

SDC 2019 Annual Meeting Abstracts

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Title: The Importance of an Enabling Environment for Pay-As-You-Go Solar Home Systems: A Case Study of Rural Panama



To achieve Sustainable Development Goal 7, nearly 1 billion people around the world require reliable, low-cost, high quality electrification solutions by 2030. In addition to the implementation of large grids, household-sized Solar Home Systems (SHS) combined with innovative financing models are aiming to close the energy gap. SHSs charge during the day (under the sun) to power efficient LED lights and other electrical household appliances. These products, coupled with pay-as-you-go (PAYGO) financing systems, enable poor, off-grid communities to access enough electricity to charge their cell phones and provide light in the evening. However, enabling infrastructure, such as mobile coverage and mobile money services, is required for this solution to be effective. In Kenya, where mobile money is highly accessible and commonly used, PAYGO solar home systems are being adopted throughout the country. On the other hand, in countries such as Panama, where connectivity and mobile money infrastructure is lacking, SHSs face many challenges. Presented through a case study of two sites in rural Panama, we discuss the need for enabling environments for successful implementation of clean energy technologies for the rural poor. We show that SHS products can replace more expensive and environmentally costly products, making them an appropriate solution for environmental sustainability in low-income communities. Our study finds that SHS users in Panama recognize their children's homework completion and evening leisure as the most beneficial use for the products. However, issues found in local infrastructure, including access to mobile coverage and mobile money platforms, highlighted barriers to energy access. Without access to reliable mobile infrastructure, households rely on payment agents to personally transfer cash payments from villages to town. Our study found that agents can be unreliable, sometimes leaving users unable to top-up and use their SHS for weeks or months at a time. In Panama, to enable increased adoption of PAYGO solar technologies, and improve their overall impact, availability of mobile coverage and mobile money platforms must be addressed. Globally, without enabling environments and holistic implementation, technology services intended to reach the SDGs will fail to achieve their full potential.