SMART VILLAGES
New thinking for off-grid communities worldwide

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Findings from the workshop on sustainable energy sources for off-grid communities in Bolivia

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2.5 million people in Bolivia live without a clean and sustainable energy source, and rely on diesel, kerosene, and candles for lighting. Many of them live in remote rural communities. The Political Constitution of Bolivia establishes that access to electricity is a citizen's right, and the country aims to be fully electrified by 2025.

To examine the opportunities and challenges of achieving universal energy access in Bolivia, the Smart Villages Initiative organised a workshop on access to, and use of, renewable energy sources for rural communities in Bolivia on April 25, 2016 in La Paz. The workshop brought together representatives of the public sector, international and regional development organisations, NGOs, academia, and the private sector to discuss and exchange experiences of electrification of off-grid rural communities in Bolivia. This policy brief summarises the key findings and recommendations of the workshop and accompanies a more detailed workshop report available at www.e4sv.org.

Key findings and recommendations of the workshop are as follows:

1. A comprehensive and integrated approach is needed to rural development in which energy access projects are complemented by initiatives on productive enterprises, infrastructure (roads, water and waste management, etc.), and key services such as education and healthcare to realise potential synergies between them. Integrated solutions require cooperation across different government ministries and agencies as well as cooperation among professionals from different disciplines.
2. More emphasis is needed on fostering and supporting entrepreneurship in rural areas. This includes the provision of training to develop the necessary technical and business management skills. Attention should to be given to strengthening local value chains and access to markets, including building better links between rural and urban communities. Initiatives on productive enterprises should

ensure that products have a market and deliver the quality required by the market.

3. To set up productive enterprises, and for independent schemes to provide the necessary enabling energy services, access to affordable finance needs to be improved. Current schemes are very time-consuming and need to be streamlined.

4. The government plays a critical role in the process of rural electrification, both directly through promoting integrated interventions and indirectly by establishing the conditions that allow the private sector to invest and to operate in the rural energy space. In this respect, "intelligent subsidies" can provide the needed impetus to electrification of poor rural communities. Care should be taken to ensure that there is an exit strategy, otherwise they may become a heavy burden on government projects in the longer term. From the outset, villagers should contribute to paying for the cost of electricity services: effective electronic systems are now available to enable the efficient collection of payments and to enable enforcement actions if necessary.

5. It is essential to the long-term sustainability of energy access projects that arrangements are in place for the operation and maintenance of systems and that spare parts are available. In some instances, it may be appropriate for villagers to be responsible for operation and maintenance of systems, but they must be given the necessary training and be appropriately incentivised. A better option may be for a private company to undertake operation and maintenance on a sustainable commercial basis.

6. Projects should include a preparatory engagement phase to secure the support of the community and local municipality. Evaluation is needed to ensure that other required infrastructure is in fact in place.

7. Third-generation solar home systems can provide for the basic electricity requirements of households and offer substantial improvements compared to earlier systems: they are cheaper, easier to install and maintain, and pay for themselves over a relatively short period through savings in purchases of candles, kerosene, etc. Their value in respect of supporting the provision of household services can be enhanced through promoting an energy efficiency culture in households and ensuring that the necessary efficient devices are available.

8. Projects should plan for, and make resources available for, evaluation so that lessons can be learned on the key factors determining outcomes. Valuable information can be derived from both successes and failures.

Notes

We aim to provide policymakers, donors, and development agencies concerned with rural energy access with new insights on the real barriers to energy access in villages in developing countries—technological, financial and political—and how they can be overcome. We have chosen to focus on remote off-grid villages, where local solutions (home- or institution-based systems and mini-grids) are both more realistic and cheaper than national grid extension. Our concern is to ensure that energy access results in development and the creation of 'smart villages' in which many of the benefits of life in modern societies are available to rural communities.

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