Energy Treasure Hunts During COVID-19

The global COVID-19 pandemic creates new challenges and complications for energy programs planning energy treasure hunts. Safety precautions that limit access to facilities and social distancing requirements reduce the team-building and group interactions that make treasure hunts unique. Non-normal operating and production schedules create new complications as well. Yet some organizations are finding ways to adapt their treasure hunts by:

❏ Utilizing virtual meeting platforms to conduct preparation activities, training, the opening presentation, team meetings, and the report out presentation, as well as coordinate the on-site event;

❏ Using smaller teams to investigate target areas, equipment, or systems;

❏ Taking advantage of closed facilities to look more closely at specific systems;

❏ Conducting deeper remote analysis of facility energy use data, when possible; and

❏ Using a combination of on-site and off-site teams to capture and quantify energy-saving opportunities (ESOs).

This tip sheet draws on insights from companies that have adapted their methods of conducting energy treasure hunts. Every energy program will need to assess what is possible given their organization's new safety requirements. For more information and resources on energy treasure hunts, please visit www.energystar.gov/treasurehunt.

1 Determine Virtualization Strategy

Most of the phases and planning steps of the treasure hunt can be done remotely using virtual meeting platforms, as illustrated in the table below.

Phase	Step	Remote	On-site
Preparation	Facility selection and scheduling	●	
	Identify and confirm team members	●	
	Data collection and analysis	●	
	Prepare detail sheets & calculators	●	
	Develop agenda and plan	●	
Pre-hunt training	Meet with team leaders	●	
	Train participants	●	
Treasure hunt event	Opening presentation	●	
	Go & see		●
	Team summaries / Detail sheet work	●	
Prioritize & follow-up	Create implementation plans	●	
	Check-ins / huddles	●	

Many organizations now have a preferred virtual meeting platform. It is important to understand the capabilities and limitations of the system. Additionally:

❏ Ensure all team members have access to, and are familiar with, your organization's virtual meeting platform

❏ Set up a file-sharing platform that can be accessed by all participants

❏ Use shorter but more frequent meetings to help keep members more engaged

❏ Make sure the treasure hunt facilitator has access or is invited to all team meetings and breakout sessions

2 Prescreen Facilities

Some facilities may be better suited for remote and virtual treasure hunting approaches than others. For your first COVID-19 era treasure hunt, consider a facility that has hosted a previous treasure hunt, and has team members who have participated in past treasure hunts or have worked on energy initiatives. Other factors to consider in facility selection include:

- ❏ Availability of facility energy champions with on-site access
- ❏ Approximately normal operating or production conditions
- ❏ Access to historical energy use data from EMS/BMS systems, historians, data loggers, and other sources
- ❏ Remote access to site plans, equipment inventories, and other information on facility systems
- ❏ Availability of site energy action plans, project lists, or past treasure hunt findings

3 Form On-site and Off-site Teams

It's likely that only a limited number of people will be permitted on-site. The on-site teams will serve as the eyes and ears for the treasure hunt. The number of on-site team members and their background will also shape the scope of the treasure hunt. Off-site teams can provide technical and other support for the on-site members, including providing data analysis, filling out detail sheets, and preparing the report out presentation. In forming teams, consider the following:

On-site teams:

- ❏ Identify who can be on-site and any constraints on their time and facility access
- ❏ Gauge the on-site team members' knowledge of specific systems, processes, or facility areas through interviews using your virtual meeting platforms
- ❏ Check the on-site team members' energy management knowledge and experience
- ❏ Determine if additional training is needed for on-site team members
- ❏ Identify what tools the on-site team may need, such as thermal imaging cameras, laptops, etc.
- ❏ Identify real-time video streaming technology, such as mobile phones, that can be used to share observations with the off-site team
- ❏ Create smaller (2-3 person) teams that will be assigned to specific areas, if possible

Off-sites teams:

- ❏ Determine what technical experience is needed to support the on-site teams
- ❏ Identify team members who will help analyze ESOs and complete detail sheets
- ❏ Identify facility staff who can be consulted on specific areas or systems that the on-site team will examine
- ❏ Consider involving vendors and outside experts who can provide expertise on specific systems

Team leaders:

- ❏ Each team will need a leader to coordinate activities
- ❏ Look for team leaders with prior treasure hunt experience, if possible
- ❏ Make sure on-site team leaders have some familiarity with the areas where they are hunting
- ❏ Have the on-site team leaders take responsibility for developing and conducting the report out presentation

4 Conduct Virtual Treasure Hunting Through Equipment Inventory Analysis

Reviewing information on facility equipment, systems, and operating practices can help to identify ESOs or areas to target during the on-site treasure hunt. Use similar facilities within your portfolio as a reference for comparing operating parameters, efficiency improvements, or best practices. To conduct a remote equipment analysis:

- ❏ Develop an inventory of major energy-using equipment and processes at the facility that includes:
  - ● Type, age, controls, and nameplate energy demand/rating
  - ● Operating parameters, equipment schedules, load profiles, and set points
  - ● Energy use data, if available
  - ● Known issues or constraints
  - ● Previously identified ESOs
- ❏ Review equipment inventory to identify inefficient systems (e.g., non-LED lighting) or areas prone to operating inefficiencies (e.g., compressed air systems and leaks)
- ❏ Review set points and operating parameters for inefficiencies
- ❏ Compare best practices and ESOs from similar sites to determine feasibility at target site
- ❏ Identify areas to target during the on-site treasure hunt for more information
- ❏ Evaluate potential ESOs for equipment upgrades or new technologies

5 Conduct Virtual Treasure Hunting Through Data Analysis

With fewer eyes in the facility during the on-site treasure hunt, many organizations are conducting deeper data analysis than in prior treasure hunts. The degree of data analysis depends on the availability and type of energy, operating, and production data. Data analysis can help identify issues and inform where to target treasure hunt activities. Below are some basic data analysis options.

- ❏ Compare current energy use with historical data by system, area, or process
- ❏ Review current set points against efficient set points
- ❏ Review current and past start and stop time schedules
- ❏ Review nonoperational vs. operational energy usage
- ❏ Review 15-minute interval data from utilities, if available
- ❏ Look for unusual peaks, time of day usage, or higher than expected energy use by system
- ❏ Compare energy KPIs to similar facilities or best practice benchmarks
- ❏ Isolate specific processes or building systems to identify issues
- ❏ Use temporary meters to obtain current energy usage of specific equipment
- ❏ Develop a shutdown/reduced operation "minimum load profile"
- ❏ Look for unusual or higher than expected energy use during shutdown/reduced operating hours
- ❏ Review weekend, normal, and shutdown/reduced operation load profiles
- ❏ Compare the facility to other similar facilities also in shutdown/reduced operation

6 Create Target Lists & Treasure Maps

Since the number of people participating in the on-site treasure hunt will likely be small, providing target lists and custom treasure maps can help the on-site teams work efficiently. Lists and maps can also help with planning and coordination for safety precautions by identifying where and when the teams will visit specific areas. To create target lists or custom treasure maps:

❏ Identify and prioritize system or equipment target areas based on earlier analysis

❏ Conduct interviews with facility energy champions to gain better understanding of these systems and discuss potential ESOs by system or process

❏ Determine what additional information or data the on-site teams will need to gather

❏ Develop custom treasure maps to help guide on-site teams to target areas

❏ Conduct pre-hunt meeting with on-site teams to review the agenda and "hunt plan"

7 Coordinate On-site Treasure Hunting

Many aspects of the on-site treasure hunt will be different. The following can help with implementation:

❏ Develop detailed agenda for teams to follow (schedule, locations, responsibilities)

❏ Conduct opening meetings with all teams and participants virtually

❏ Consider scheduling teams to hunt on different days or different times

❏ Coordinate with the facilities safety staff on where and when the on-site teams plan to go

❏ Use phone cameras to take pictures and videos to share with remote team members

❏ Use streaming apps and technology to connect remote participants to the on-site teams to examine equipment and processes

❏ Conduct more frequent check-in meetings with remote members as necessary, depending on the expertise needed

8 Conduct Virtual Treasure Hunt Team Meetings

Because some team members will be remote, and on-site team members may need to stay physically apart, virtual meetings will be necessary. The following can help virtual meetings run smoothly:

❏ Assign a "team meeting captain" to coordinate logistics

❏ Have on-site team members report their findings first

❏ Have remote team members support filling out detail sheets or doing calculations to share the workload

❏ Use video functionality to ensure that teams see each other and are focused on the meeting and not distracted

❏ Be aware that on-site teams may need to revisit certain areas to collect more information, so additional meetings may be needed

❏ Schedule breaks and hold periodic checks to assess what needs to be done and who needs to be involved

❏ Have the treasure hunt facilitator visit the virtual team meetings to ensure everything is going OK

9 Conduct Virtual Report Out Meeting

All treasure hunts conclude with a report out meeting to the facilities' management. Fortunately, this can be done using a virtual meeting platform.

- ❑ Make sure all participants have access to, and are familiar with, the meeting platform
- ❑ Have all team members support the development of their team's presentation
- ❑ Rehearse the full report out presentations using the virtual platform
- ❑ Record the meeting for anyone who might not be available for the meeting or experiences technical issues