Designing a Sustainable Water System for Remote Communities

The National Renewable Energy Laboratory and the United States Bureau of Reclamation are interested in investigating a sustainable water sourcing option for a remote, reservation-based community. Transporting water to the community is costly and burdensome. As a result, NREL and USBR need a project team to design a well installation that will satisfy the water demands of the community. The project scope will include the design of the well, including pumping and treatment considerations for the community. The project scope will include an evaluation of treatment requirements/strategies and renewable energy options that are available to power the system.

This project will investigate the cost implications of installing and operating the entire system. The project will focus on a specific site, but the scope is not limited to an individual solution. The investigation should include considerations for seasonal fluctuations in renewable energy availability, including storage and non-renewable backup requirements. Designs will be evaluated on a triple bottom line (TBL) basis, i.e., the economic, social and environmental implications of various design alternatives.

Why Students Should Choose this Project:
This project allows students the opportunity to work with representatives from both NREL and the US Bureau of Reclamation on an issue of key importance to remote, underserved communities.

Key Details

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<tr>
<th>Project Principal(s)</th>
<th>Michael E. Walker, Ph.D.</th>
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<tbody>
<tr>
<td>Project Partner</td>
<td>NREL, USBR</td>
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<td>Technical Advisors</td>
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<td>Competition</td>
<td>N/A – Gov’t Partner</td>
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<td>Target Option Tracks</td>
<td>ENC, WAT, EDC</td>
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