Delivering Sustainable Energy to the Poorest and Most Marginalised People

In seeking achieve the interlinked objectives of Sustainable Energy for All (SE4All) and ensure that the transformative benefits of sustainable energy access reach the poorest and most marginalised people, it is necessary to consider new and innovative approaches to service delivery that specifically target these people and communities. This briefing paper explores some examples of ongoing projects that employ such innovative delivery mechanisms to provide access to sustainable energy for ALL.

Reaching the people at the bottom of the “economic pyramid”
The phrase “base of the economic pyramid” is often used to describe a vast section of the global population considered to be income poor. However, this is a very simplistic and homogeneous representation a very heterogeneous group facing an array of multidimensional challenges based on context and social status. Those people in the most vulnerable situations typically live beyond the reach of conventional markets and so require their needs to be met through channels that can provide sustained social gains in the long term. Such solutions might not be market based or financially sustainable in the short term. For the poorest people and communities, access to sustainable energy should be viewed as an enabler of positive development outcomes. As such, it could be considered a public good, in much the same way as education, healthcare or public infrastructure.

Poor income groups are not homogenous – some live under market conditions; however the most vulnerable communities cannot be treated as a typical market. Due to multidimensional challenges of entrenched poverty, like basic survival, insecurities related to health, employment and social contexts and heavily negative financial burdens, these communities are marginalized and excluded by default. (Source: Selco Foundation)
People living beyond the reach of market based approaches

There is a necessary distinction to be made between energy strategies that:

a) cater for the needs of the very poorest, those for whom even the smallest up front cost for energy is prohibitive; and

b) enable energy access for poor income households that do live under market conditions, usually informal, and can afford minor up-front energy costs.

The examples captured in this document can be identified by the following symbols:

- Targeting the poorest households beyond market based approaches
- Targeting poor households under market conditions

Access to sustainable energy increases livelihood options and productivity of households.

Right: Man weaves baskets by light of a solar lantern (Credit: Selco Foundation)

The 2014 report of the SE4All Energy Access Committee recognises that:

“The SE4All initiative needs to promote people-centred approaches which make a concerted effort to target the very poorest, those who will not be reached by business as usual as they lack the disposable income to meet the up-front costs of energy access. Innovative access strategies, developed in consultation with civil society, local governments and the private sector actors, especially in off grid or hard to reach areas, should be adopted to ensure that the poorest households are enabled to access a minimum threshold energy consumption without assuming unmanageable financial risk.”

To facilitate the identification and adoption of such innovative and people centred access strategies, the Mary Robinson Foundation – Climate Justice and the Selco Foundation, with assistance from the UN Foundation, decided to convene a working group of experts and practitioners from relevant sectors - including development, climate, energy, business and philanthropy - with the primary objective of identifying appropriate socially sustainable solutions to deliver access to clean energy to the poorest and most marginalised people.

The first thematic session of the working group focused on innovative delivery mechanisms and the examples that follow were input by working group participants.
### Examples of innovative delivery mechanisms to enable energy access for poor and marginalised communities

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<td>⚡</td>
<td>The Government of Malawi plans to deliver 2 million energy efficient stoves to households by 2020. To achieve this, and to ensure access for to the poorest households, efforts are underway to deliver free cook-stoves to households receiving the countries Social Cash Transfer.</td>
<td>Irish Aid; Concern Universal; GiZ; EnDev</td>
<td>See annex 1</td>
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<td>In Rwanda, Delagua Health aims to distribute clean cook-stoves, along with advanced water filters, to the poorest three million people. The project falls under the UN’s Clean Development mechanism and uses established community mechanisms for distribution.</td>
<td>Republic of Rwanda Ministry of Health and others</td>
<td>See website</td>
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<td>CAFOD and its partners have recently begun a community-based green energy programme in Kenya, affordable and sustainable energy services in eight districts in the most vulnerable arid and semi-arid regions. The project aims to ultimately benefit 407,702 households.</td>
<td>CAFOD; ACP-EU Energy Facility; b:sec</td>
<td>See report on innovative energy delivery models by CAFOD and IIED</td>
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<td>In Uganda, work has been done to assess the willingness to pay for D.Light solar lanterns in rural areas. The report highlights the importance of access to consumer finance in promoting diffusion.</td>
<td>J. Ryan Hogarth, Oxford University; FINCA-Uganda; Naco Solar</td>
<td>See annex 2 for summary or for Energy for Sustainable Development paper, click here</td>
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<td>The Moving Energy Initiative is a ground-breaking new project which seeks to meet the energy needs of refugees and internally displaced persons (IDPs) in a manner that reduces costs, is safe, healthy and respectful; that also benefits host countries and communities.</td>
<td>Chatham House; UK Department for International Development; the Global Village Energy Partnership and others.</td>
<td>See more on Sustainable Energy Provision Among Displaced Populations</td>
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<td>The Light Library project in Senegal aims to enhance education outcomes access to solar light. The lights are owned by the Ministry for Education and rented out to students for a nominal fee.</td>
<td>Solar-Aid; Lighting Africa; the Senegalese Rural Electrification Agency and the Ministry of Education</td>
<td>See more about the Light Library here</td>
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Prepared by the Mary Robinson Foundation – Climate Justice for the occasion of the SE4ALL Advisory Board sherpa meeting in Vienna, 26-27 March 2015.
Annex 1

Malawian Case Study: Distribution of Stoves through the Social Cash Transfer (SCT) Programme

With good support and input from the Marty Robinson Foundation – Climate Justice, the Malawian Government, in early 2012 set itself a target of delivering 2 million energy efficient stoves to households by 2020. A national cook-stove taskforce chaired by the Government, and comprised of relevant private sector, NGO, donor and government representatives leads on actions to achieve this ambitious but attainable goal.

Irish Aid supports the task-force and has been working with relevant Government partners and Concern Universal in devising programmes to roll out stoves at scale. One such pilot is underway in Balaka district, in the central region. Irish Aid supports the Ministry of Gender in delivering Social Cash Transfers (SCT) to the poorest (10%) labour constrained households in the district who are mostly the elderly, female headed households, child headed households and households with chronically ill members, providing monthly electronic cash transfers to approx 8,400 homes.

Concern Universal with Irish Aid support will provide all 8,400 homes with stoves over the coming 8 months. These clay stoves are produced by local (mainly women’s) groups at a cost of approx. €1 and are sold in the cities for approx. €2. With the pilot, all SCT recipients will be issued with a coupon that can be redeemed through a network of local distributors (merchants / shops / kiosks or agents). For each stove delivered to the SCT recipients the distributors receive an additional stove that they can sell to other customers. In this manner it is expected that a minimum of 16,800 stoves will be distributed or sold. EnDev and the UK government have committed to provide the necessary support to roll out stoves to a further 80,000 SCT households in targeted SCT districts through a results based financing mechanism. It is planned that the SCT roll out will establish a viable production and marketing structure for stoves throughout the country.

The Government has a target of scaling up their SCT programme to reach 320,000 households by end 2016, receiving further donor support and using the methodology outlined above it is hoped to reach a minimum of 640,000 households. This will be a significant contributor to reaching the 2 million by 2020 target and it is hoped that by reaching 750,000 households by end 2016 the country will have reached a tipping point and gained sufficient momentum to achieve the 2020 target. Other major contributing initiatives include an EnDev funded urban stove marketing programme which has recorded sales of up to 10,000 stoves per month. It is planned that within three years the Government, with donor support, will have created the necessary conditions to allow the private
sector, (small scale women-led stove production groups and distributors) to take over and lead the process of delivering stoves to 2 million homes.

Through use of the SCT targeting process all distributed stoves can be audited and qualify for carbon finance. Concern Universal has had previous experience of tapping carbon finance for their stoves interventions and has worked with targeted communities in delivering social infrastructure through use of carbon finance. In late February the Minister for Energy Atupele Muluzi launched an under 5 clinic / classroom in a rural community that was funded in it’s entirety by carbon finance.

Carbon finance generated from the programme can be either invested in community infrastructure, be paid directly to households or be used to provide clean energy solutions (eg solar energy systems) for poor rural households. The stoves roll out is also being used a bridgehead to inform a growing national discussion on delivering energy access to the 80% of the population who are likely to remain off the national grid for the foreseeable future.

**Embassy of Ireland**

**Lilongwe, Malawi,**

**March 2015**
Annex 2

Study on the willingness to pay for solar lanterns in rural Uganda, and the role of carbon finance and microfinance in promoting diffusion

In 2011, a study was conducted on the potential for market-led diffusion of solar lanterns in rural Uganda, and the role that microfinance and carbon finance could play in driving this diffusion. The study involved a willingness-to-pay (WTP) survey carried out in partnership with a microfinance institution, FINCA-Uganda and a small local solar PV retailer, Naco Solar. The researcher used D.Light Nova lanterns, which are powered by a small 2 W solar panel, and have a mobile phone charging function.

The findings were that, based on current Clean Development Mechanism (CDM) and voluntary carbon market methodologies, carbon finance can make very little impact: the amount of GHGs offset per lantern is simply too small, and the transaction costs involved in carbon projects too high (although the new deemed savings methodology for solar lanterns may make these projects more viable). Consumer finance, on the other hand, appeared to be vital to the diffusion of solar lanterns.

The reason consumer finance is so important is that the cost of the product is already cost-competitive with prevailing methods of lighting. Households already spent a substantial portion of the income on lighting services. A typical rural household burned 47.6 litres of kerosene per year for lighting. In 2012, the price of kerosene in Uganda was UGX 2950 ($1.18), leading to an annual expenditure of UGX 140,420 (US$56.40).

Many rural households included in the study also used a mobile phone. The prevailing price of charging a mobile in 2012 was UGX 500 (US$0.20) per charge. Respondents typically charge their phone one to three times per week, and often walk many kilometres to do so. Assuming that a household charged their mobile on average two times per week, it would spend an additional UGX 52,000 (US$20.88) per year on charging fees, bringing its annual energy expenditure to UGX 192,420, or US$77.28.

In comparison, the average cost of a D.Light Nova solar lantern was UGX 95,000 (US$38.15). The WTP survey revealed that only two percent of rural households were willing to pay UGX 95,000 upfront. Given the cost-effectiveness of solar lanterns, the continued use of wick lanterns and pay-per-charge services may seem like irrational economic behaviour. However, the survey investigated alternative explanations. When respondents were asked whether they were willing to pay the UGX 95,000 for the solar lantern if a loan were extended to cover the upfront costs, the percentage that responded affirmatively increased to 45 percent. Furthermore, if, prior to the inquiry about willingness-to-pay, the surveyor calculated in front of the respondent their current expenditure on kerosene and mobile phone charging, the percentage of respondents that were willing to pay UGX 95,000 for a Nova lantern with a loan increased to 72 percent. We concluded that rather than irrational economic behaviour, the continued reliance on kerosene for lighting and mobile phone charging services in rural Uganda was instead illustrative of households’ low purchasing power and insufficient information about the potential cost savings of alternative technologies.
Annex 3

Other Useful Links

- The Mary Robinson Foundation – Climate Justice prepared a position paper on Meeting the energy needs of the poorest – a role for social protection.
- A 2014 report by IISD and GSI titled Financing the Sustainable Development Goals Through Fossil-fuel Subsidy Reform: Opportunities in Southeast Asia, India and China includes two case studies of fossil fuel reform and investment in social services in Indonesia and the Philippines (pg 14-17).
- A case study produced by IIED on strengthening the resilience of vulnerable groups to disasters and climate change: sustainable energy solutions in Quy Nhon City
- On Monday 17th November 2014, IIED, ODI and IDS co-hosted a one-day workshop ‘Financing sustainable energy for all’ held at IIED’s offices in London. Here is a report of the event and a blog describing the workshop outcomes: How can we finance sustainable energy for all?