



Review of energy kiosk development projects

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The data analysis presented here is based on a study carried out in 2014 by Claudia Knobloch and Judith Hartl, from the research organization Endeava, titled “The energy kiosk model, Current challenges and future challenges”¹, which collected data from 23 actors involved in developing the energy kiosk model.

1. THE ENERGY KIOSK MODEL

Energy kiosks are centres for electricity production and supply of energy services, generally located in rural or peri-urban zones. It is a “pre-electrification” model, offering centralized energy production at the level of an energy kiosk/point/station/hub², in proximity to local communities. Indeed, the model doesn’t allow direct domestic connection by means of a cable and installation of a meter; it is generally a requirement that consumers travel to the kiosk to access the services provided. Thus, the concept is innovative not for its technological aspects (although these may be notable), but rather for its model of distributing electricity and electrical services, with the goal of reaching the majority of the local population, particularly the most vulnerable.

Although the kiosks could be powered by a variety of energy sources, priority is given to electricity production from renewable energy sources. In most cases, for practical reasons, and in view of the generally limited amount of energy produced (less than 5 kW), solar energy is favored. Hybrid models, which combine renewable (usually micro-hydroelectric or solar) and thermal (usually diesel) energy production, have also been developed, with a view to guaranteeing supply in bad weather, or when climatic conditions do not allow for continuous supply throughout the year.

The electricity generated is used principally for recharging electrical products (lamps, radios, portable telephones, car batteries, and other types of battery designed specifically to work with a solar system). On average, for each kiosk, these recharge services are accessed by fewer than 100 households in the village. A common approach for all the actors is to offer complementary services alongside the recharge service. Printing services, screening of TV programs, internet connection, refrigeration, and direct sale of small solar systems or basic necessities are common (see Figure 1).

¹ Knobloch and Hardl (2014), “The energy kiosk model, Current challenges and future challenges”, Endeava Business Model Library | Issue 01 | October 2014, p. 8

² The name varies from one project or business to another

2. OVERVIEW OF THE ACTORS³ INVOLVED IN DEVELOPING THE ENERGY KIOSK CONCEPT

Currently, energy kiosks are installed all around the world, primarily in India and on the African continent, but also in south-east Asia, Latin America and the Caribbean. Most have appeared within the past 10 years, between 2005 and 2013. As of September 2015, five actors are responsible for more than 25 operational kiosks each (Endev, HERi Madagascar, Solarkiosk, Teri and Schneider). Taking an average across all surveyed projects, however, the number of operational kiosks is still quite small, since more than half of the actors surveyed manage fewer than ten kiosks each (see Figure 2).

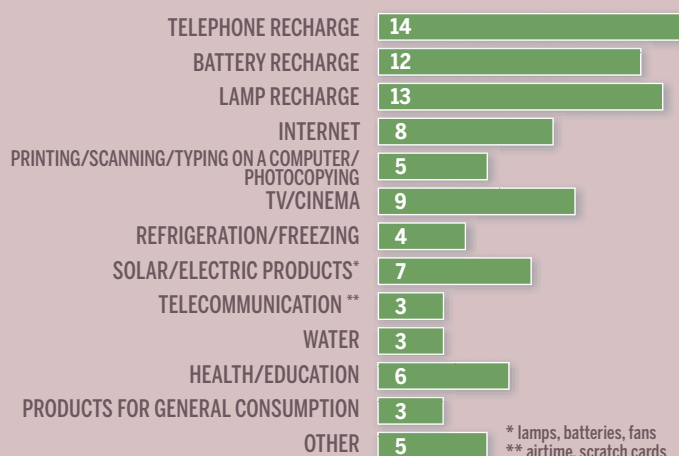
The different projects are at different stages of development. Seven of 23 actors are currently in the initial phase of validating the technology, designing business plans, and preparing to implement the first pilot kiosks. Two actors have confirmed the efficiency of a prototype and are working on a controlled upscaling. They have tested their models several times but will only extend their network of kiosks when a third party submits a request and guarantees the financing. They are thus operational, but are not systematically pursuing growth. Five actors are currently running their existing kiosks but do not wish to expand their network. Of these, some are dependent on financing (either public or private) to expand, while others are facing difficulties in achieving a sustainable economic model. Finally,

³ Actors can be categorized according to two principal characteristics: i) their structure (business, government or non-governmental organisation, agency, association, individual, etc.), and ii) the scale of their intervention (local, regional, national).

nine actors have demonstrated the viability of their model in the business setting, thanks to appropriate technology and a suitable business model, and are currently working towards widespread upscaling.

The principal challenge to the kiosk concept is how to set up the financial model. Establishing energy kiosks generally requires a substantial initial investment, of around EUR 40,000, to cover building expenses, the cost of the electrical system and of the cost of the electrical products proposed. Such charges are rarely offset in the medium term, forcing the actors to be constantly innovative, creating new opportunities and maximising the impact of the services provided. The low purchasing power of the populations who benefit from the scheme also limits the potential financial viability of each kiosk. Thus, the correlation between the investment and the return on the investment is crucial. However, on this point, there has been a lack of communication and exchange of experiences and best practices between the actors, resulting in a lack of research and optimisation of financial models for energy kiosks.

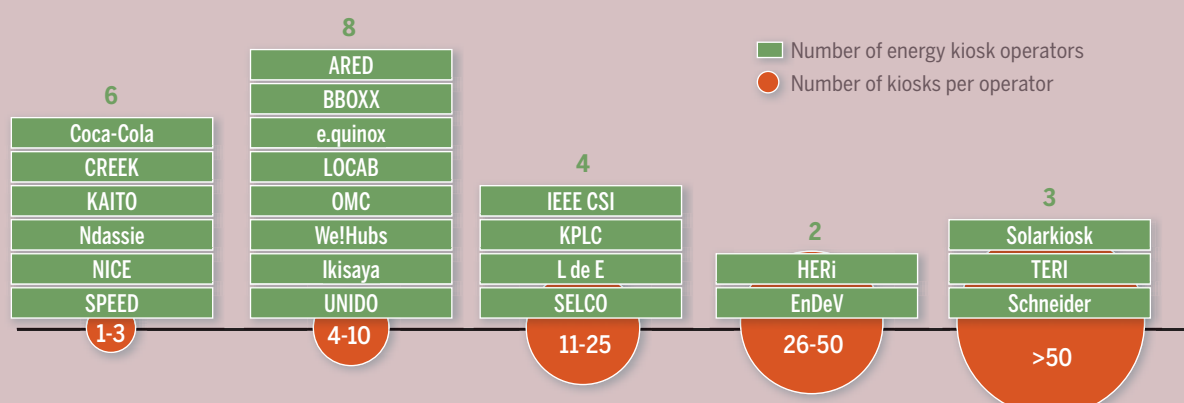
Range of services and products offered by the 23 surveyed actors involved in developing energy kiosks in 2014



Source: Knobloch and Hardl, 2014

Figure 1

Number of operational energy kiosks per actor



Source: Ibid. updated by the authors in September 2015

Figure 2