



ENERGY ACCESS EXPLORER

A Digital Public Good to Deliver Climate-friendly
and Viable Energy Transitions for All



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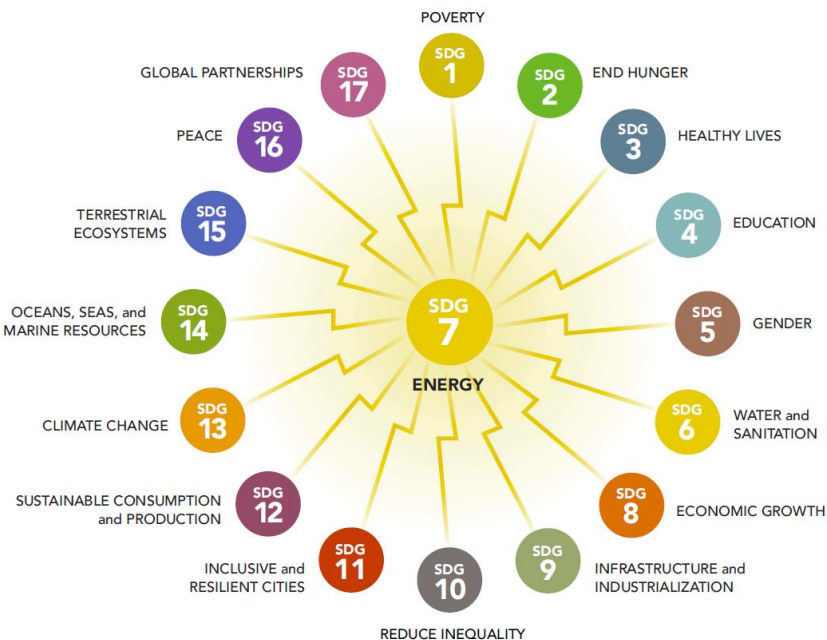
WORLD
RESOURCES
INSTITUTE

AGENDA

1. Introduction to the Energy Access Explorer
2. EAE tool demonstration
3. Guided sample analysis
4. Group scenario exercises
5. Group Presentations

ENERGY ACCESS AND SUSTAINABLE DEVELOPMENT OUTCOMES

Energy is interconnected with 125 (74%) out of 169 SDG targets*



Without access to electricity



With access to electricity



IMPORTANCE OF **INTEGRATED** ENERGY PLANNING

Integrated Planning is essential for:

- matching supply with the growing demand;
- incorporating decentralized and cost-effective renewable energy production into a region's energy mix.



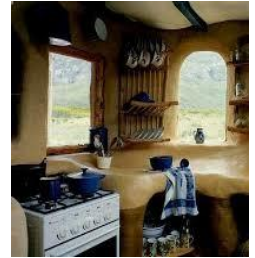
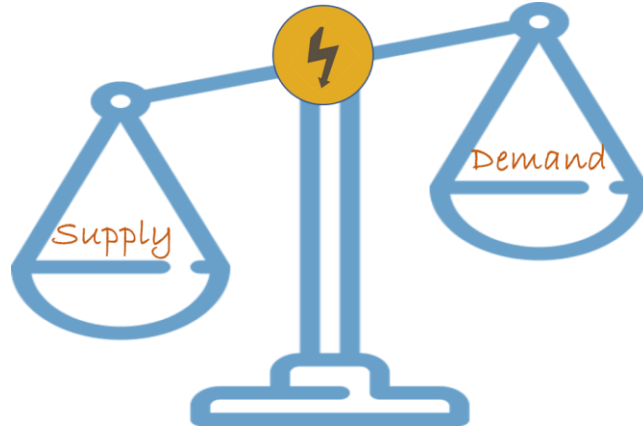
IMPORTANCE OF **INCLUSIVE** ENERGY PLANNING

Inclusive Planning is essential for:

- Accounting for varying, cross-sectoral stakeholder perspectives
- Assessing energy needs from the bottom up
- Linking energy systems at different geographic levels



TREAT DEMAND AND SUPPLY AS EQUAL



REDUCE RELIANCE ON GIS AND PROGRAMMING EXPERTISE FOR DATA USERS



DEPLOY AN OPEN-SOURCE DYNAMIC INFORMATION SYSTEM
FOR DATA PROVIDERS



open source
initiative[®]

Energy Access Explorer

An interactive online platform mapping the state of energy access in underserved areas across Africa and Asia.

[Explore Data](#)

ENERGY ACCESS EXPLORER

OPEN ONLINE INTERACTIVE CUSTOMIZABLE

Spatial Data Infrastructure

Data from different sources, in different scales and formats:

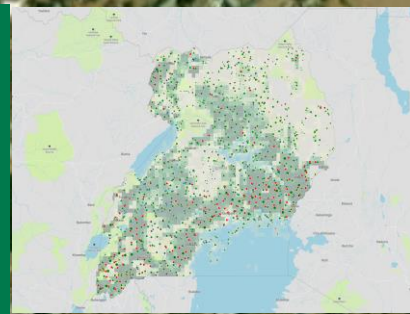
- ✓ Open Census
- ✓ Satellite
- ✓ Global
- ✓ National
- ✓ Sub-national

DEMAND

Demographics

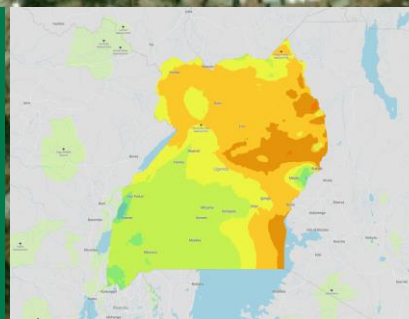


Social & Productive Uses

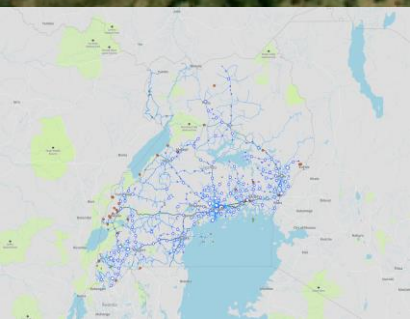


SUPPLY

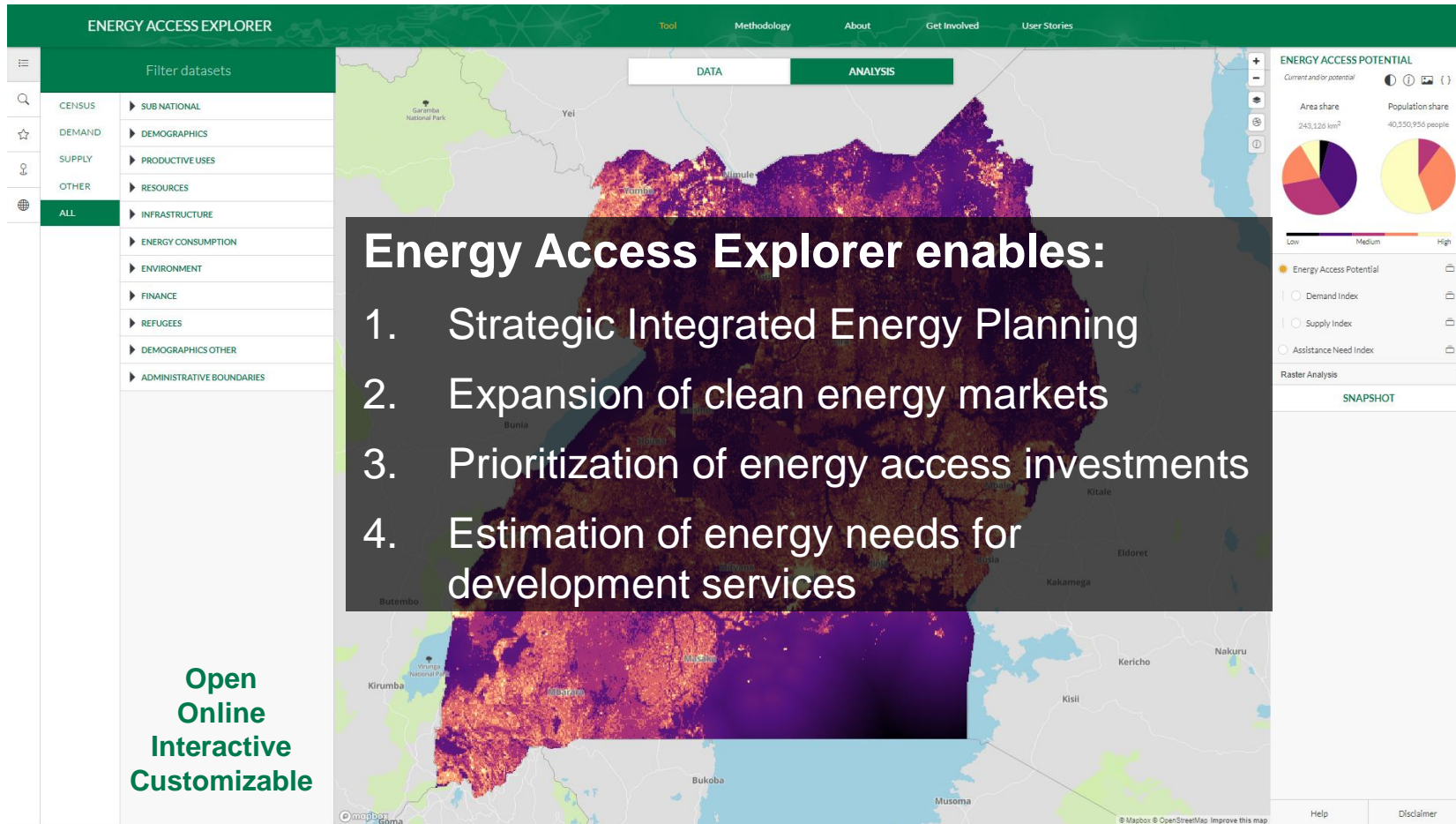
Energy Resources



Infrastructure



EAE USE CASES



Energy Access Explorer enables:

1. Strategic Integrated Energy Planning
2. Expansion of clean energy markets
3. Prioritization of energy access investments
4. Estimation of energy needs for development services

**Open
Online
Interactive
Customizable**

KEY FUNCTIONALITIES OF THE FRONT END OF THE APPLICATION

- Select and visualize geospatial data
- Visualize temporal data to track progress
- Overlay data
- Apply Queries, Filters and Buffers
- Develop custom summary reports and dashboards
- Search for coordinates or Areas of Interest
- High resolution Multi-Criteria Analysis (1 km²)
- List High-priority areas
- Save and download analysis
- View on mobile phone
- View in a Public version – Password protected version – Off-line version

Low hanging fruits

$$\text{Energy Access Potential (EAP)}_j = \frac{w_d * NDI_j + w_s * NSI_j}{w_d + w_s}$$

Areas with potential demand

$$\text{Demand Index (DI)}_j = \frac{\sum_{i=1}^D w_i * NDD_i}{\sum_{i=1}^D w_i}$$

Areas with potential supply

$$\text{Supply Index (SI)}_j = \frac{\sum_{i=1}^S w_i * NSD_i}{\sum_{i=1}^D w_i}$$

Areas where financial assistance is needed

Assistance Need Index

ENERGY ACCESS EXPLORER

EFFECTIVE DATA MANAGEMENT AND GOVERNANCE

Data Management

Data, Metadata, System Customization in one place

ENERGY ACCESS EXPLORER

Geographies

Categories

Users

Kenya - datasets

filter: name, deployments, name_long, category

production staging training test dev

Name	Category	Type	Deployed	Dated	Updated
counties	boundaries	polygons-boundaries	📍	📅	() 2019 2022-11-27
county-assets-computer	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-assets-internet	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-assets-iron-roof	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-assets-mobile	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-assets-radio	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-assets-refrigerator	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-cooking-charcoal	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-cooking-electricity	indicator	polygons-valued	📍	📅	2019 2023-01-10 (Douglas-Rono)
county-cooking-firewood	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-cooking-lpg	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-lighting-candle	indicator	polygons-valued	📍	📅	() 2019 2022-11-27
county-lighting-dry-cell-lantern	indicator	polygons-valued	📍	📅	() 2019 2022-11-27



ENERGY ACCESS EXPLORER

Geographies

Categories

Users

Users

filter: email

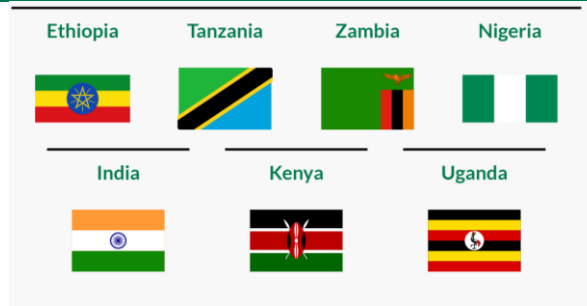
email	role
anrikarung@gmail.com	admin
ndyamuron@gmail.com	admin
mugabibroline@gmail.com	admin
aaraka@creec.or.ug	admin
ndyamuhaki@creec.or.ug	admin
kumbujosh@gmail.com	admin
faizal.mulindwa@umeme.co.ug	admin
jayeny@creec.or.ug	admin
kasolo.nickson@gmail.com	admin
george.okello@umeme.co.ug	admin
oplomiria@gmail.com	admin
mambuya@creec.or.ug	admin
arineltwegodie@gmail.com	admin
aokorio@creec.or.ug	admin
bakubiye@gmail.com	admin

Data Governance

Roles and Responsibilities of partnering institutions/data providers

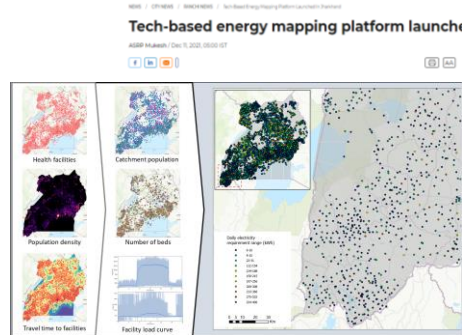
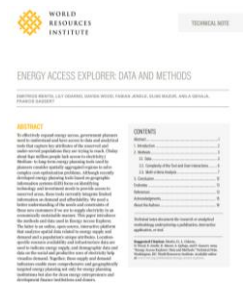
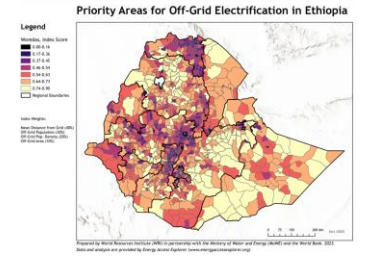
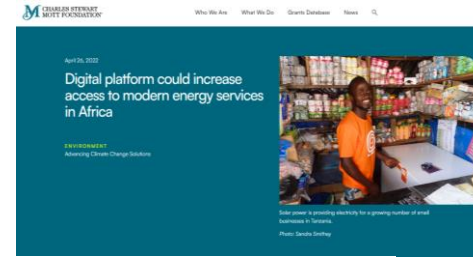
A DATA DRIVEN, INTEGRATED AND INCLUSIVE APPROACH TO PLANNING FOR ACHIEVING UNIVERSAL ACCESS TO ENERGY FOR EQUITABLE DEVELOPMENT

- Covers countries with **32% of the total unserved population globally**
- **Originally prototyped for 3 countries** and is now being developed for **23 geographies**, at both **national and subnational levels**
- Close partnership with **> 200 stakeholders and users.**
- **> 15,000 users**
- **> 10 MUSD** in kind contributions



EAE OUTCOMES

- Powering health care
- Integrated and Inclusive Energy Planning
- Powering Productive Uses of Energy
- Market Prospects for Clean Energy Enterprises
- Investing for Impact
- EAE working groups

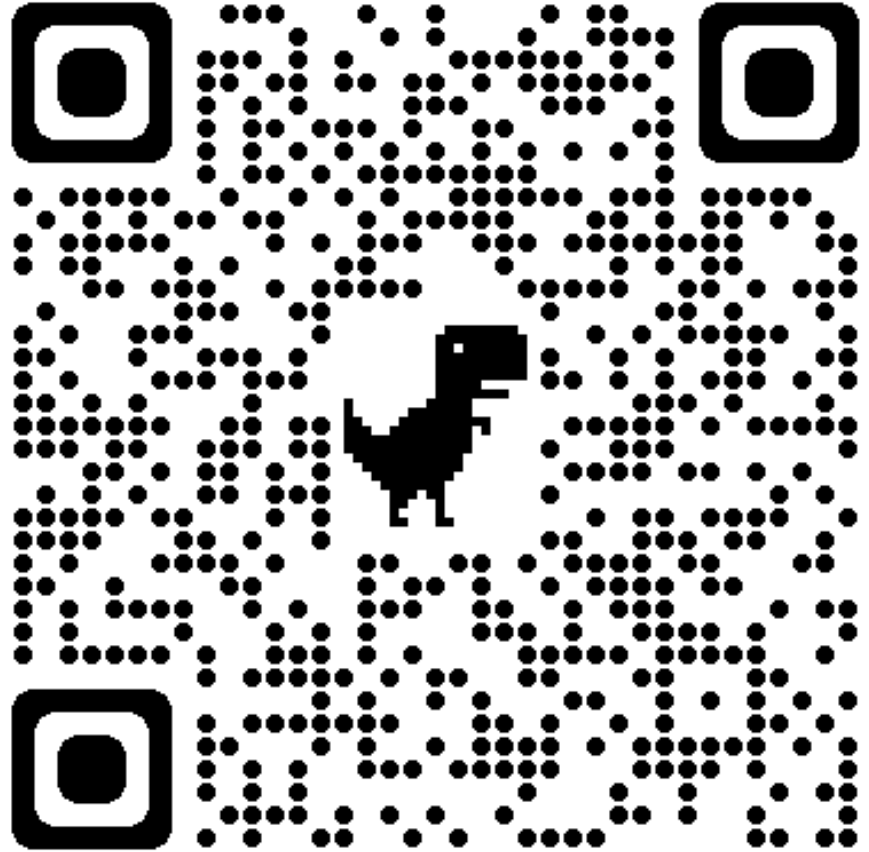




ENERGY ACCESS EXPLORER
TOOL DEMONSTRATION

ENERGY ACCESS EXPLORER TUTORIAL

Hands-on Group Activities



A world map where the landmasses are dark blue and the oceans are a lighter blue. Numerous small yellow and white dots are scattered across the landmasses, representing city lights at night. The text is centered over the map.

Thank You!

For more information visit
energyaccessexplorer.org