AXIS for Utilities
BPA Single-Family Performance Path Program

Updated July 10, 2017

Overview

The AXIS database is a cloud-based data collection and workflow management platform that allows energy rating data to be shared between Northwest Raters/Verifiers and utilities participating in residential new construction programs. AXIS enables operational efficiencies and transparency for energy efficiency program administrators, participants and evaluators. In addition to supporting the RESNET® energy rating protocols, the modular architecture of AXIS allows for customization of functionality, visibility and workflows to meet program-specific needs.

AXIS is hosted by Pivotal Energy Solutions (Pivotal) and is licensed for use by NEEA. NEEA's overarching licensing agreement provides Rater/Verifier, Provider, and Utility partners access to AXIS at no cost. All database users are provided unique logins under a company profile and can access only the data the company profile is associated with. Data visibility is unique to each company type (i.e. Utilities have visibility to some data that is not visible to Raters/Verifiers).

NEEA partnered with Pivotal to use AXIS for the Northwest ENERGY STAR Homes program and for homes participating in NEEA's Next Step Homes pilot. Energy Trust of Oregon uses AXIS for its EPS™ for New Homes program. In partnership with BPA, AXIS is now required for data collection and utility reporting for the BPA Single-Family Performance Path Program.

Getting Started

All utilities across the Northwest have a company profile in AXIS. Utilities can manage their company profile information (e.g. phone, address) and users. Visit https://neea.pivotalenergy.net/ to log in.

If you are new to AXIS and need a login, email Neil Grigsby @ NEEA.

Data Structure

AXIS is architected to collect data via a "program" and Raters/Verifiers are responsible for data entry. There are many programs available in AXIS (e.g., ENERGY STAR, Built Green, Utility Incentive, etc.) and each have unique data collection and workflow requirements. Programs may contain REM/*Rate* data, in-system checklist questions, other data entry fields, calculators, QA, and notifications.

For the BPA Single-Family Performance Path, the AXIS database program is named:

Utility Incentive V2 – Single Family Performance Path

This program is set up as a region-wide core offering for partners across the Northwest. This program contains two calculators:

1. RTF Standard Protocol with NEEA adjustments and additions to generate % improvement over code and the kWh/Therm savings

2. BPA Measure-life to split the kWh savings into the appropriate measure-life buckets and generate total $$ reimbursement from BPA to the BPA customer utility

Each entry in AXIS creates a unique home record that is assigned a Site ID. Data for homes is available to review from the Utility Reports page using various methods (see Reports section for more detail):
- Navigating to each record's in-system Home Detail Page (single home)
- Downloading the Home Detail PDF report (single home)
- Exporting to an Excel report (single or multiple homes)

AXIS Data Workflow: Utility Incentive V2 – Single Family Performance Path

1. Raters/Verifiers create the home record in AXIS, attach the program, upload their REM/*Rate* model, and complete the minimum required data entry. The program contains other data entry fields which are optional.
   a. Home creation and data entry may also be completed using a bulk upload template; this method is used for larger subdivisions and production builders.

2. Upon completing the minimum required data entry in AXIS, the calculators run in the background to provide real-time results.
   a. Standard Protocol results are visible to Raters/Verifiers and Utilities and displayed on the Home Detail Page and in reports. Results include:
      i. kWh and Therm savings for:

Heating & Cooling	Water Heater	Lighting
Smart Thermostat	Low Flow Shower Heads	Appliances

      ii. Total Annual savings in kWh, Therms and MMBtu
      iii. Total Improvement (% improvement from baseline)
   b. BPA results are not visible to Raters/Verifiers, only to Utilities. Full results of the BPA calculator are available through the BPA Report on the Utility Reports page. The total $$ BPA reimbursement to utilities is displayed for each home on the Home Detail Page, which is only visible to utilities.
   c. NEEA and QA company profiles have additional visibility into the back-end of the calculators to review all inputs and calculations.
   d. In-system validations will check for minimum regional participation, modeling, and savings requirements (i.e. home must be at least 10% improvement).
      i. The validations will flag errors and gate the home record from moving along until the Rater/Verifier makes corrections.

3. If the initial REM/*Rate* model added to the home record was preliminary, Rater/Verifier will upload a final REM/*Rate* model to the home record in AXIS once field testing is complete. The calculators and results will update.

4. Rater/Verifier completes any remaining data entry and uploads documents that are applicable to the home and/or utility.

5. Rater/Verifier submits the home record for File QA review. A notification is sent to the QA profile.
   a. The BetterBuiltNW technical team is assigned to review home records on behalf of all utilities as a support to new program start up.

          i.   The BetterBuiltNW technical team's QA company profile in AXIS is named CLEAResult-QA (NEEA)

    b.   There is flexibility to assign a different QA profile/organization per utility (e.g. Utility A performs their own QA, while BetterBuiltNW technical team performs QA for Utility B).

    c.   100% of homes participating in this program are gated from auto-finalizing in AXIS, although not every home requires a formal documented File QA review.

6. File QA is intended to limit modeling errors that may result in inaccurate savings estimates. File QA provides a training opportunity for Raters/Verifiers to increase their proficiency in modeling and compliance for utility programs.

    a.   If QA review finds an issue, they will add the QA module to the home record in AXIS, mark "corrections required" and send the record back to the Rater/Verifier for corrections.

          i.   The Rater/Verifier will receive notification, make corrections, then send the record back to QA. QA will receive notification and complete a second review. This back and forth may continue until QA deems all requested corrections are resolved, which they will indicate by marking "QA pass" and clicking the "certify" button.

         ii.   All interactions between the Rater/Verifier and QA are documented and timestamped.

    b.   If there are no issues with the home record, QA will finalize the record by clicking the "certify" button.

          i.   A QA module may or may not be added; if added for documentation purposes, simply mark "QA Pass", then click the certify button. If the QA module is not added, just click the certify button.

    c.   The term "certify" must be interpreted for this program to mean "final". These are not certifications in the same sense as a Home Certification Program like ENERGY STAR.

7. When the home record is certified/finalized after QA, it is locked for edits, and the savings and % improvement are deemed final. The Rater/Verifier and Utility will receive notification.

    a.   In the future, there may be an incentive tracking module add-on allowing utilities greater oversight and interaction with AXIS. When the incentive tracking module is deployed, homes will move from "certified" by QA review to incentive tracking with status' like "incentive pending" and "incentive approved". This will provide utilities a final approval step and additional transparency to the Rater/Verifier for tracking when incentives are officially approved by the utility. See the Flexible Options section for more info.

8. Utility generates the necessary reports from the Utility Reports page in AXIS.

9. Utility work the Rater/Verifier and/or Builder to complete any additional incentive requirements (i.e. submit copy of ENERGY STAR or Built Green certificate).

    a.   Reminder: Documents may be uploaded by Raters/Verifiers to the AXIS records, which utilities are then able to download.

    b.   It is utility determination on whether documents are required to be uploaded to AXIS.

10. Utility approves and issues incentive checks to Rater/Verifier and/or Builder via their own systems.

    a.   AXIS is not set up to generate actual incentive checks.

    b.   If the incentive tracking module is deployed in the future, utilities will mark "Incentive Approved" (or similar) on the AXIS record as a final step.

Reporting

The Utility Reports page in AXIS is specific to utilities and contains four reporting options. After logging in, this page is accessed by selecting the Reports menu option, then clicking "NEEA Utility Report". This page contains a table of homes and various filter options to drill down to a specific home or group of homes. There is an AXIS Support Resource that provides more detail on navigating the Utility Reports page and steps to generate reports.

The four report options are:
1. Home Detail - PDF
    a. One report per home
    b. Surfaces select program data
    c. This report is generated in standard format (same format across all programs in AXIS).
    d. In the future, there may be a secondary market-facing PDF report that is more customized including branding and visuals.

2. Raw Data – Excel
    a. One home per row, multiple homes in report
    b. Up to 400+ data points (e.g. latitude/longitude, full QA results, full REM/*Rate* file inputs & outputs)

3. NEEA Utility Report – Excel
    a. One home per row, multiple homes in report
    b. About 40 data points; Pre-selected data providing a streamlined summary of home characteristics

4. BPA Utility Report – Excel
    a. One home per row, multiple homes in report
    b. Exact data requested by BPA; to be used by BPA customer utilities for BPA submittal and utility reimbursement
    c. Surfaces the measure-life kWh savings breakdown, the claimable busbar savings, and BPA reimbursement $$ per project

Flexible Options and Future Developments as of July 2017

1. Utility in the role of the Rater/Verifier
    a. Utilities may be provided a Rater profile if they are acting as the Rater/Verifier for their program. The Rater profile must be used for all data entry and QA interactions.
    b. This is available now. Let Neil Grigsby know if you are interested in performing the Rater/Verifier functions for your program.

2. Utility in the role of QA
    a. Utilities may be provided a QA company profile if they are interested in completing the file QA and other QA items themselves. The QA profile must be used for all QA purposes.
    b. Let Neil Grigsby know if you are interested in performing QA for your program.

3. Market-facing PDF Home Report

    a. This will be a customized market-facing, BetterBuiltNW and/or Utility branded 1 pg PDF report that may be generated for each home.

    b. This is tentatively scheduled for launch and inclusion in Utility Incentive V2 – Single Family Performance Path program by October 2017.

4. Incentive tracking module add-on

    a. The incentive tracking module may be used to provide utilities with the ultimate final approval step in AXIS. Some utility feedback indicated that by having the BetterBuiltNW technical team finalize the home's savings and % improvement, Raters/Verifiers may think this also approves the incentive issued by utilities.

        i. This is not the case and is highlighted in Rater/Verifier training.

        ii. The BetterBuiltNW technical team is finalizing only the savings and % improvement, not the utility incentive to the Rater/Verifier and/or Builder.

    b. By using the incentive tracking module, the home record will move after it is finalized by the BetterBuiltNW technical team to an incentive processing workflow with statuses like "incentive pending" and "incentive approved" which will allow the Utility to filter for homes in a particular status and track progress of incentive processing. Home records will remain in the "incentive pending" status until the Utility processes the incentive and then marks "incentive approved" in AXIS. The Utility will have the ability to request information or changes to the home recorded by the Rater/Verifier, utilizing AXIS notifications. Marking the "incentive approved" in AXIS will act as the utility's final approval step while providing transparency to the Rater/Verifier when incentives are officially approved by the utility and allow tracking of actual utility incentive payments to Rater/Verifier and/or Builder.

    c. This feature and functionality is in review and additional utility feedback will help drive development. Let Neil Grigsby know if you are interested in leveraging or incorporating this type of feature for your program.

5. Enhanced Program Metrics

    a. Feedback from some utilities has indicated interest for more metrics on program homes and participating Raters/Verifiers and/or Builders. Some ideas include a partner leaderboard, a list of top measures installed, savings to date, and more graphical elements like charts and graphs.

    b. Additional utility feedback will help drive development. Let Neil Grigsby know what type of metrics you are interested in for your program.

6. Connections from AXIS to internal systems

    a. AXIS is a cloud-based system that may be connected to other databases or systems via API or other methods. NEEA, BetterBuiltNW and the Pivotal teams can work with utilities on database connections to facilitate secure and automated data transfers.

7. Reports

    a. Custom AXIS reports are an option (Excel and PDF). NEEA, BetterBuiltNW and the Pivotal teams can work with utilities on creating custom reports.