By surveying the customers of Solaris Tanzania (operating branch of Solaris Offgrid), this report explores appealing products, as well as current levels of access to these products.
Solaris Offgrid designs and manufactures Pay-As-You-Go solutions to foster affordable and sustainable energy access in off-grid areas.

We have been dedicating incredible efforts in R&D since 2014, and successfully experimented it with our last mile operator Solaris Tanzania. With Solaris Offgrid we scale up the impact by sharing this unique integrated solution to our local partners across developing countries.

We run our own last-mile operations in Africa
to design field inclusive PAYG Solutions for our ambitious partners

Solaris Offgrid and Solaris Tanzania are trading brands of Eternum LTD
This report explores the findings of Solaris Tanzania. It examines the results of a long term surveying project; looking at products and services that are of most interest to rural communities, along with their current levels of access to these.

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Main takeaways of this study:

- Multimedia is consistently ranked as the most interesting service to our customers, overcoming offers of more ‘practical’ products such as irons or refrigerators.

- This result is the same even when we controlled for gender and income levels.

- Specifically, the multimedia services of most interest are:
  - Photo, video and music (but already have good levels of access);
  - Internet (and there are very low levels of access).

- These needs can be met by a few different products; but tablets cover them all and are very appealing, with 90% interested in leasing one.
This Field Study examines the findings of **Solaris Tanzania**, in combination with Clément Renard and Alexandre Pasqiou as part of a mission for association ODD and École Centrale Supélec, on energy needs in rural areas of northern Tanzania that could be satisfied within the range of a 200 watt peak DC installation.

Over the course of a few months, many organisations (see below) have been involved in the first phase of the study to share their understanding of those needs from an household perspective but also from the stand point of diversity of key representative stakeholders of the rural ecosystem such as Schools (Education), Farmers (Agro-Pastoral), Dispensaries (Medical), Local entrepreneurs (Business). We are grateful to the following organisations who participated to the study:
The overview of the rural energy needs pointed out biggest needs (beyond lighting) to be related to refrigeration (Medical and Business), to irrigation (Agro-Pastoral) and multimedia (Education and Business).

In the 2\textsuperscript{nd} phase, the study focused its field interviews exclusively on the household segment with more than 300 Solaris Tanzania’s customers and prospects surveyed to assess their interest in a list of products, chosen because of their suitability with the Solar Home Systems (SHS) offered by Solaris Tanzania. Some of these would be new products and others are already offered and used as a benchmark:

- Multimedia (TV and tablet)
- Radio
- Refrigeration
- Ironing
- Flashlight
- Fan
- Hair clipper
- Soldering iron

In a 3\textsuperscript{rd} and last phase we surveyed people’s interest in specific multimedia activities and ran some usage tests with these products (such as tablets) to eventually look at how people interacted with them.

This report shares the non confidential results of the phase\#2 and phase\#3 of the study only, which internal publication date is January 2017.
Solaris Tanzania presented a list of products to a sample of our customers and prospects. We asked them to give these products a score out of 10 depending on how interested they would be in having them (1 being no interest and 10 being extremely interested). Some of these items are already offered and some would be completely new; the purpose was to have a benchmark for all of them. The results are below:

<table>
<thead>
<tr>
<th>Product</th>
<th>Ranking</th>
<th>Interest</th>
</tr>
</thead>
<tbody>
<tr>
<td>Multimedia (TV/Tablet)</td>
<td>8</td>
<td></td>
</tr>
<tr>
<td>Radio</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Refrigeration</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td>Ironing</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>Flashlight</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Fan</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Hair clipper</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Soldering iron</td>
<td>0</td>
<td></td>
</tr>
</tbody>
</table>

The results show that the multimedia (TV/Tablet) is the most interest item, with a score of 8. The least interest item is the soldering iron, with a score of 0.
We wanted to see if the income of customers changed their preferences for products. To simplify this, we grouped our sample by their primary income (the income from the head of the households main job), and looked at higher earning and lower earning groups:

- **Higher earners**: >3,500 Tsh ($1.5) per day
- **Low earners**: <2,200 Tsh ($1) per day

The results above show that income does not significantly impact the results. The biggest discrepancy, for ironing, is less than 0.5 and the average overall ranking is the same. In particular, multimedia is still ranked highest by both income groups.
We then ran the same analysis for gender:

It showed more differences, in particular the iron and fridge being ranked higher by women (we assume it to be a reflection of the gender roles within Tanzanian family life). However, despite these differences, multimedia devices are again ranked highest. We therefore decided to focus our investigation which is explored over the next slides.
Having seen that multimedia was at the top of our customers’ priority list, we wanted to explore exactly which services were of most interest. We asked a sample of customers to score a series of multimedia activities out of 10. For comparison we also asked them about the level of access they already had to these activities (1 being no access and 10 being very easy, daily access). Results are below and more analysis of the access/interest gaps is done on the following slide:
The biggest gap between interest and access was for the internet, with customers currently showing very limited levels of access.

There is also a clear interest for typical multimedia: music, video and photos. In particular, video saw the highest interest for a given average access. Music and photo services were highly valued but seemed to be seen as pretty accessible in the area.
We also wanted to assess demand in leasing or buying a tablet, which would meet these demands and could be charged through an SHS. We again surveyed 40 customers, after offering them a chance to use a tablet and an explanation of how it functions:

- **90%** Would be interested in leasing one
- **50%** Would consider buying one outright with cash
- **9%** Had used one before or were comfortable using it at their first attempt

As was expected, the interest was very high. Considering that <10% of our customers buy their SHS in cash, the fact that 50% would be keen to buy a tablet outright shows a very strong interest. However, it’s clear that not all customers are able to use a tablets to its full potential, and require a detailed training.
Over the next few months, we will be working in collaboration with Microsoft to maximise the impact of offering a greater access to multimedia and internet.

As a winner of the Microsoft Affordable Access Initiative, we are provided with resources and support by Microsoft to conduct the following:

• Equip a significant number of households with tablets;
• Gain a better understanding of internet needs and uses;
• Observe how internet access impacts culture;
• Assess the impact of multimedia access (including internet) on livelihood;

Special insights and findings on this project will be shared to our partners. To become a partner and/or benefit from our empowerment services, drop us a line at advisory@solarisoffgrid.com.
Multimedia is a clear winner for our customers’ interests, this is true even when controlling for income and gender.

Traditional multimedia services (photo, video and music) capture high interest levels, but there is already fairly widespread access to these.

Internet services have a large access gap – most people interviewed are very interested but very few have access.

We will be bridging that gap through our partnership with Microsoft by trialing tablets in the field in the coming months.

Author: D. Henry
The 4 crucial components of a sustainable & profitable model

- Hardware
  - Smart & Modular charging controller including PAYG technologies

- Software
  - Cutting Edge CRM enhancing customer and resource performance monitoring

- Empowerment
  - Strategic & Tech expertise in running a Solaris business is shared from day one

- Finance Push
  - Match funding can be provided to cover post pilot capital expenditure effort

The 2 main models of technology integration into your approach

- Full PAYG Home System
  - Adopt our full technology package (hardware and software and replicate our successful Tanzanian model totally (100% focus on SHS) or partially (extending your current range of products from entry level power capacities to a TV-friendly)

PAYG Software integration
- We offer field partners and manufacturers’ partners the ability to synchronise our advanced PAYG software with their own product range (upon existence of a mean of communication in the product such as serial port, keypad, GSM)