Better Buildings®
U.S. DEPARTMENT OF ENERGY

Fact Sheet

HOME UPGRADE PROGRAM ACCELERATOR

The **Better Buildings Initiative** is a national leadership initiative calling on state and local officials, corporate chief executive officers, university presidents, utilities, and other leaders to make substantial commitments to improve the energy efficiency of their buildings and plants, save money, and increase competitiveness. The U.S. Department of Energy (DOE) is expanding this initiative to engage leaders in a set of **Better Buildings Accelerators** designed to demonstrate specific innovative approaches, which, upon successful demonstration, will further accelerate investment in energy efficiency across our homes, buildings, and industrial facilities.

The **Home Upgrade Program Accelerator** is designed to help home energy upgrade programs bring services to more homes across the country by leveraging data management strategies that minimize costs while improving overall program effectiveness. These programs are currently completing hundreds of thousands of home upgrades annually with average savings of 20% for participating households. By improving the processes programs use to manage and track home upgrades, review the quality of work, and evaluate savings and other impacts, programs can scale up to reach goals of completing millions of home energy upgrades annually. Partners in the Accelerator are administrators of energy efficiency programs who will demonstrate a range of best practices to minimize program costs while improving and expanding program savings, including through the use of information technology and adoption of common data standards to streamline data exchange, among other approaches. Key collaborators may include developers of program management and home energy assessment software that implement common data standards to streamline data exchange. The **Home Upgrade Program Accelerator** aims to significantly reduce administrative program costs and increase overall program cost-effectiveness from May 2015 to May 2018 and to share approaches and technical solutions with the greatest impact.

Accelerator Goals:

- Demonstrate and document significant reductions in administrative costs associated with home energy upgrade data collection and review.
- Demonstrate successful data management strategies, including implementation of HPXML associated with at least 25% of home energy upgrades nationally.
- Demonstrate additional approaches for reducing program administrative costs while expanding completion of home energy upgrades and overall energy savings.
- Share information and resources to improve data collection and transfer to help reduce program administration costs broadly across home energy upgrade programs.

Why Are Home Energy Upgrade Data Costs Important?

Over 115 million households in the U.S. are responsible for 22% of the total U.S. energy consumption and over a billion metric tons of carbon emissions, and a typical household spends over $2,000 on annual energy bills. Reducing the energy consumption of households by 20% is achievable today with existing technologies, but today's administrative processes for home energy upgrade programs are one of the challenges that limit expanded market activity. Opportunities to reduce administrative time and cost include streamlining current processes, improving data collection and transfer, and adopting best practices of peers.

Accelerator Partners are working to help increase the number of upgrades by minimizing the administrative time and cost associated with completing each home energy upgrade while still ensuring the same level of quality. A key focus of Partners will be improving the data collection process. Home energy upgrade data collection is a necessary administrative process to provide energy performance information to homeowners, and more broadly, the housing market. Information about a home is collected during a home energy assessment and entered into software used to propose energy efficiency upgrades, estimate energy savings, or calculate an energy efficiency rating or score.

The development of a *Standard for Home Performance-Related Data Transfer* –informally known as HPXML-- makes possible the exchange of information between multiple actors in the home performance industry through the use of an extensible mark-up language (XML). HPXML was created to achieve three goals critical for growth of home energy upgrades:

- Standardize terminology and facilitate the collection of higher quality data as a means to track and quantify the work being completed across the residential energy-efficiency industry.
- Create interoperability between software systems to allow the transfer of home performance data across a diverse set of market actors.
- Improve industry efficiency by reducing the costs of data collection and exchange between market actors.

Some home energy upgrade programs have started adopting HPXML, and the standard is helping to reduce transactional costs associated with collecting and transferring data by making communication between systems easier. For example, Arizona Public Service estimates that implementing a standardized HPXML data system decreased the time needed to complete a desk quality assurance review of an upgrade by 50%. Benefits included:

- Improved data consistency
- Faster quality assurance review
- Faster project approvals for contractors
- Contractor selection of modeling software instead of single program-required software (reduces training costs and technical support needs)

Benefits to Accelerator Partners

- **Help your organization implement HPXML and other process improvements**

  A growing body of experience from implementing HPXML and other process improvements will be shared to enable successful rollout strategies and common mistakes to avoid. The use of HPXML to improve multiple administrative processes will be explored.

- **Reduce program cost and enhance effectiveness**

  By improving the consistency of home energy upgrade data collection and transfer and other process improvements, program administrators can reduce the time and cost to manage data quality enabling them to enhance their program's effectiveness and reach more homes.

- **Improve participating contractor satisfaction**

  Data collection and transfer to programs represents a significant time and cost burden to contractors and is a barrier to their participation in home energy upgrade programs. Integration of HPXML for contractor-used software presents an opportunity for substantially reducing contractors' administrative burden, enhancing the program-contractor partnership and allowing for expanded reach.

- **Receive public recognition from DOE as a home performance leader**

  Receive national recognition from DOE for demonstrating your commitment to implement HPXML and other practices to reduce administrative burden and costs associated with data collection and transfer for home performance data.

DOE Commitment to Accelerator Partners

- **Appoint** a DOE point of contact for each partnership.
- **Facilitate** the development of best practice approaches in collaboration with Accelerator Partners, including publicizing successful projects, developing additional use cases for HPXML with Partners, and sharing methods for estimating cost reductions.
- **Share information** and provide technical assistance (webinars and tailored training) on successful approaches to improve data quality and reduce home energy upgrade program data costs.
- **Develop Resources** to help Accelerator Partners reduce the time to implement HPXML and other approaches to reduce administrative costs.
- **Provide public recognition** of Accelerator Partners for achieving milestones and commitments.

Accelerator Partner Commitment

- **Appoint** an Accelerator partnership lead.
- **Pledge** to implement HPXML and other practices to reduce the administrative burden of collecting home energy upgrade data over the next three years.
- **Work** with DOE to identify one or more barriers to implementing HPXML or executing other opportunities for process improvements to reduce administrative costs or improve quality assurance in home upgrade programs within 4 months of joining; and work with DOE and other Accelerator Partners to implement solutions within 36 months.
- **Participate** in technical assistance and/or peer sharing forums.
- **Share** materials, results, and lessons learned from their innovative approaches.
- **Report** on progress towards the goal annually including providing information on program administration costs and progress in reducing those costs.

For More Information:

Building America Top Innovation: HPXML: A Standardized Home Performance Data Sharing System: http://apps1.eere.energy.gov/buildings/publications/pdfs/building_america/ba_innovations_4-3-11_nrel_hpxml.pdf

BPI-2100-S-2013 Standard for Home Performance-Related Data Transfer v2.1.0.

BPI-2100 is designed to facilitate communication and the exchange of information and data among all actors in the home performance industry by providing an extensible mark-up language (XML) standard for transferring information related to whole-house energy efficiency upgrades. The standard is informally known as Home Performance XML, or HPXML. http://www.bpi.org/files/pdf/BPI-2100-S-2013%20Standard%20for%20Home%20Performance-Related%20Data%20Transfer%20v2.1.0.pdf

BPI-2200-S-2013 Standard for Home Performance-Related Data Collection v2.1.0.

BPI-2100 is a companion standard to BPI-2200 (Standard for Home Performance-Related Data Collection). Each of the data elements defined in BPI-2200 can be transferred via HPXML. http://www.bpi.org/files/pdf/BPI-2200-S-2013%20Standard%20for%20Home%20Performance-Related%20Data%20Collection%20v2.1.0.pdf

HPXML Implementations Guide www.energystar.gov/hpxml