A Sunrise on Two Horizons

Solar Home Systems (SHS) in Eastern Africa

2020 Internship Showcase

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RTI INTERNATIONAL

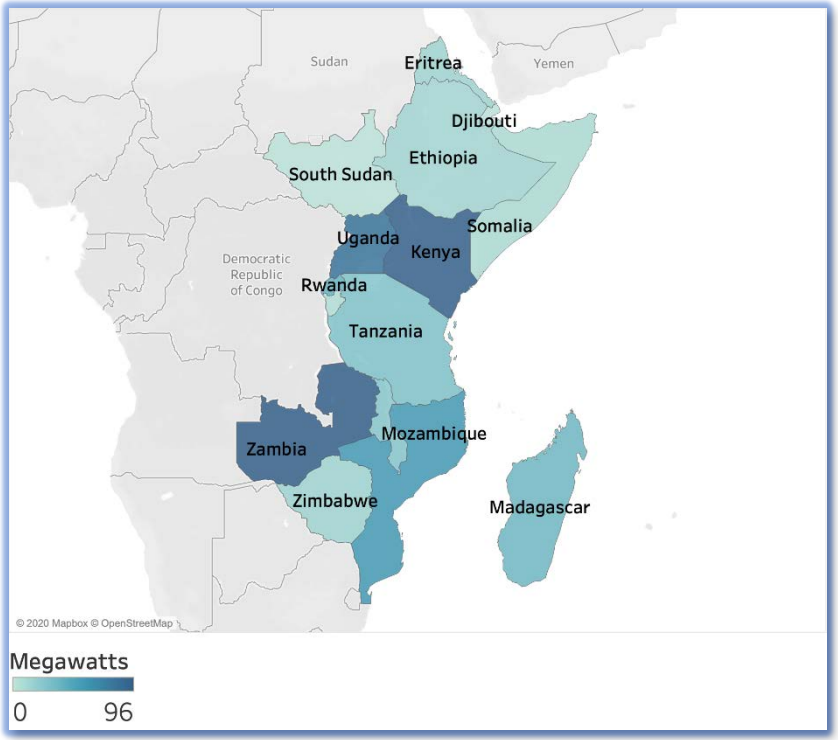
QUESTION:

What drives the growth of national SHS markets in Eastern Africa?

Caption: Solar photovoltaic (PV) capacity by country, 2019

Main Idea: National markets grow differently despite similar irradiance or sun exposure.

Source: IRENA, 2020.



APPROACH:

Historical analysis of socioeconomic and (geo)political factors

Caption: Rural health clinic in Zambia with PV-powered refrigerator and lights, 1997

Main Idea: Rural PV markets in Eastern Africa began growing steadily in the 1990s.

Source: B. Stafford and National Renewable Energy Laboratory (1997)

CONTEXT:

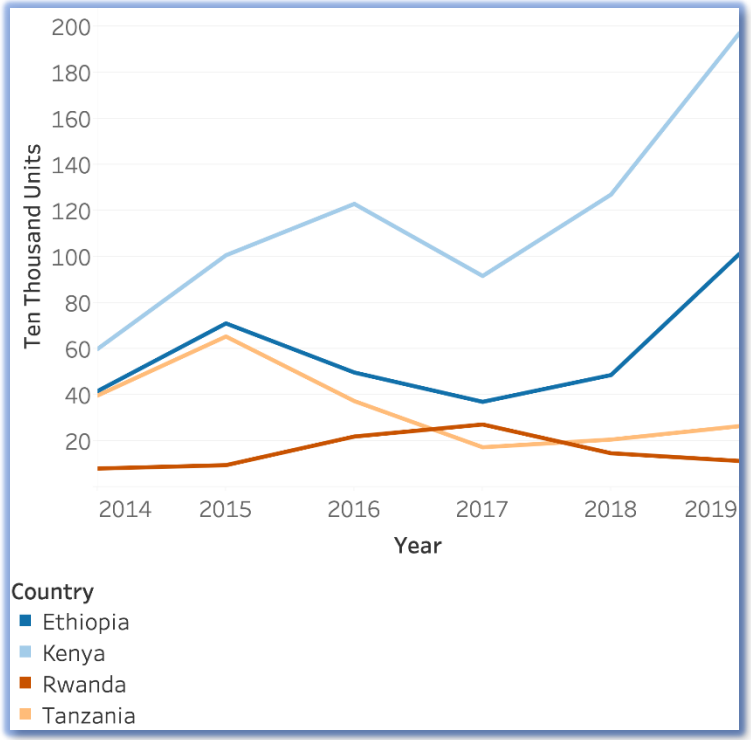
The astronomical cost of electrical grid connection in East Africa

	Ethiopia	Kenya	Rwanda	Tanzania
Rural population (2019)	88.3 m	38.1 m	10.4 m	38.0 m
Connection Charge as % of Family Income (2013)	50.4	118.8	134.0	144.1

Source: Golumbeanu and Barnes (2013)

OBSERVATIONS:

Diverging dissemination trajectories in sales volumes data

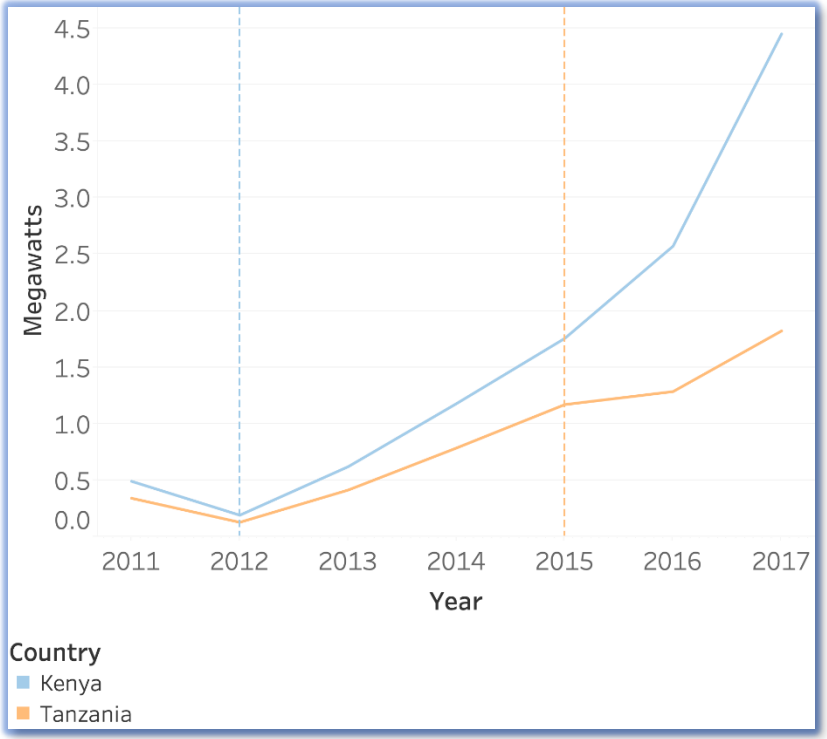


Units here are defined as systems that include

- A solar panel
- A battery
- At least one light point

PRELIMINARY CONCLUSIONS:

Energy policy serves as a main driver of national SHS capacity



2012:

- Feed-in-tariff policy renewed in Kenya

2015:

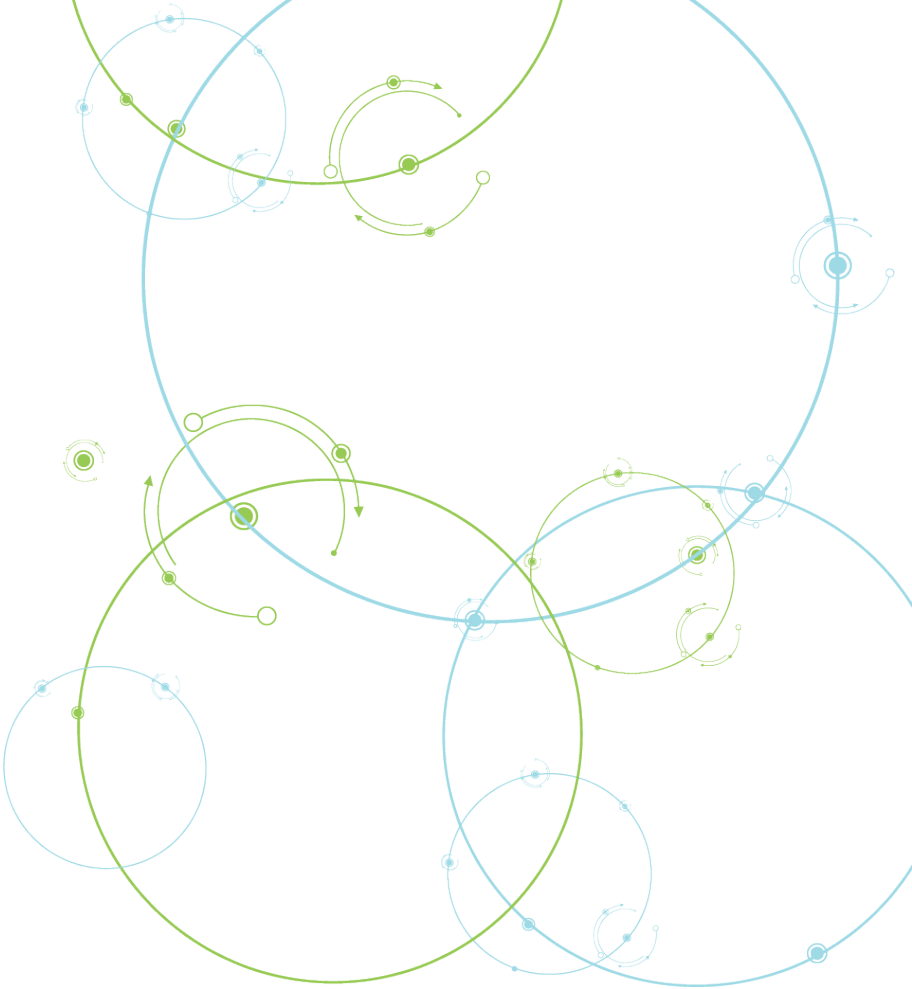
- National Energy Policy published in Tanzania

ACKNOWLEDGMENTS

Amer Barghouth, Senior Research Energy Specialist

Justin Larson, Energy Research Economist

Gordon Shaw, Energy Specialist



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Thank you

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