Agricultural audits

Jill Eide, Great River Energy
Who is Great River Energy?

- Minnesota’s largest G&T cooperative electric utility
- 2,800 MW of generation assets
- 4,770 miles transmission lines
- 910 employees (MN & ND)
- 28 member-owner distribution cooperatives
- 665,000 services (about 1.7M people)
Generating Capacity

50% X 2030

2005

2032

3,862 MW

Hydro

Renewable

Fuel Oil

Natural Gas
Great River Energy’s conservation programs save an average of 114 million kilowatt-hours every year. That equals the electricity consumption of 12,500 homes.
USDA requirements

Grant Information

- $100,000
- 24 month term or less
- 75%/25% cost share
- Other programs
  - USDA Natural Resources Conservation Service

Definition

Agricultural producer is defined as: "An individual or entity directly engaged in the production of agricultural products, including crops; livestock; forestry products; hydroponics; nursery stock; or aquaculture, whereby 50% or greater of their gross income is derived from those products."
How it works

- GDS partnership
  - Must use GDS to qualify for program funding

**HOW DOES IT WORK?**

**Step 1**
Call 800-441-8525 to verify eligibility and cost.

**Step 2**
Experts conduct a site visit and complete an energy audit that includes an in-depth analysis and recommendations via a comprehensive written, energy management plan.

**Step 3**
If you choose to implement energy efficiency upgrades as a result of the audit, contact your cooperative, as rebates may be available.
## Audit example 1

**Table 1: Summary of Recommended Energy Improvements**

<table>
<thead>
<tr>
<th>Recommended Measure</th>
<th>Estimated Reduction in Energy Use</th>
<th>Estimated Costs, Savings, Payback, and Prioritization for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electric Savings (kWh)</td>
<td>Demand Savings (kW)</td>
</tr>
<tr>
<td>Engine Block Heater</td>
<td>446</td>
<td>-</td>
</tr>
<tr>
<td>Lighting</td>
<td>16,334</td>
<td>5.9</td>
</tr>
<tr>
<td>Livestock Water Fountains</td>
<td>3,000</td>
<td>2</td>
</tr>
</tbody>
</table>
### Audit example 2

#### Table 1: Summary of Recommended Energy Improvements

<table>
<thead>
<tr>
<th>Recommended Measure</th>
<th>Estimated Reduction in Energy Use</th>
<th>Estimated Costs, Savings, Payback, and Prioritization for Implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Electric Savings (kWh)</td>
<td>Demand Savings (kW)</td>
</tr>
<tr>
<td>Engine Block Heaters</td>
<td>5,346</td>
<td>-</td>
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<tr>
<td>Automated Controls</td>
<td>18,043</td>
<td>-</td>
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<tr>
<td>Lighting</td>
<td>121,509</td>
<td>22.8</td>
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<td>Laundry</td>
<td>21,763</td>
<td>5</td>
</tr>
<tr>
<td>Water Heater</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Then what?

Installation rebates

- LED lighting
- Ventilation fans
- VFDs (Irrigators, crop dryers, etc.)
- Engine block timers (new 2019)
- Livestock waterers (new 2019)
- Hog mats
- Diary (plate cooler, robotic milkers, free heater aka RHR, vacuum and milk pump VSDs)
Other important stuff

- Biosecurity precautions
  - Shower in/out
  - Tyvek suits
  - 72 hrs between sites
- Preference to do audits between shipments
Questions?