**Abstract**

Energy poverty is defined as a lack of access to modern energy services. Even though there are initiatives that provide innovative ways to solve this issue, such as the Global Alliance for Clean Cookstoves, these are only short term solutions. Small hydropower, although a strong and viable solution compared to other sources, has economic burdens to the communities who attempt to implement these systems.

**Methodology**

- Researched economics of small hydroelectric projects; looking for information on past projects and for data on a wide variety of sites.
- Researched existing methods for reducing costs of the projects from technical to social areas.
- Looked for possible applications for electricity, such as improvement of cooking, heating and lighting methods.
- Developed way to present our findings; instituted a set of base requirements for the projects being assessed with our solution while focusing on only a few topics.

**Results and Outcomes**

<table>
<thead>
<tr>
<th>Basic Requirements</th>
<th>Participatory Development</th>
<th>Local Materials &amp; Equipment</th>
<th>Existing Infrastructure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Off-grid, electricity deprived locations</td>
<td>Reduces labor costs</td>
<td>Reduces cost of equipment</td>
<td>Reduces cost of civil works</td>
</tr>
<tr>
<td>Minimum Flow: 2 gallons per minute</td>
<td>Provides knowledge of system</td>
<td>Sometimes better efficiency</td>
<td>Less environmental impact</td>
</tr>
<tr>
<td>Maximum Distance: 1 mile</td>
<td>Willingness to learn &amp; volunteer</td>
<td>Hydroelectric systems require civil works for channeling water.</td>
<td>Use existing infrastructure to avoid building new civil works.</td>
</tr>
<tr>
<td>Willingness to learn &amp; volunteer</td>
<td></td>
<td>Irrigation, run-off, drinking water, and waste-water systems channel water.</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion**

We completed a basic prototype with a simple flow chart that focused on a few key aspects. It can be expanded upon to be even more specific. To have our desired product, we looked at specific projects along with their strengths and weaknesses. For the future, this can be used with organizations like Practical Action to provide the community with the opportunity to cut costs. Information can be organized in a multimedia form to best increase knowledge and enthusiasm to cut costs. On a larger scale, this project can help overcome energy poverty by breaking the cycle families are in through improved access to energy and decreased negative economic impacts.

**Project Goals and Objectives**

- Discover more about energy poverty and how broad the issue is.
- Reduce the associated costs with implementing small hydro power.
- Raise the overall standard of living in rural communities.

**References**

