At ODYSSEY, we are working to bring electricity to the billion people around the world who do not have it.

Cathy Zoi
IEA/Mission Innovation: Off-grid Access to Electricity
12 July 2017
Need to mobilize $750B ➔ Market Transformation*

*M A change of state in a sector that is significant, widespread, and very sticky

IEA
ODYSSEY: a platform to improve the efficiency of the rural electrification ecosystem so that all players can benefit.

The software platform enables opportunity evaluation, system design, project planning, financial forecasting, product procurement, project finance, and data analytics to happen all in one place.
The ODYSSEY Platform: 10 Products

1. Load Builder
2. Tariff Modeler
3. Design Optimizer
4. Distribution Planner
5. Vendor Marketplace
6. Cost Reporter
7. Financial Forecaster
8. Document Generator
9. Project Aggregator
10. Finance Marketplace
**Kiroka Grid**

**Morogoro, Tanzania**  -6.38436, 37.788205

**Executive Summary:**
Kiroka is a 800 household village in the Morogoro region of Tanzania. Kiroka is a vibrant rice-farming village with several shops and a video hall in the center of town. The Kiroka grid will service households, commercial and productive loads (and will finance the purchase of appliances and equipment to customers), as well as an cell phone tower 1 km from the village (under a PPA). The grid is expected to impact ~1000 people.

**Load**

<table>
<thead>
<tr>
<th>Load</th>
<th>1.05 kWh</th>
<th>165</th>
<th>0 kW</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average Weekday</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Customers</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Peak Load (kW)</td>
<td></td>
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</tbody>
</table>

**Productive Loads**
Village Microgrids offers financing for customers for appliances and equipment, including TVs, fans, refrigerators, radios, grain mills, compressors, etc. Customers can purchase this equipment at the mini-grid kiosk and pay in monthly installments via mobile money.

**Anchor Loads**
Village Microgrids has a PPA with a mtiticom cell phone tower located 1 km from the village. The tower represents 50% of the plant's load with 24/7 load (roughly 2 kW).

**Generation Design**

- **Solar PV**: 30 kW
- **Controller**: LF
- **Generator**: 30 kW
- **Storage**: 135 kW / Lithium Ion

**Financials**

- **Costs**
  - Total CAPEX: $100,000
  - Total OPEX: $100,000
  - 40% Generation System
  - 50% Distribution & Customer Connection
  - 10% General / Other

- **Annual Revenue**
  - Annual Steady State Revenues: $7,000
  - 25% Residential
  - 25% Commercial
  - 25% Productive
  - 25% Anchor
### NW Kenya Portfolio

- **Owner:** Village Microgrids
- **Location:** Kenya, Tanzania
- **Total Deal Size:** $1.5M
- **Total Installed Capacity:** 500 kW
- **Total Projects:** 15
- **Total Connections:** 1500
- **Equity:** $0
- **Debt:** $1.5M
- **Grant:** $0

### Northern Tanzania

- **Owner:** Village Microgrids
- **Location:** Kenya, Tanzania
- **Total Deal Size:** $1.5M
- **Total Installed Capacity:** 500 kW
- **Total Projects:** 15
- **Total Connections:** 150
- **Equity:** $0
- **Debt:** $1.5M
- **Grant:** $0

### Southern Kenya

- **Owner:** Village Microgrids
- **Location:** Kenya, Tanzania
- **Total Deal Size:** $1.5M
- **Total Installed Capacity:** 500 kW
- **Total Projects:** 15
- **Total Connections:** 150
- **Equity:** $0
- **Debt:** $1.5M
- **Grant:** $0
Sneak Peak: Finance Marketplace

**Deal Overview**

Odyssey Microgrid is building 17 microgrids in the Kilimanjaro region of Tanzania, each with 45 kW installed capacity. These microgrids will provide power to roughly 500 to 1,000 people (3,000 homes), as well as hospitals, 15 schools, 10 stores, and several industrial facilities. Odyssey has partnered with local Microgrid Tanzania Limited (MTL), the first microgrid company in Africa, to ensure financial sustainability and provide financing for small businesses to purchase equipment and appliances, such as refrigerators, sewing machines, and four inducto. Odyssey microgrids install free streetlights in each community.

**Financials**

- 10 projects | 15 year project life
- Average annual revenue: $20,000
- Average annual costs: $11,000
- 5 years simple payback *
- 4 years simple payback *
- Custom IRR calculated

**Status of Capital**

- Total: 70% $100,000
- Expected: 30% $30,000
- Needed: 40% $40,000
- Development: $30,000
- Construction: $8,000
- Appliance Financing: $5,000