

Tracking Access to Off-grid Renewable Energy

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Overview

- Overview of IRENA
- Off-grid energy data collection and challenges
- Trends in off-grid renewable energy
- Improving energy access data

About IRENA

- » IRENA is an intergovernmental organisation that supports countries in their transition to a sustainable energy future
- » Established in 2011
- » Membership: 160 (+23 in accession)
- » Headquarters in Masdar City, Abu Dhabi, UAE
- » IRENA Innovation and Technology Centre – Bonn, Germany
- » Permanent Observer to the United Nations – New York



IRENA Statistics

- Installed electricity **capacity** (MW), **generation** (GWh) and **balances** from renewables
- IRENA's previous off-grid figures:
 - National data and estimates, where available
 - Estimates from solar panel imports (e.g. 10W/kg)
- In 2017, we started a project of data collection for off-grid renewables
 - Scope: Off-grid PV, hydro, biogas in developing countries
 - Purpose: Expand/refine our data for “known” off-grid plants



Off-grid energy data challenges

- Rapidly evolving
- Many autoproducers, including households and public services
- Large numbers of small plants

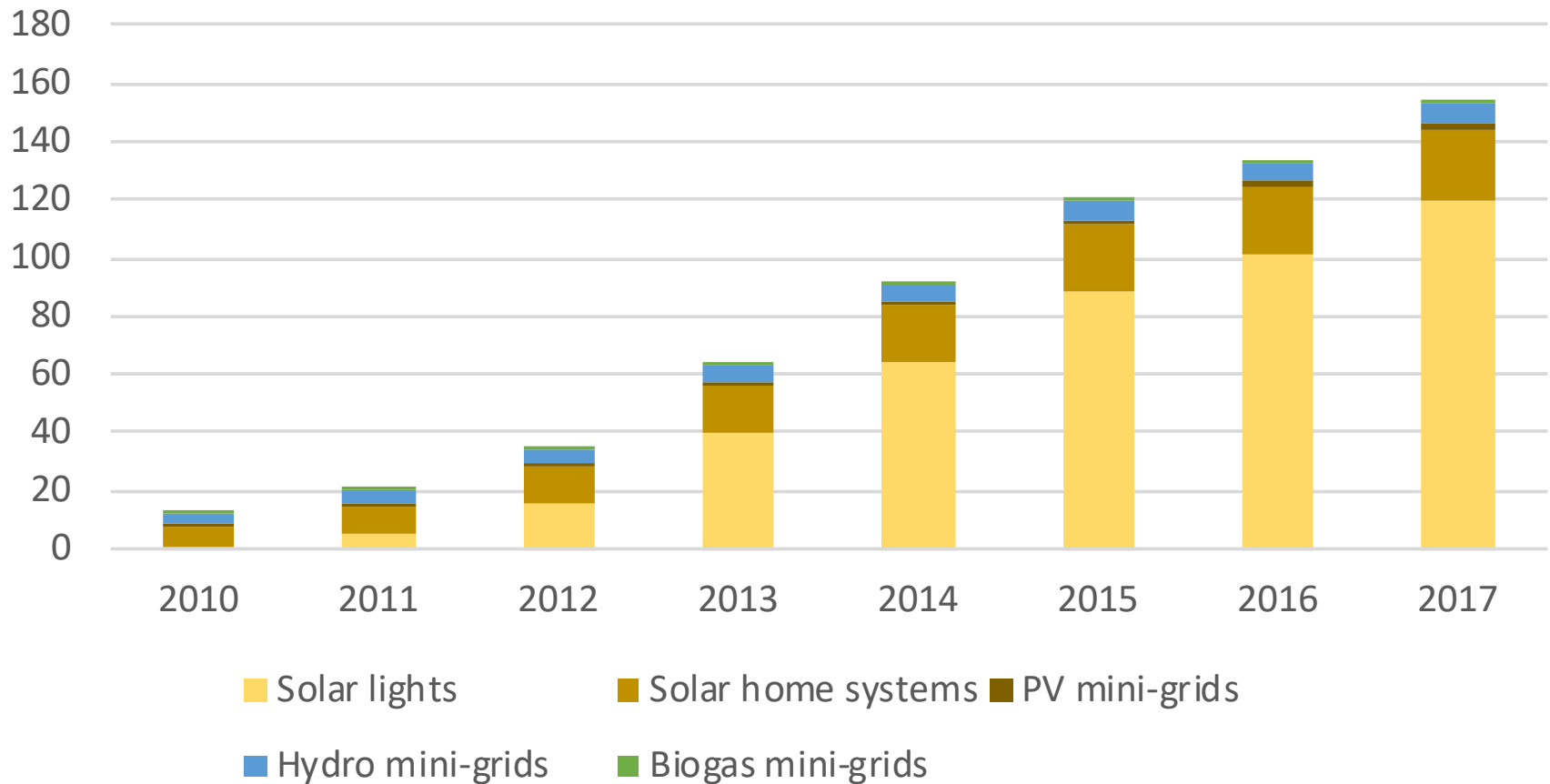


“Bottom-up” data collection

- Multiple data sources:
 - National databases, questionnaires
 - Trade and sales data
 - Project databases, supplier websites
- Technologies:
 - Mini-grids
 - Home systems (including lights)
 - Various others (non-residential uses)
- Variables (standardised):
 - Number/capacity/generation
 - End-uses, timing
 - Number of beneficiaries

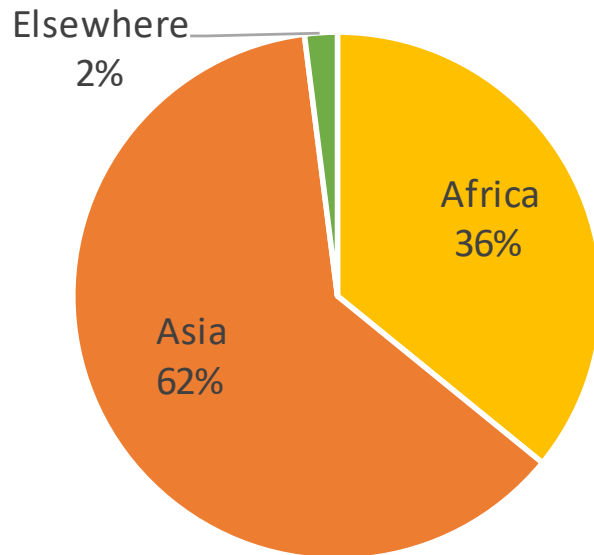


Population served (in millions)

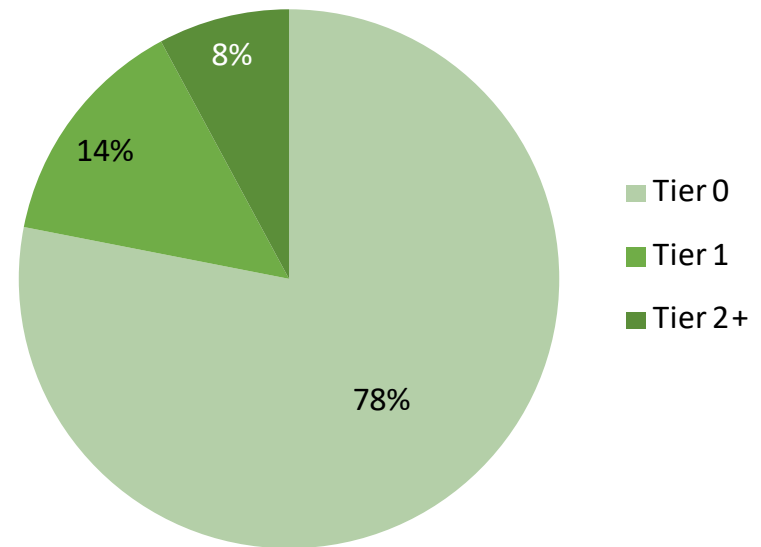


Results

Geographical distribution



Level of supply



TIER 0	TIER 1	TIER 2	TIER 3	TIER 4	TIER 5
None	Task lighting AND phone charging (or radio)	General lighting AND television AND fan (if needed)	Tier 2 AND any low-power appliances	Tier 3 AND any medium- power appliances	Tier 4 AND any high-power appliances

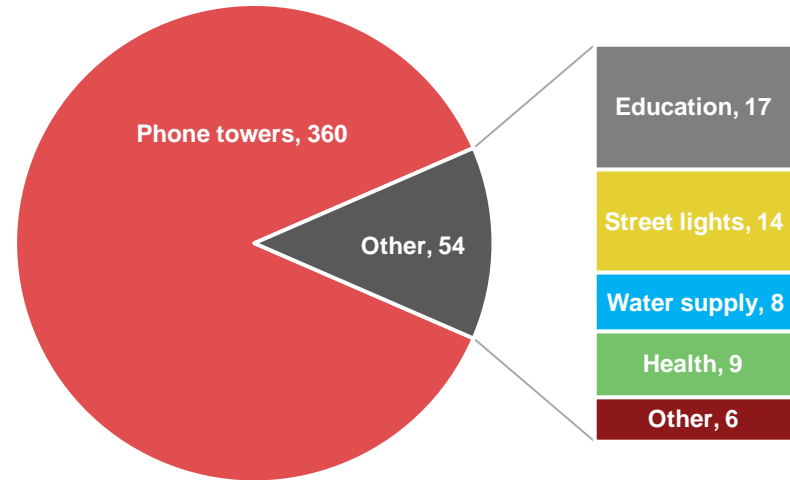
Impacting other SDGs



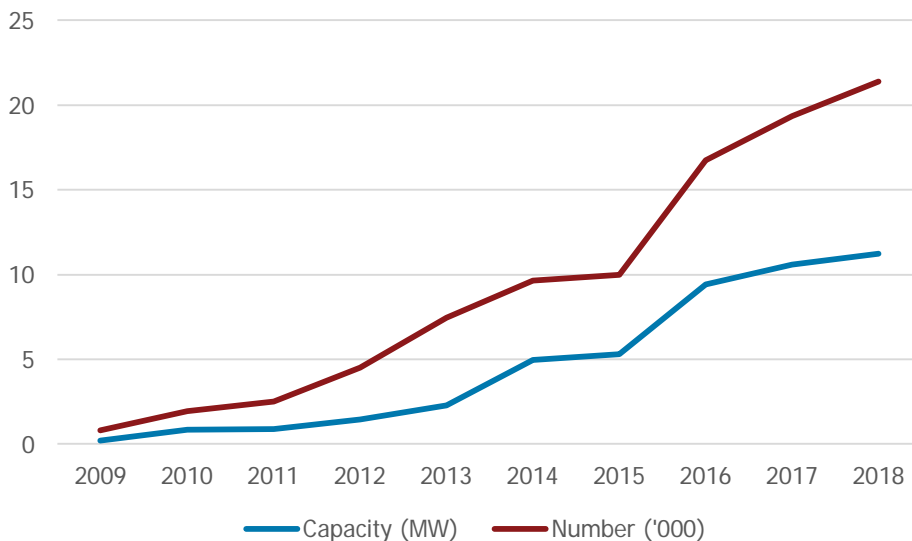
Impacting other SDGs

Solar PV is becoming the power source of choice for pumping, phone towers, street lighting, rural clinics (including fridges) and other remote locations

Commercial and public uses of solar PV (total = 414 MW)



Growth in the use of solar PV in health care



Solar PV improves the delivery of health care for millions of people and varies in scale from small portable devices to major plants powering small hospitals

Improving energy access data

- Talk to your National Statistics Office!
 - Piggyback off existing recurrent surveys
 - Systematise the process

- Increase the recognition, visibility and political will for measuring off-grid energy

- Explore possibilities for measurement (training, pilot surveys, manuals)

SECTION K		
Solar Energy Usage		
K1. Do you own a Solar Photovoltaic (PV) system(s)? 1 Yes 2 No		<input type="text"/>
<i>If coded 2, skip to K8</i>		
K2. Did you ever receive information on how the Solar PV works or can be used? 1 Yes 2 No		<input type="text"/>
K3. What kind of solar PV system do you have? <i>Multiple response</i>		
1. Installed solar home system	<input type="text"/>	2. Pre-wired solar system
3. Panel with a battery	<input type="text"/>	4. Mini grid
5. Solar for water pumping	<input type="text"/>	6. Other (specify).....
K4. Give the number of solar panels owned by the household and their capacities. <i>If coded 2 for all in column 3, skip to K6.</i>		
<i>Note: For panels with the same wattage, write the number of such panels and capacity of ONLY one solar panel. Panels should be functional in the past 12 months</i>		
Number of panels (a)	Capacity of panel (watts) (b)	Functionality 1 Yes 2 No (c)
K5a. What was the cost of the whole system? Including cost of installation if applicable M.....		

Thank you



Renewable energy statistics available at:
www.irena.org/statistics