A LOOK UNDER THE HOOD: WHAT ENERGY MODELING & AUDITING CAN DO FOR YOUR BUILDING OPERATIONS

Rachael Fredrickson | Consumers Energy
Eric DeVries | E3M Solutions
INTRODUCTIONS

Moderator:
Gillian Giem, Program Manager,
Grand Rapids 2030 District

Speakers:
Rachel Fredrickson, Indoor Agriculture Specialist,
Consumers Energy
Eric DeVries, President/ Energy Management Engineer,
E3M Solutions
IT'S HERE!
GRAND RAPIDS CANNABIS ENERGY MANAGEMENT
BEST PRACTICES GUIDE
Information provided in this presentation is based on design experience, guidelines and other sources. It does not represent a professional engineered opinion of E3M Solutions or fully apply to any/all facilities. Each company & building should understand its own requirements for zoning, code compliance and operation.
WHY ENERGY MODELING
WHY ENERGY MODELING

Equipment Design & Selection
Looking at different options for HVAC system to meet temperature & humidity targets in grow spaces

Energy Baseline & Initial Compliance
Establishing as designed benchmark for energy use and/or energy cost per square foot of building
WHAT ARE ENERGY MODELS

Energy Models
Computer simulation with actual construction, equipment sizing, performance, space temps, humidity requirements and other inputs. Performance is simulated against historical weather data

- TRANE Trace
- Carrier HAP
- eQuest Energy
- Others...
ENERGY AUDITS
WHY ENERGY AUDITS

Energy & Cost Savings
One of the most valuable tools in managing and identifying energy and cost savings opportunities/measures

Regulatory Requirement
Required at many levels by local and/or state licensing regulations for planning purposes
ASHRAE ENERGY AUDITS

ASHRAE LEVEL AUDITS
A systematic analysis of energy use and energy consumption within a defined energy audit scope, in order to identify, quantify and report on the opportunities for improved energy performance

ASHRAE LEVEL 1
Walk-through analysis with high level information

ASHRAE LEVEL 2 ★
More detail with actual cost budgets & savings

ASHRAE LEVEL 3
Investment grade analysis focused on long term planning
ENERGY ASSESSMENTS

- Treasure Hunts & Assessments
  There is no 'Set It & Forget It' in regards to a building operation plan.

- Whiteboard Session
  Opportunity that we provide here at E3M to connect people with an Energy Team to start the planning process.
KEY TAKEAWAYS

**Garbage In & Out**
Understanding that effective energy modeling is only achievable with accurate information being input.

**Operational Benefits**
Designing and evaluating your system properly can result in higher yields, maintenance benefits and others.

**Compliance**
Regulatory compliance to receive and maintain your license.

**Cost Savings**
Financial savings and increased profits from improved efficiency.
Consumers Energy
Business Energy Efficiency Program

Rachel Fredrickson
We are Here to Help
Comprehensive Business Incentives

Prescriptive Incentives
• Over 300 measures in total
• 45 measures specific to agriculture

Custom Incentives
• Incentives are determined on a case-by-case basis
• Must be between a 1 and 8 year payback period

Note: Incentives are paid upon project completion and final engineering approval.
How Do I Qualify?

- Consumers Energy business account number (natural gas, electric or combination)
- Federal tax ID number
- New construction projects must be located within our territory and be using Consumers Energy as their energy provider
Incentive Application Process

1. Check Customer and Equipment Eligibility
2. Submit pre-notification application and receive Reservation Letter
3. Install equipment/perform project work
4. Submit a final application
5. Receive Rebate Check
## Incentive Caps and Limits

<table>
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<tr>
<th>Facility Incentives</th>
<th>Cap per Program Year</th>
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<tr>
<td>Prescriptive</td>
<td>75% of the total project cost</td>
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<tr>
<td>Custom</td>
<td>50% of the total project cost</td>
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<table>
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<th>Customer Limits</th>
<th>Cap per Program Year</th>
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<tr>
<td>Large Natural Gas</td>
<td>$1M across all facilities per customer</td>
</tr>
<tr>
<td>Large Electric</td>
<td>$2M across all facilities per customer</td>
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Program Effective Dates

December 1 → November 30
Incentive Resources

ConsumersEnergy.com/startsaving

Business Energy Efficiency

Let’s Save Energy Together

Save energy, earn rebates and create a more comfortable workplace with our variety of energy efficiency solutions built for your business.

Let’s Save Energy Together

Saving energy saves your business money. Discover the many ways your business can save, or tell us a little about your business to find the solutions best suited to you.
Trade Ally Program

• Contractors that have been trained by Consumers Energy on how to use the efficiency program
• Third party payment release
• Find a contractor
• Consumersenergy.com/business/energy-efficiency/select-a-contractor
Additional Specialty Programs

- New Construction
- Buy Michigan Bonus
- Steam Trap Express
- Network Lighting Controls
- Business Instant Discount
- Michigan Saves
Energy Efficiency Success

T REX Enterprises
Energy Efficiency Success

Fluresh
GRAND RAPIDS 2030 DISTRICT
CANNABIS
WEBINAR SERIES

NEXT WEBINAR
COMPARING HPS TO LED LIGHTING SIDE-BY-SIDE IN MICHIGAN INDOOR GROW: WHY LED WON

Please fill out our 2 minute survey at the end of this webinar. Thank you!

Thank you to our Visionary Supporters!