



# Powering Healthcare

Setting the Scene

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About SEforALL



SDG7



Powering Healthcare







An **international organization** working with leaders in government, the private sector, philanthropy and civil society to **drive faster action** toward achievement of...



**Sustainable Development Goal 7 (SDG7)** - universal energy access, renewables and energy efficiency by 2030, and

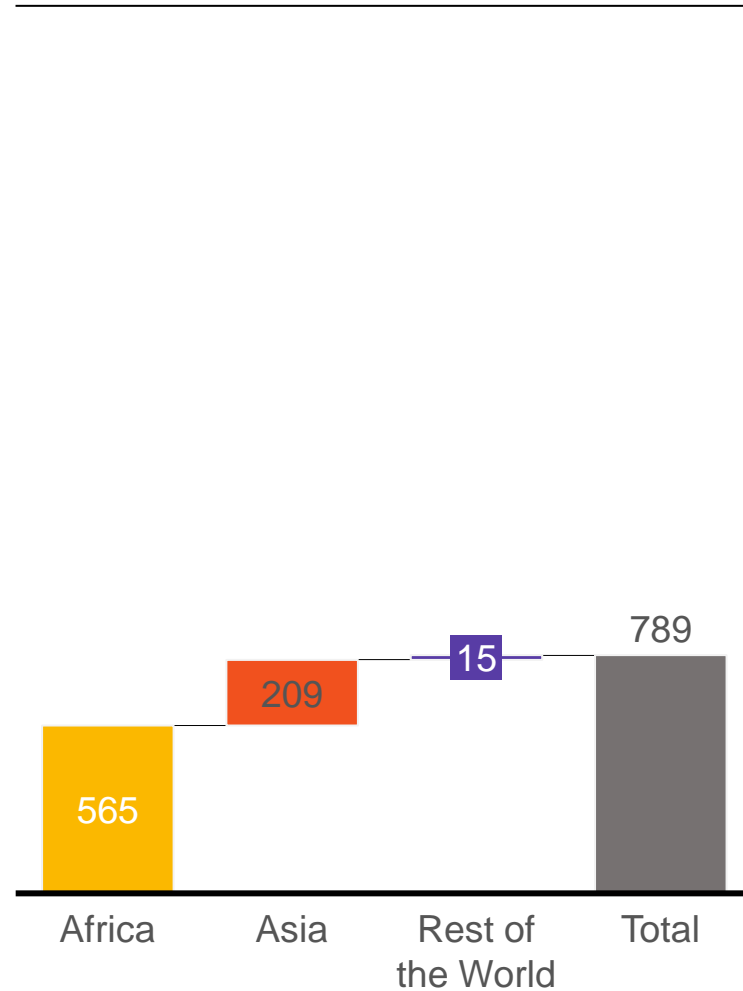


**The Paris Agreement** - reducing greenhouse gas emissions to limit climate warming to well below 2° Celsius (and striving for 1.5° Celsius)

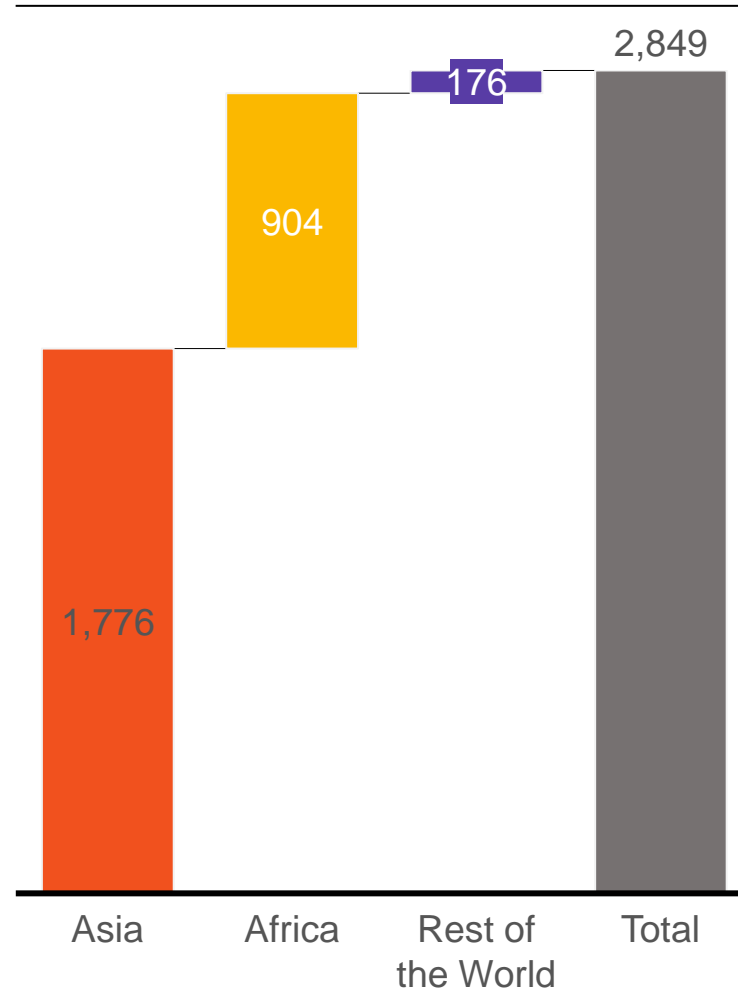
# There are ~789 million people without electricity access; ~2.8 billion people without access to clean cooking; and ~1 billion at high risk due to lack of access to cooling



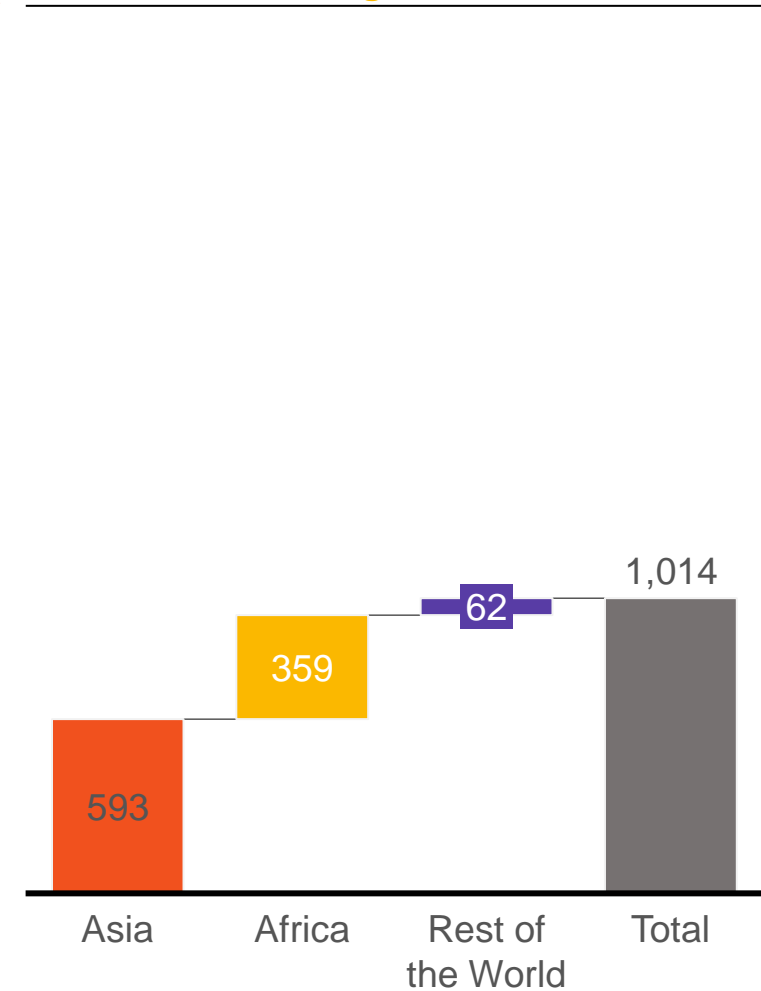
Number of unelectrified people, millions, 2018



Number of people without access to clean fuels and technologies for cooking, millions, 2018



Number of people at high risk due to lack of access to cooling, millions, 2019



# Powering Healthcare: COVID-19 response

- A substantial portion of the population will need to be vaccinated at speed for a country to form herd immunity
- Even at 20 C, many service points, such as hospitals, clinics and pharmacies, will not have the freezers required for storage.
- Upfront costs of equipment and installation, lack of expertise to maintain these systems, perceived technology risks, and poor stakeholder incentives to pursue efficiency make it hard for developing countries to invest in cold chain equipment.

Vaccine developer/manufacturer	Vaccine platform	Number of doses	Timing of doses	Phase	Anticipated temperature requirement for shipment and long-term storage	Anticipated duration of storage possible at 2-8°C
BioNTech/Fosun Pharma/Pfizer	RNA		0, 28 days		-70°C	5 days*
Moderna/NIAID	RNA		0, 28 days		-20 °C	10 days**
University of Oxford/AstraZeneca	Non-replicating viral vector		-		2-8 °C	N/A
CanSino Biological Inc./Beijing Institute of Biotechnology	Non-replicating viral vector		-		2-8 °C	N/A
Gamaleya Research Institute	Non-replicating viral vector		0, 21 days		2-8 °C	N/A
Johnson & Johnson/Janssen	Non-replicating viral vector		0, 56 days		2-8 °C	N/A
Beijing Institute of Biological Products/Sinopharm	Inactivated		0, 21 days		2-8 °C	N/A
Sinovac	Inactivated		0, 14 days		2-8 °C	N/A
Wuhan Institute of Biological Products/Sinopharm	Inactivated		0, 21 days		2-8 °C	N/A
Novavax	Protein Subunit		0, 21 days		2-8 °C	N/A



# Powering Healthcare provides an opportunity to advance all three SDG7 targets

**Goal 7:** Ensure access to affordable, reliable, sustainable and modern energy for all

**Target 7.1:** By 2030, ensure universal access to affordable, reliable and modern energy services

**Target 7.2:** By 2030, increase substantially the share of renewable energy in the global energy mix

**Target 7.3:** By 2030, double the global rate of improvement in energy efficiency

- Electrifying health facilities contributes to universal energy access
- Powering Healthcare serves as a good template for electrifying other institutions (e.g. schools)
- Increased deployment of renewable energy solutions, both for off-grid health facilities and for generator-reliant (or weak-grid reliant) facilities
- Spur innovation in the field of energy-efficient medical appliances



# Access to electricity underpins nearly every aspect of a well-functioning health facility, making it vital to delivering quality health care and emergency services...



Credit: UNDP Zambia/Slingshot



Credit: WASH in Health Care Facilities



Credit: UNDP Zimbabwe /Slingshot



Credit: UNDP Zimbabwe /Slingshot



Credit: UN Foundation



Credit: UN Foundation



Credit: Jake Lyell



Credit: MSF-East Africa



Credit: UN Foundation



Credit: Forbes India



Credit: UNDP Zambia/Slingshot



Credit: UN Foundation

...yet, too often health care looks like this





# The Problem

Data on health facility electrification is sparse, but what data does exist points to serious gaps in access and reliability

**59%**

health facilities in low and middle-income countries lack reliable power

Source: *International Journal of Hygiene and Environmental Health* (2018)

**50%**

primary health centers in India lack power or reliable power

Source: *Council on Energy, Environment and Water* (2017)

**75%**

health facilities in Sub-Saharan Africa lack reliable power  
(11 country sample)

Source: *Global Health Science Practice* (2013)

**70%**

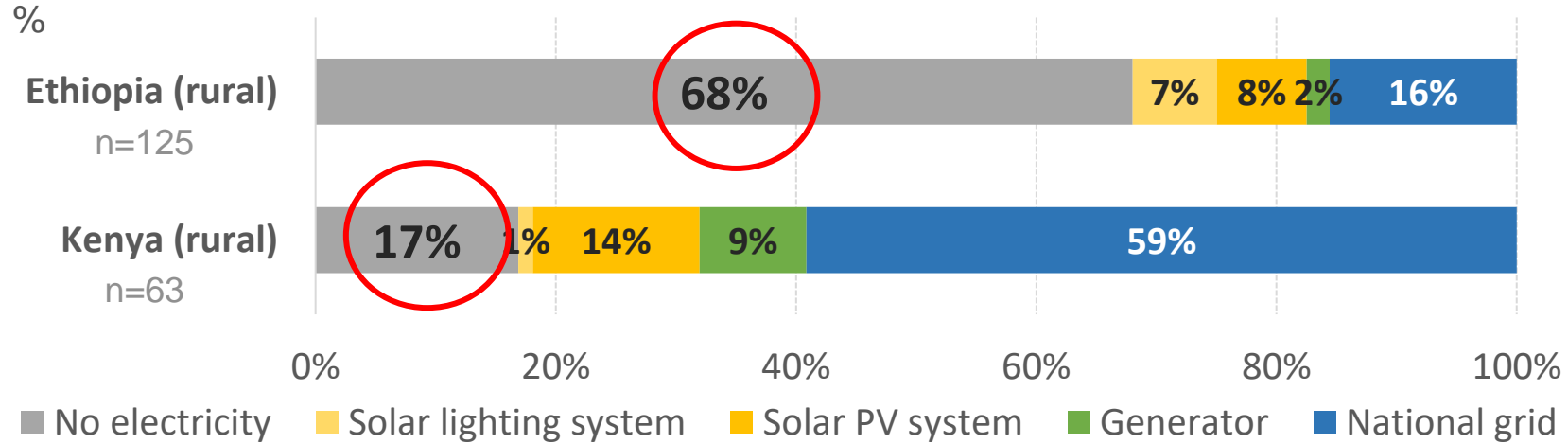
equipment breaks down, with voltage surges a leading cause

Source: *Annual Review of Biomedical Engineering* (2007)

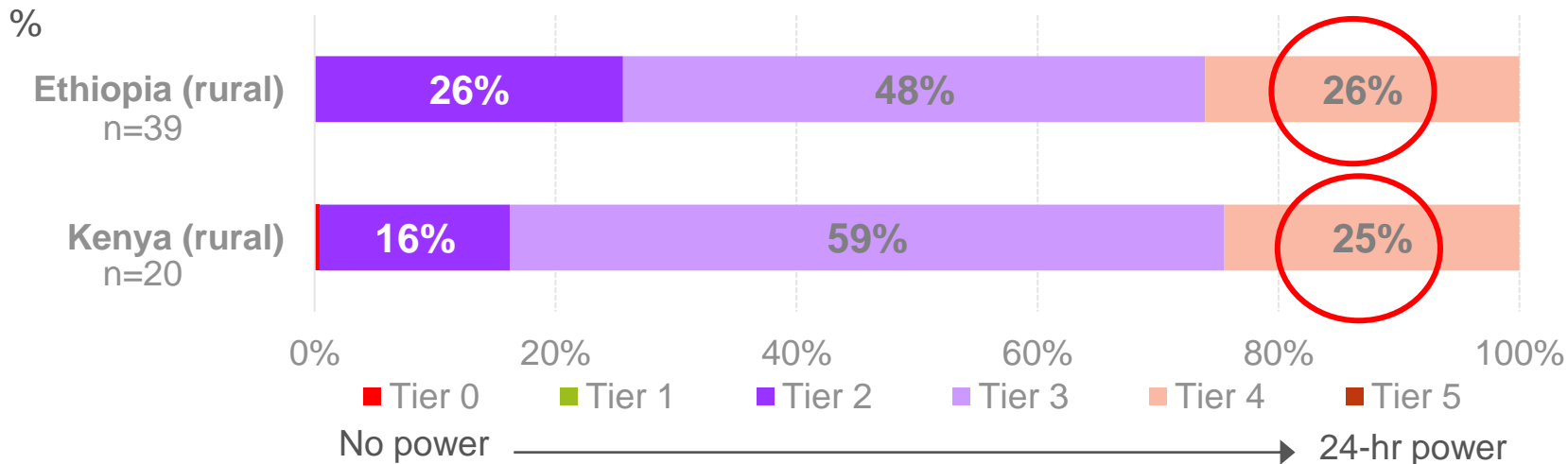


# A closer look shows disparities across countries and the fact that the grid power isn't the 'silver bullet'

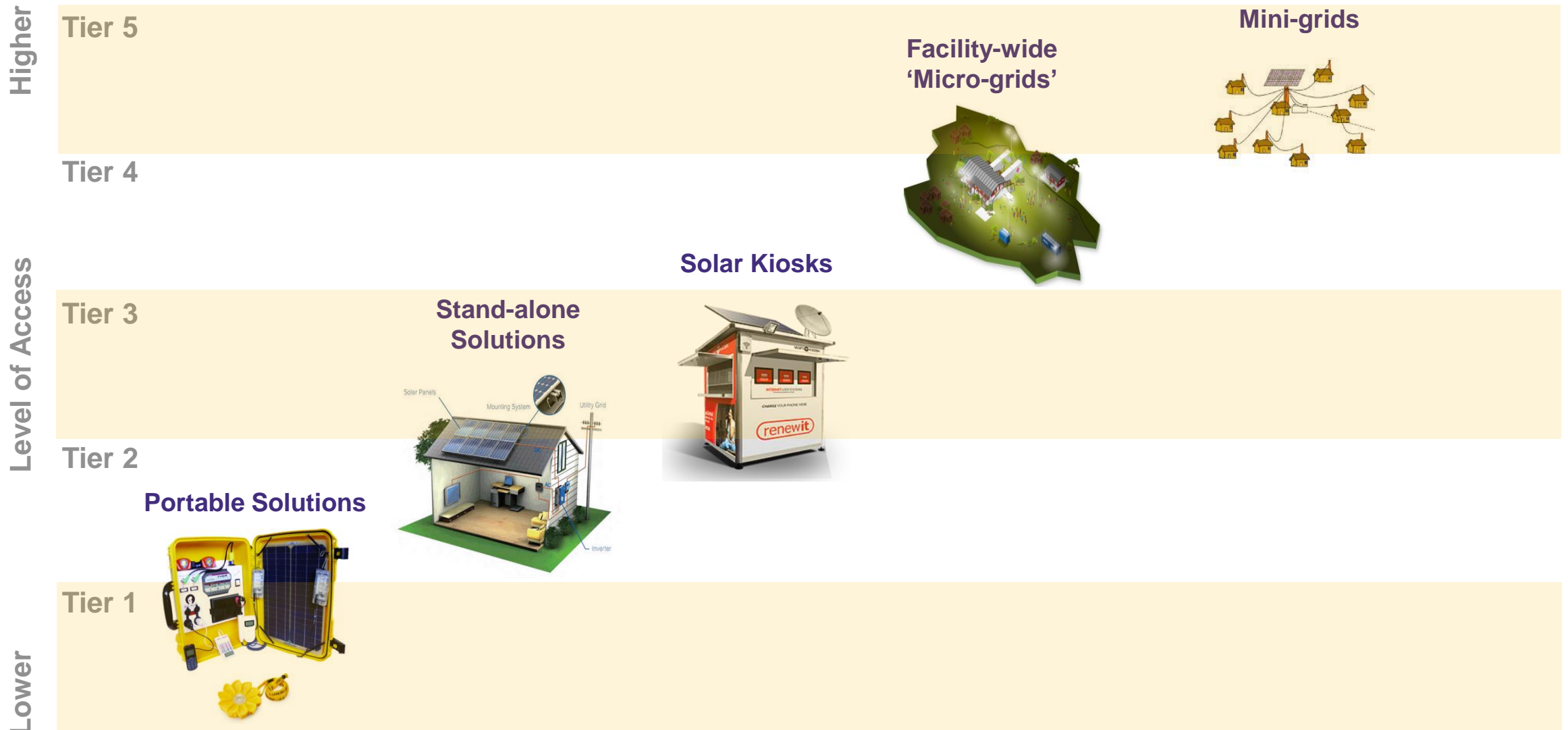
## Source of electricity for rural health facilities



## MTF Tier distribution among grid-connected rural health facilities



# A range of distributed renewable energy solutions exist to power health facilities





# Key barriers to rapid deployment of energy solutions to health facilities



## DATA



- Where are the health facilities located?
- Which facilities are priority COVID-19 facilities?



## ENERGY DEMAND



- Which electricity-dependent (medical) appliances are needed and recommended?
- Which appliances are currently available?



## SYSTEM DESIGN



- How much power is needed, at what point of the day?
- Which energy technologies are appropriate?



## FINANCING



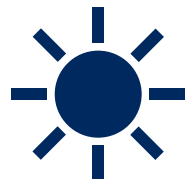
- How much CapEx and OpEx is required to address the power gap in the health sector?
- How quickly can funds be disbursed?



## SECTOR CAPACITY



- What is the current capacity of the energy access sector to respond?
- How can public/private actors coordinate and collaborate?



## SUSTAINABILITY



- What is the most appropriate delivery/business model to deploy energy solutions rapidly, at scale, and in a sustainable way?

## DATA & MAPPING



- Intervention Heatmap: mapping ongoing & planned interventions
- Impact data factsheet
- Global Assessment of Health Facility Electrification (led by WHO)

## ADVOCACY & COMMS



- Resource hub (website)
- Global advocacy campaigns

## COUNTRY ADVISORY



- Technical Assistance to Govt counterparts on:
  - Country-level coordination
  - 'Powering Healthcare roadmaps'
  - COVID-19 vaccine roll-out scenario analysis

# Our Partners

## Funding Partners



## Strategic Partners



**WORLD BANK GROUP**



## Programmatic Partners



**WORLD  
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**SELCO**



## Govt Partners





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