We’ll be starting in just a few minutes….

Visit our **Online Learning Series** page on the Solution Center to see our full series lineup, RSVP, and access previously recorded webinars.
Online Learning Series – Webinar #7
Energy Treasure Hunts with the EPA

Eli Levine
Office of Energy Efficiency and Renewable Energy
Eli Levine
U.S. Department of Energy
<table>
<thead>
<tr>
<th>Webinar Topic</th>
<th>Speaker</th>
<th>Date</th>
<th>Time</th>
<th>Link</th>
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</thead>
<tbody>
<tr>
<td>7. Energy Treasure Hunts with EPA</td>
<td>Alex Floyd (Tyson)</td>
<td>08/20/20</td>
<td>1:00 – 2:00pm EST</td>
<td><a href="#">Register</a></td>
</tr>
<tr>
<td></td>
<td>Walt Brockway (ORNL)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Walt Tunnessen (EPA)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>8. Pumps and Fans</td>
<td>Thomas Wenning (ORNL)</td>
<td>08/27/20</td>
<td>1:00 – 2:30pm EST</td>
<td><a href="#">Register</a></td>
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<tr>
<td>9. Process Heating and Waste Heat Reduction</td>
<td>Sachin Nimbalkar (ORNL)</td>
<td>09/03/20</td>
<td>1:00 – 2:30pm EST</td>
<td><a href="#">Register</a></td>
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<tr>
<td>10. Field Validation</td>
<td>TBD</td>
<td>09/10/20</td>
<td>1:00 – 2:30pm EST</td>
<td><a href="#">Register</a></td>
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<tr>
<td>11. Energy Management During a Pandemic</td>
<td>TBD</td>
<td>09/17/20</td>
<td>1:00 – 2:30pm EST</td>
<td><a href="#">Register</a></td>
</tr>
<tr>
<td>12. MEASUR Tool Suite</td>
<td>Kristina Armstrong (ORNL)</td>
<td>09/24/20</td>
<td>1:00 – 2:00pm EST</td>
<td><a href="#">Register</a></td>
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<tr>
<td>13. Process Cooling</td>
<td>Wei Guo (ORNL)</td>
<td>10/01/20</td>
<td>1:00 – 2:30pm EST</td>
<td><a href="#">Register</a></td>
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</tbody>
</table>
Please go to www.slido.com using your mobile device, or by opening a new window

Enter Event Code

#DOE
Poll #1

Have you hosted a Treasure Hunt before?

Please go to www.slido.com and enter code #DOE to respond
Agenda for Today

1. DOE Treasure Hunts – Overview
2. Treasure Hunt Resources from ENERGY STAR
3. Tyson’s Virtual Treasure Hunts
4. Q&A using Slido
Today’s Presenters

Walt Brockway
Oak Ridge National Laboratory

Walt Tunnessen
U.S. Environmental Protection Agency

Alex Floyd
Tyson Foods
Walt Brockway
Oak Ridge National Laboratory
DOE Treasure Hunt
Treasure Hunt Exchange

A three day training event focused on:

• Learning how to conduct treasure hunts and doing one in your plant
• Four elements DOE brings to treasure hunt exchange:
  • Profiling energy-using equipment
  • Data collection
  • Energy calculators/calculation methods
  • Relevant diagnostic equipment
Advantages of a Treasure Hunt Exchange

• A Treasure Hunt Exchange is both a training and treasure hunt
  • Does not require sophisticated technical analysis
  • Calculations are simple
  • Can be applied by employees of varying disciplines
  • At least one employee will be able to facilitate future treasure hunts

• A three day activity – at completion the facility has sufficient information to execute

• Places a dollar and Btu value on ideas immediately
  • Ideas that employees have generated

• Opportunity ideas are solicited from many disciplines not just technical / engineering
Key Components

Management

Organization

Communications

Execution
Management

Sponsorship – at the corporate level
Sponsorship – at the facility level
Sponsorship – at the department level

Enable employee participation

Encourage innovative ideas and changes

Be present for close out / daily summaries
Communication

Initial call to assure plant is receptive

Invite Attendees

6 weeks

5 – 6 weeks

3 – 4 weeks

2 – 3 weeks

1- 2 weeks

1 week

Gather data from the facility

Get logistics in place

Week before call to assure logistics, timing, etc

Call or web meeting to describe how the process works get initial info – CONTACT PERSONS

Pre TH training call (if needed)

Determine Teams
Organization

- How many participants –
  - from the facility, corporate, sister facilities, outsiders…
- How many teams –
  - What will the teams be
- How many days
- Who is the host
- Who will sponsor the event (Management contact)
- How will discussions be held (Zoom, Teams, etc)
Execution

- Deploy tools as needed (might be ahead of TH)
- MEASUR tool or other means to analyze and present results
  - Download MEASUR software tools to analyze the collected data
- Crowd control – managing the teams
Execution
Execution
# Executive Summary

### Cost Summary

<table>
<thead>
<tr>
<th>Utility</th>
<th>Cost Savings</th>
<th>Implementation Cost</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>$246,326</td>
<td>$240,000</td>
<td>0.05</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>$2,776</td>
<td>$0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$249,102</strong></td>
<td><strong>$240,000</strong></td>
<td><strong>0.05</strong></td>
</tr>
</tbody>
</table>

### Detailed Summary

<table>
<thead>
<tr>
<th>Utility</th>
<th>Current Use</th>
<th>Projected Use</th>
<th>Utility Savings</th>
<th>Current Cost</th>
<th>Projected Cost</th>
<th>Cost Savings</th>
<th>Implementation Cost</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electricity</td>
<td>66,497,543</td>
<td>64,926,601</td>
<td>1,570,942</td>
<td>$3,320,991</td>
<td>$3,030,356</td>
<td>$290,635</td>
<td>$240,000</td>
<td>0.05</td>
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<tr>
<td>Natural Gas</td>
<td>127,439</td>
<td>126,537</td>
<td>962</td>
<td>$391,000</td>
<td>$300,230</td>
<td>$2,770</td>
<td>$0</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$4,711,991</strong></td>
<td><strong>$4,340,486</strong></td>
<td><strong>$393,505</strong></td>
<td><strong>$240,000</strong></td>
<td><strong>$240,000</strong></td>
<td><strong>$2,770</strong></td>
<td><strong>$0</strong></td>
<td><strong>0.05</strong></td>
</tr>
</tbody>
</table>

### Team Summary

<table>
<thead>
<tr>
<th>Team</th>
<th>Cost Savings</th>
<th>Implementation Cost</th>
<th>Payback</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lighting</td>
<td>$25,652</td>
<td>$100,000</td>
<td>3</td>
</tr>
<tr>
<td>Flat</td>
<td>$25,652</td>
<td>$60,000</td>
<td>2.45</td>
</tr>
<tr>
<td>Panel</td>
<td>$2,770</td>
<td>$0</td>
<td>0</td>
</tr>
<tr>
<td>Wall</td>
<td>$2,770</td>
<td>$0</td>
<td>0</td>
</tr>
</tbody>
</table>
Data Gathering Tools – Take measurements for accurate calculations

- **HOBO U12 Data Logger + 600 AMP Split Core Current Transformer**
- **HOBO H22 Energy Logger – Multi Channel Multi Transducer Data Logger**
- **HOBO U12-014 Logger – 0 to 1800 degree thermocouple**
- **Testo 540 Light Meter**
- **Kill-A-Watt 120VAC outlet energy meter**
- **Dickson Pressure Logger**
- **Fluke 345 – Clamp Meter (Power Factor / Energy Logging)**
- **UE Ultrasonic Leak Detector**

[Image of data gathering tools]
Questions / Comments
Poll #2

How familiar are you with ENERGY STAR Treasure Hunt resources

(1 being unfamiliar, 5 being very familiar)?

Please go to www.slido.com and enter code #DOE to respond
Walt Tunnessen
U.S. Environmental Protection Agency
Energy Treasure Hunt Resources from ENERGY STAR

Walt Tunnessen, CEM
ENERGY STAR Industrial Program
US EPA
Background on Energy Treasure Hunts

TOYOTA

Suppliers

Industrial Partners

2008 Great Recession

2014 Guidebook

Hundreds of Industrial Companies

2018 Short Guide, Videos, Treasure Maps, Detail Sheets

2019 Launch Campaign
Energy Treasure Hunt Campaign

FIND THE TREASURE IN YOUR FACILITY

CERTIFICATE OF RECOGNITION

presented to
Kilbourne Plant - Sample Industries
Washington, DC

By the U.S. Environmental Protection Agency in recognition of outstanding achievements in energy management. This award is presented to [Recipient's Name], for exemplary performance in energy conservation and efficiency, contributing to significant reductions in energy consumption and environmental impact. Congratulations!
### 2019 Results

**35 organizations**
**145 Teams & Hunts**
Lost of potential savings!

- Share your findings!
- Any site or organization can participate
- Simple on-line form
- Different options for reporting potential savings
- Help inspire others!
Guidebooks

- Industrial Guide (30+ pages)
- Based on the original Toyota approach

- “Lite” guide (4 pages)
- Geared for buildings
Treasure Maps

- 3 industrial maps
- 14 buildings maps
- Identify common energy savings opportunities
- Helpful for non-energy treasure hunt team members
Details Sheets

- Organize savings from projects & energy savings opportunities
- Available for industrials & commercial buildings
Treasure Hunt Video Collection

Part III: Kicking Off the Hunt

In this video see how Treasure Hunts start off and watch the team at Honda on their first day of hunting for energy treasure!

Great for sharing with plant management and team members who are new to treasure hunts
Treasure Hunts during COVID Tips

▸ Tips taken from companies currently conducting treasure hunts

▸ Virtualization strategies for planning and implementing treasure hunts

▸ Creating on-site & off-teams

▸ Deeper data analysis (aka virtual treasure hunting)

▸ Targeting facilities and systems

www.energystar.gov/treasurehunt
Questions / Comments?

Walt Tunnessen
ENERGY STAR Industrial Program Manager
US EPA

Tunnessen.walt@epa.gov

www.energystar.gov/industrial

www.energystar.gov/treasurehunts
Poll #3

Did you have a Treasure Hunt planned for this year?

Please go to www.slido.com and enter code #DOE to respond
Alex Floyd
Tyson Foods
Feb. 2-4 2020

TOTAL COST SAVINGS

9.40%
Energy Focus
Difficulties During COVID-19

Tyson Foods launches industry-leading strategy to protect our team members from COVID-19
Virtual Energy Treasure Hunt Results

- Less than 1 Year: 91.1%
- 1 to 2 Years: 0.4%
- 2 to 3 Years: 0.0%
- More than 3 Years: 8.4%
Lessons Learned

✓ How To Provide Offsite Team Members Access To Energy Systems

✓ How To Structure Interaction Between Offsite & Onsite Team Members

✓ How To Engage Offsite Team Members Better
My Advice

Take advantage of your resources at ENERGYSTAR® and the Dept. of Energy.
Q & A

Submit Questions
www.slido.com event code #DOE
BETTER BUILDINGS

Better Buildings is an initiative of the U.S. Department of Energy (DOE) designed to improve the lives of the American people by driving leadership in energy innovation. Through Better Buildings, DOE partners with leaders in the public and private sectors to make the nation’s homes, commercial buildings, and industrial plants more energy efficient by accelerating investment and sharing of successful best practices.
ENERGY TREASURE HUNTS WITH EPA
Thr, Aug 20, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

PUMPS AND FANS
Thr, Aug 27, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

PROCESS HEATING & WASTE HEAT RECOVERY
Thr, Sep 3, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

FIELD VALIDATION
Thr, Sep 10, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

ENERGY MANAGEMENT DURING A PANDEMIC
Thr, Sep 17, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

MEASUR TOOL SUITE
Thr, Sep 24, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

PROCESS COOLING
Thr, Oct 1, 2020 | 1:00 - 2:00 PM ET
REGISTER TODAY

BETTER BUILDINGS E-LEARNING CENTER
Additional Questions?

Please Contact Us

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https://betterbuildingssolutioncenter.energy.gov/better-plants

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