

In-Plant Trainings (INPLTs)

INPLTs offered by the U.S. Department of Energy's Better Buildings, Better Plants Program and Challenge are multi-day workshops performed by industry-recognized experts. INPLTs include both classroom and field-based training sessions that train attendees to identify energy conservation opportunities, quantify savings from those opportunities, and implement projects to realize the energy and cost savings. These training workshops enhance attendees' **understanding of working principles, knowledge of best practices, and capability of analyzing the energy performance of industrial energy systems**. As of September 2020, Better Plants has hosted over 140 INPLTs with about 2,400 participants, helping to identify more than \$41 million dollars in energy cost savings opportunities.



Process Heating Virtual In-Plant Trainings (PH VINPLTs)

Due to the challenges created by the COVID-19 pandemic, manufacturers throughout the world have been trying to determine how to safely open and operate their manufacturing plants. To minimize the risk of infection, many manufacturers have reduced the number of people allowed into their plants without compromising production continuity. This makes delivery of INPLTs challenging in the traditional in-person fashion. To address this challenge and continue providing INPLTs during this difficult time, Better Plants piloted Virtual Cohort In-Plant Trainings (VINPLTs) on ammonia industrial refrigeration systems and wastewater treatment operations in October and November of 2020. The VINPLT pilot was very well received and participants requested additional trainings on more topics.

The Better Plants program will deliver a VINPLT on process heating (PH) systems from February 11 to March 25, 2021. The PH VINPLT will be performed by industrial experts and Technical Account Managers using online video communication technologies. The PH VINPLT comprises **seven (7) 2.5 -hour online training sessions** (2-hours formal training and optional 0.5-hour Q&A) that will be delivered **on every Thursday 1:00PM–3:30PM ET for seven (7) consecutive weeks**. Participating in this VINPLT is free and open to all Better Plants partners. This VINPLT event is **limited to 25 participants total from 6–8 companies or facilities**.

Participants will be trained on process heating fundamentals and undertaking of a system-specific energy assessment, including hands-on training on the process heating assessment module within the Manufacturing Energy Assessment Software for Utility Reduction (MEASUR) tool. To maximize the benefits from attending VINPLTs, **homework assignments will be given to the participants at the end of each session and will be due by the next session**. These homework assignments are designed to enhance participants' understanding of the process heating systems, as well as to identify and quantify energy savings opportunities. **During the last session of the VINPLT, participants are expected to create a summary presentation based on their assessment, present their findings, and share the scrubbed version with DOE.**

At the completion of the VINPLT, Professional Development Hours (PDHs) Certificates will be prepared for the attendees upon request. **Participants are expected to collect measurements/data from their own process heating equipment, perform an assessment, and identify energy efficiency opportunities with help from the instructors.** To collect the assessment data, in some cases, diagnostic equipment will be arranged and shipped to the partners. The Better Plants diagnostic equipment are available on a first come, first serve basis.

Process Heating Virtual In-Plant Training Agenda

February 11 to March 25, 2021; Every Thursday 1:00PM–3:30PM ET (2-hour formal training + optional 0.5-hour Q&A)

Week 1 – Process Heating Basics and Introduction to PH VINPLT; Feb 11, 2021

Process heating (PH) experts introduce the rationale for system-specific In-Plant Trainings, describe the overall process of conducting PH VINPLTs, explain the fundamentals of PH systems, and demonstrate the pre-screening process used during the PH INPLTs. VINPLT attendees receive their 1st homework assignment on pre-screening their PH equipment based on annual energy use and energy cost.

Week 2 – PH Assessment Methodology and Hands-on Training on DOE’s MEASUR Tool; Feb 18, 2021

Training experts will provide an overview on PH assessment methodology and demonstrate the PH assessment module within DOE’s Manufacturing Energy Assessment Software for Utility Reduction (MEASUR) tool.

Week 3 – PH Diagnostic Equipment and Data Collection Form; Feb 25, 2021

Training experts will demonstrate the diagnostic equipment used during PH assessments and discuss the PH data collection form. VINPLT attendees receive their 2nd homework assignment on collecting baseline assessment data for the selected PH system identified during the pre-screening step.

Week 4 – Energy Efficiency Opportunities in Process Heating Systems; Mar 4, 2021

Training experts and VINPLT attendees review the baseline assessment data for the selected PH systems identified for the demonstration assessments. Participants provide an overview on their baseline models. The experts present various methods of energy-saving measures and their applicability for the industrial PH equipment. VINPLT attendees receive their 3rd homework assignment on creating modified models within the MEASUR tool and send data files to the instructors.

Week 5 – Assessment and Analysis of MEASUR Data for Finding Opportunities; Mar 11, 2021

Training experts discuss waste heat reduction, recycle, and recovery technologies. VINPLT attendees provide overview on their modified models and review their what-if analysis and results with the PH experts. VINPLT attendees discuss the energy saving measures and their effect on energy use, present and discuss the results to the group, and complete the energy assessment by evaluating the results. VINPLT attendees receive their 4th homework assignment on creating PowerPoint slides summarizing the outcomes from PH VINPLT.

Week 6 – Process Heating VINPLT Results Discussion and Review of Final Presentations; Mar 18, 2021

With assistance from process heating experts, VINPLT attendees finalize their PH assessments within the MEASUR tool. VINPLT attendees discuss and review their results slides with assistance from PH experts. VINPLT attendees receive their 5th homework assignment on finalizing their power point slides summarizing the outcomes from PH VINPLT.

Week 7 – Process Heating VINPLT Wrap-up Presentations; Mar 25, 2021

VINPLT attendees present and discuss the results from their virtual PH assessment and complete the VINPLT by evaluating the results. VINPLT participants can invite their upper management to attend the wrap-up session. Once completed, VINPLT attendees are given a Certification of Completion from the US DOE.