



ICT

Solar Appliance Snapshot

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EFFICIENCY FOR ACCESS COALITION

Information and communications technology (ICT) is a broad term that covers technologies that enable communications. With prices falling, it has become a key enabler in the off-grid industry, and can have additional positive impacts if the right policies are adopted.

MARKET INSIGHTS

The combination of expanding mobile networks and the increasing use off-grid solar products is driving the uptake of mobile phones in off- and weak-grid areas. Smartphone use and 4G internet connections are expected to greatly increase from 2019 to 2025 as technology improves, and mobile networks expand.

Whilst radios are a mature technology, they are declining in use in some developing countries. Computers are in the growth phase of the market development curve; however, they remain expensive and consume significantly more energy, resulting in low penetration in rural areas.

CONSUMER IMPACTS

ICT technology such as mobile phones is often an enabler for other technologies in catalysing social and development impacts. Mobile phones can allow farmers to improve crop yields by using apps on weather and farming practices. ICT in health centres can establish effective systems that can improve quality of service or care and improve patient monitoring.

In a recent survey, energy access practitioners ranked 'mobile/smart phones' second, computers sixth and 'modems, web routers, internet/connectivity equipment' seventh in household development impact potential.



50%

The expected penetration rate of mobile subscribers in Sub-Saharan Africa in 2025



7.7%

of households in Africa were estimated to have a computer in 2019



188M

children attend primary schools that are not connected to any type of electricity supply



3.6B

people remain offline, unable to access online education, employment or critical health advice

CURRENT SUCCESSSES

The uptake of mobile technology in off- and weak-grid areas has been rapid, largely driven by the virtuous cycle of off-grid solar product adoption boosting mobile phone adoption and vice versa. This was a key enabler in the development of the off-grid PAYGo solar sector.

Radios were among the first ICT to benefit from the wide solar home system adoption. They have become the dominant ICT medium in Sub-Saharan Africa, thanks to their ability to be run using low-power batteries and to the large off-grid coverage area of radio networks.

REMAINING CHALLENGES

Most off-grid appropriate ICT, with the exception of mobile phones and radios, is at an early stage of market maturity. Device reliability continues to be a challenge across different operating environments. Lack of energy infrastructure and mobile data coverage are major barriers to expansion. Finally, with the expansion and integration of internet of things (IoT) in off- and weak-grid technologies, privacy and security are becoming significant issues. Users should be advised about what personal information is being collected and devices must be secure.

RECOMENDATIONS AND PATHWAYS TO SCALE

Building the capacity and awareness of stakeholders will play an important role in the uptake of ICT and the benefits it brings to emerging economies. Access to information, in the form of market and technical data, and finance will be key to scale.



Support innovation

R&D support to early-stage ICTs can help to develop and appropriately adapt technologies and products. It can also improve overall device reliability.



Provide focused market intelligence

Access to market information for ICT technologies in off- and weak-grid markets is limited, providing this will enable the market to grow and realise its potential.



Create sustainable models for public good ICT

Public good ICT, such as education and health focused technologies, need increased sustainable funding models like smart subsidies.



Build new user capacity

Funding to train and build the low capacity of teachers and health ICT users is critical to scaling these ICT technologies.



Improve access to finance

Companies find it difficult to attract financing to scale up. Third-party support, such as matchmaking, to access finance via impact investors or donors is required.



Educate & raise awareness

ICT can have a major impact in the health and education sectors. Educating government actors working in these sectors will be key to help them better understand and supply the off-grid market.