• % of electricity from REs • Number of mini-grids and stand-alone systems • Laws and regulations in place for mini-grids and stand-alone systems?
Affordability	• % of population able to pay for electricity or willingness to pay • % of expenditure of public buildings for electricity • Financial and regulatory incentives for renewable energy in place?

Access to clean cooking:

Indicators as per the Guidebook

Key Attributes	Key Indicators
Overall	• % of population/households with clean cooking access
Security	• % of population/households relying on the traditional use of biomass for cooking • % of population/household relying on LPG or other sources • Availability of resources: time and distance to gather fuel wood?
Sustainability	• Number of improved cook-stoves used • Sustainable charcoal production? • Awareness and/or education programs in place?
Affordability	• Financial and regulatory incentives or subsidy mechanisms in place? • % of population able to pay (or willingness to pay) for transition to clean cooking

PHASES OF DEVELOPING THE ACCESS TO ENERGY PILLAR OF THE SEACAP





PHASE 1: INITIATION

Phase 1.1: Pre-initiation

1. Identification of city contact point

Entails the identification of experts, local authorities and organizations in the energy sector of the city which may include:

- Ministry in charge of energy
- Utility suppliers
- NGOs working on energy access initiatives in the city

2. Designation of governance

Mapping out the team that will be responsible for the various phases of developing a sustainable energy access for the city



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PHASE 1: INITIATION

Phase 1.2: Initiation

- Once a team and focal point has been identified, the next an inception meeting to introduce the project to all relevant city departments is necessary. A work plan, roles and responsibilities can be discussed in this meeting
- It is also essential to set up a project advisory committee with stakeholders from the national government. A terms of reference might have to be signed by each stakeholder.



PHASE 2: PLANNING



PHASE 3: IMPLEMENTATION

Key facts about the
implementation phase

- The implementation phase involves physically implementing the Access to energy actions identified
- This phase takes the longest time, the most efforts and the largest portion of financial resources;
- It requires the involvement of all stakeholders, including national authorities, academia, private sector, CSOs and communities;
- Communication and sensitization are crucial to ensure citizens' buy-in.



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PHASE 4: MONITORING AND REPORTING

Key facts about the monitoring and reporting phase

- There is an offline Excel-based reporting template developed by the Joint Research Centre which aims at guiding local governments on submitting the contents of their SEACAP;
- Once the SEACAP is submitted, it is required to regularly monitor the implementation of the actions and update the reporting template accordingly. This will ensure continuous improvement of the SEACAP over time;



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PHASE 4: MONITORING & REPORTING

Reporting element	Year 0	Year 1	Year 2	Year 3	Year 4	Year 5
Access to energy assessment			X			
Access to energy targets			X			
Access to energy action plans				X		
Progress report						X

X*: Progress report should be submitted every 2 years after submitting the SEACAP

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The next chapter is: 3.2: Developing the Access to energy assessment of the SEACAP



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Published by:

The Covenant of Mayors in Sub-Saharan Africa (CoM SSA)
c/o Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ)

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Publication date: November 2020

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CoM SSA programme is jointly implemented by:



CoM SSA programme is co-funded by:



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