

**EFFICIENCY
FOR
ACCESS**

Promoting High-Performing Off-Grid Appliances: Opportunities for Policymakers

EELA Webinar Series: Enabling policies for a market transformation towards EELA
29 September 2020



Off-Grid Appliance Markets are Growing

Off-Grid Appliance Sales Are Growing

30-80% of solar home system kits now include an off-grid appliance. In the second half of 2018 GOGLA affiliates reported sales of:



175,000
fans



147,000
televisions



6,000
refrigerators

Off-Grid Appliance Energy Efficiency Is Improving



9x
smaller

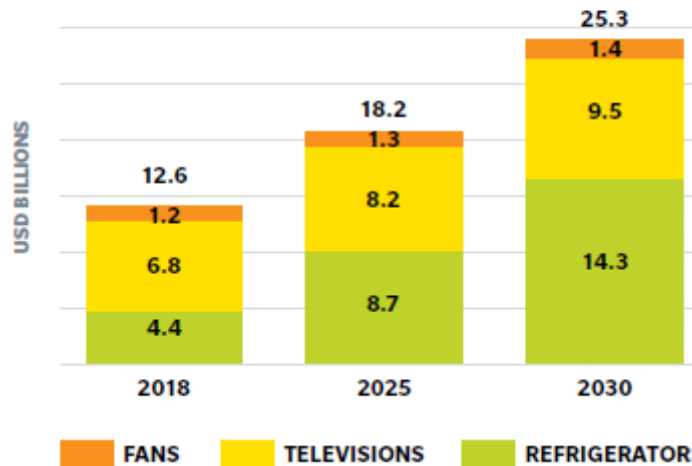


The size of the solar panel required to power a best-in-class off-grid refrigerator is nine times smaller than what is required to power a conventional refrigerator.

Between 2014 and 2017, the energy efficiency of televisions improved by **45%**

Cumulative Market Potential

The cumulative market opportunity across televisions, refrigerators and fans is estimated at USD 12.6 billion globally at the end of 2018. The market is predicted to grow to 25.3 billion by 2030.



Policy Brief

- Explores how test methods, quality standards and labeling might be used to promote high quality and energy efficient appliances in off-grid markets.
- Developed in consultation with a diverse group of stakeholders, including:
 - Kenya Energy and Petroleum Regulatory Authority
 - ECOWAS Centre for Renewable Energy and Energy Efficiency (ECREEE)
 - East Africa Centre of Excellence for Renewable Energy and Efficiency (EACREEE)



POLICY BRIEF

PROMOTING HIGH-PERFORMING OFF-GRID APPLIANCES

JUNE 2019
EFFICIENCY FOR ACCESS COALITION



Tools for Policymakers

Tool	Function	Possible Objective:
Test Methods	<ul style="list-style-type: none"> Evaluate product quality and performance under specific conditions. 	<ul style="list-style-type: none"> Provide impartial information on product performance and quality, for organisations setting standards. Facilitate direct comparison of products.
Voluntary Standards	<ul style="list-style-type: none"> Establish voluntary minimum requirements relating to performance, durability, safety, truth-in-advertising or warranties. 	<ul style="list-style-type: none"> Promote high quality products through procurement, incentive schemes or other market support programmes. Build stakeholder skills, experience and capacity prior to introducing mandatory standards.
Mandatory Standards	<ul style="list-style-type: none"> Establish mandatory minimum requirements relating to minimum energy performance (MEP), durability, safety, truth-in-advertising or warranties. 	<ul style="list-style-type: none"> Ensure standards fully cover both conventional and efficient versions of products. Reduce or eliminate lowest-performing products from the market. Prevent poor quality products from entering a market, and protect consumers, through <ul style="list-style-type: none"> Conformity assessment; Market surveillance; and Enforcement.
Labelling	<ul style="list-style-type: none"> Make information regarding performance and/or adherence to standards available to businesses or consumers. 	<ul style="list-style-type: none"> Raise business or consumer awareness of product performance and adherence to standards, enabling more informed choices. Make it easier to identify products that meet standards, as part of enforcement efforts.

Considerations

- Timing the introduction of standards for off-grid appliances is challenging. If introduced too soon, standards can disrupt markets and impose costs on companies that slow market growth.
- Standards need to be developed for specific appliances and end users, and phased in over time as markets mature.



Recommendations

RECOMMENDATION

Conduct market research and stakeholder mapping



RESULT

Builds a deeper understanding of the market and confidence in the proposed measures

Build on existing tools and consider a regional approach



Lowers testing, certification and time costs for companies. Enables more efficient compliance enforcement.

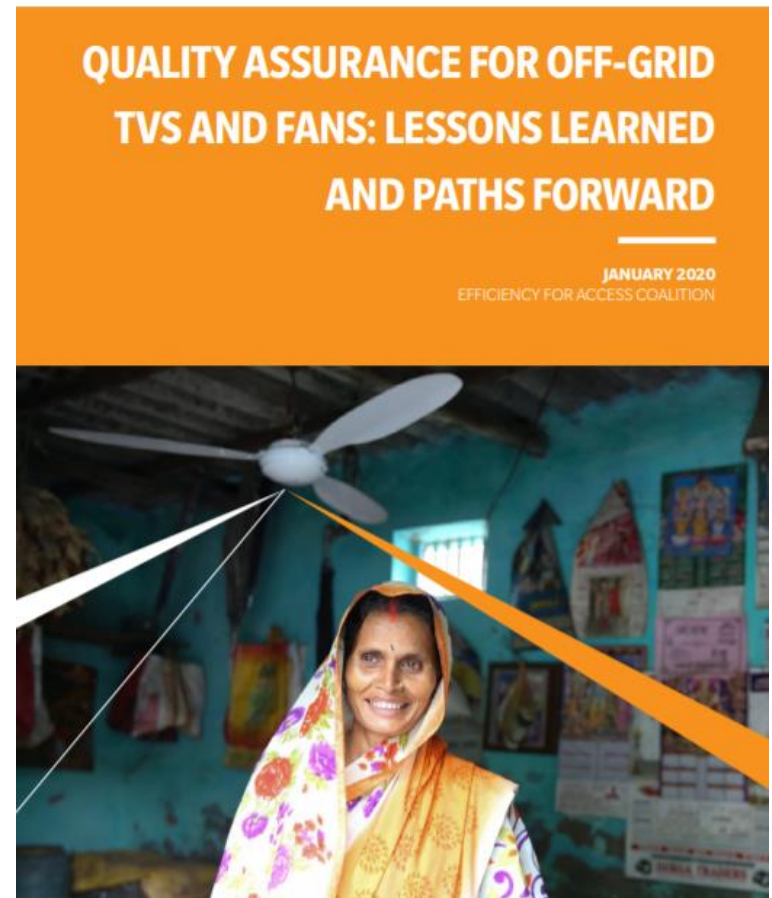
Develop a roadmap and engage stakeholders



Minimizes disruption by making the changing policy environment as predictable as possible.

Resource: Quality Assurance for Off-Grid TVs & Fans

- CLASP developed test methods for off-grid appropriate TVs (2014) and fans (2016) and continues to test and share data about these products.
- In 2020, Efficiency for Access deployed pilot voluntary standards to help market actors evaluate the quality of TVs and fans based on:
 - Performance reporting
 - Truth-in-advertising
 - Durability, quality & safety
 - Consumer protection
- The pilot helped the team refine the quality criteria and showed that the framework was essential for market actors in identifying quality products.



Resource: VeraSol Product Database

The [VeraSol Product Database](#) contains verified third-party data on the performance and quality of 300+ off-grid-appropriate appliances.

Policymakers can use the database to develop market baselines, track market progress, and inform policy decisions. Contact the VeraSol team at info@verasol.org to learn more.

Solar Water Pumps

HOME → SOLAR WATER PUMPS Search

RESULTS: 30 OUT OF 30 SOLAR WATER PUMPS(S)

FILTER BY

- 3 PRODUCT TYPES
- 7 HEAD VALUE
- 1 POWER SUPPLY TYPE
- 6 PV ARRAY SIZE
- 6 VOLUME
- 1 SAMPLE LOCATION
- 15 BRAND

AMPEDED INNOVATION

Product Type	Surface Pump
Model Number	WOWsolar Pump
Power Supply Type	DC
Simulated PV Array Size [W]	80
Simulated Head Value [m]	6
High Irradiance Day: Total Volume of Water Moved per Solar Day [m ³ /day]	5.9

BENGAL SOLAR

Product Type	Surface Pump
Model Number	DQ82-D-30-24/280
Power Supply Type	DC
Simulated PV Array Size [W]	500
Simulated Head Value [m]	10
High Irradiance Day: Total Volume of Water Moved per Solar Day [m ³ /day]	22.4

AZURI

Product Type	Surface Pump
Model Number	
Power Supply Type	
Simulated PV Array Size [W]	
Simulated Head Value [m]	
High Irradiance Day: Total Volume of Water Moved per Solar Day [m ³ /day]	

CLEAR ALL APPLY FILTER

COMPARE

Other Resources

- [Policy Brief: Promoting High-Performing Off-Grid Appliances](#)
- [Policy Brief: The Role of Appliances in Achieving Gender Equality and Energy Access for All](#)
- [Quality Assurance for Off-Grid TVs and Fans: Lessons Learned and Paths Forward](#)
- Country Profiles: [Sierra Leone](#) and [India](#) (forthcoming Profile for Nigeria)
- Global LEAP Test Methods for Off-Grid Appropriate [TVs](#), [Fans](#), [Refrigerators](#), and [Solar Water Pumps](#)
- For advice or support, contact us at info@efficiencyforaccess.org.

Poll

- **Are you currently working on test methods, standards or labelling for off-grid appliances?**
 - Yes
 - No
- **If not, do you envisage doing so in future? If so, when?**
 - Do not envisage doing so in future
 - Within a year
 - 1-3 years
 - 3-5 years
 - 5-10 years
- **What kind of support would be most valuable to you in this area?**
 - Identifying High-Performing Products
 - Developing Test Methods
 - Developing Quality Criteria
 - Other?