Pacific Northwest
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PNNL-32286

Retro-Commissioning Sensor Suitcase for Energy Efficiency

CRADA 479 (PNNL 75973)

November 2021

Michael Brambley

Lawrence Berkeley National Laboratory (LBNL)

GreenPath Energy Solutions

U.S. DEPARTMENT OF ENERGY

Prepared for the U.S. Department of Energy
under Contract DE-AC05-76RL01830

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Abstract

This project will enable Pacific Northwest National Laboratory (PNNL) and Lawrence Berkeley National Laboratory (LBNL) to work with industry partner, GreenPath Energy Solutions, joint developers of the Suitcase, to enhance the capabilities and usability of the Retro-Commissioning Sensor Suitcase (hereinafter the Sensor Suitcase or Suitcase), assisting GreenPath to take the Suitcase to market and rapidly expand their market share. The proposed project will specifically focus on 1) adding sensors types to extend the data collection capability and support more building and equipment performance metrics and identification of even more energy saving opportunities, 2) developing algorithms to identify recommendations for the new energy savings opportunities from item 1 and to prototype software modifications implementing them, 3) validating the use of vibration sensors to detect the operating state of a broader set of packaged HVAC equipment (additional capacities, different numbers of stages, etc.) than tested in initial development and modifying the state algorithm and software code, as needed, 4) improving cost-effectiveness in manufacturing the Sensor Suitcase, and 5) additional field testing of the technology in real buildings to more comprehensively validate Suitcase performance and to guide refinement of its capabilities. Project results will position GreenPath, and potential future licensees, to implement the new capabilities developed in this project in GreenPath's RCx Building Suitcase, increasing its functionality and the savings resulting from its use. These enhancements will increase the value of the Suitcase to users and increase the potential market for its use and impacts.

Pacific Northwest National Laboratory

902 Battelle Boulevard
P.O. Box 999
Richland, WA 99354
1-888-375-PNNL (7665)

www.pnnl.gov