Ferntech enables Low-maintenance, Robust and Scalable Off-Grid Power Systems by applying Monitoring and Control technologies and by doubling its IRR.
Off-Grid Power Systems are:

- **Not Optimized**
  - No proper control

- **Maintenance is expensive**
  - O&M is 50% of Variable costs

- **Disconnected**
  - Unplanned Maintenance is 25% of Variable Costs

- **Not Scalable**
  - Can’t be deployed in large amounts
These problems are found in:
Our Solution: **UMC** (Universal Monitor and Control)

**Universal Controller**
Off-the-shelf.

**MONITORING**
Customizable dashboards allowing visualization of selected variables and configuration of parameters

**CONTROL**
Customized control module to reduce down-time and increase profits

[1min Portal DEMO]
**Competitive advantage**

- **Universal**: Compatible with any component
- **Full Control**: to increase efficiency and avoid faults
- **Fleet Management**: enabling scalability
- **Affordable**: Based on IoT hardware
- **Logic Loops**: Library of open source control algorithms
- **Easy to Use**: User-driven
The Controller: **UMC** *(Universal Monitor and Control)*
Dashboards: **UMC**  (Universal Monitor and Control)

**Systems Summary**

**Status of the Fleet**
System config
Change set-up parameters
<table>
<thead>
<tr>
<th>Time</th>
<th>Title</th>
<th>Other Information</th>
<th>Type</th>
<th>Controller ID</th>
<th>Subsystem ID</th>
<th>Device</th>
<th>Level</th>
</tr>
</thead>
<tbody>
<tr>
<td>2019-02-20 17:27:12</td>
<td>AC input voltage too low</td>
<td>0.0</td>
<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_1</td>
<td>Alarm</td>
</tr>
<tr>
<td>2019-02-20 17:27:12</td>
<td>Half period RMS voltage limit exceeded, transfer opened</td>
<td>0.0</td>
<td>Device</td>
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<td>Studer01</td>
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<td>Alarm</td>
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<tr>
<td>2019-02-20 17:23:12</td>
<td>AUX1 relay deactivation</td>
<td>0.0</td>
<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_2</td>
<td>Alarm</td>
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<tr>
<td>2019-02-20 17:20:04</td>
<td>AUX1 relay deactivation</td>
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<td>xtender_3</td>
<td>Notification</td>
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<tr>
<td>2019-02-20 15:05:20</td>
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<td>xtender_3</td>
<td>Error</td>
</tr>
<tr>
<td>2019-02-20 15:05:14</td>
<td>Check phase orientation or circuit breakers state on AC-in</td>
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<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_2</td>
<td>Error</td>
</tr>
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<td>2019-02-20 15:05:10</td>
<td>AC Synchronisation in progress</td>
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<td>Device</td>
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<td>xtender_1</td>
<td>Notification</td>
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<tr>
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<td>Delay before closing transfer relay in progress (1380)</td>
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<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_3</td>
<td>Notification</td>
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<tr>
<td>2019-02-20 15:04:04</td>
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<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_2</td>
<td>Alarm</td>
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<tr>
<td>2019-02-20 15:04:04</td>
<td>AUX2 relay activation</td>
<td>0.0</td>
<td>Device</td>
<td>985dad6d6ab9</td>
<td>Studer01</td>
<td>xtender_3</td>
<td>Alarm</td>
</tr>
</tbody>
</table>

**Events page**

List, filter and create notifications from events
Control tools: **UMC** (Universal Monitor and Control)

Control Algorithms
To reduce down-time and increase up-time
Customized alarms
To send actionable information
Local visualization: UMC-vision

Local screen
For visualization and config of main parameters
100+ units deployed
Micro-grid in Mali

Main Specs:

PV array: 75Kwp
System voltage: 48Vdc - 220/380Vac 50Hz
Battery Capacity: 772 Kwh
Combined equipment: SMA and Studer
Remote Control of Lithium Ion based Mobile Off-Grid Power Systems

Allows to drastically reduce generator run-time and provide silent and emission-free power for building sites and event locations

Main Specs:
- Battery Clustering of 16x400Ah Li-ion cells per stack
- No limitation on Battery scalability at 48Vdc
- a variety of different brands and technologies involved
Self-powered water desalination in Colombia

Main specs: 120 litres/h, 7.5 KWp PV, 350 W
Wind turbine, 11.2 Kwh lithium ion with a variety of different brands and technologies involved:

Use Case

Picture: First pilot plant in Colombia

Project story
Project video 1
Project video 2