HPXML:

THE VALUE OF OPEN DATA STANDARDS FOR RESIDENTIAL ENERGY EFFICIENCY

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HOME PERFORMANCE COALITION

National nonprofit that promotes the market transformation of residential energy efficiency through research and education

- Supporting interoperability and reducing program costs through the development of national data standards

- Making the value of energy efficient homes visible in the real estate transaction

- Reforming cost-effectiveness screening practices

- Finding intersections between smart grid technologies and home performance

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WHAT IS HPXML?

An open data standard that makes it easier and less expensive to exchange home energy data among information trading partners

HOME PERFORMANCE EXTENSIBLE MARKUP LANGUAGE

DATA DICTIONARY

BPI-2200-S-2018 (v2.2)

- Standard definitions and data formats of terms used to describe residential buildings, EE & RE features and systems, and energy performance

- Aligned with DOE BEDES

- Aligned with RESO (forthcoming 2019)

TRANSFER PROTOCOL

BPI-2100-S-2018 (v2.2)

- Standard eXtensible Markup Language (XML) data transfer protocol

- Used to transfer data defined in the Data Dictionary between different software systems

- HPXML is the most widely used implementation of residential BEDES

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BENEFITS OF HPXML FOR HOME PERFORMANCE

INDUSTRY EFFICIENCY

Reduce data collection, management, and migration costs by minimizing the need for customized IT systems and tools

INTEROPERABILITY

Promote the efficient exchange of information among stakeholders regardless of geographic, vendor, or organizational boundaries

HIGH QUALITY RESEARCH

Standardize terminology and facilitate the collection of higher quality data as a means of tracking and quantifying work being completed across the residential energy efficiency industry

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OPEN SOURCE DEVELOPMENT AND MANAGEMENT

- Building Performance Institute (BPI) data standard that can be freely accessed, adopted, and approved upon

- 60+ member companies in software, utility, government, and contracting industries voluntarily invest in the development and use of HPXML

- Recommended updates go through an approval process set by the BPI to ensure decisions about HPXML's development are collaborative and consensus based

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MARKET ADOPTION

HPXML is being used nationally by 22 software companies to transfer home performance data from contractors to public and private sector organizations

SOFTWARE ADOPTION OF HPXML

AjO*	Home Energy Score (DOE)
Auditor (Energy Design Systems)	JAI Software (ECOS)*
BEopt (NREL)	National Energy Audit Tool (DOE)*
Build It Green	Open Energy Efficiency
CakeSystems	OptiMiser
EarthCraft (Southface)*	Pearl Home Certification
energyOrbit	Pivotal Energy Solutions*
EnergySavvy	REM/RateTM*
ENERGY STAR Home Advisor	Standard Energy Efficiency Database (DOE)
Green Building Registry (Earth Advantage)	TREAT (Performance Systems Development)
GreenPro (Dr. Energy Saver)	SEALED
Hancock Software	SnuggPro (SnuggHome)

* Planned or in process

USE CASE: IMPROVING HOME PERFORMANCE

Arizona Public Service

Austin Energy

Build It Green

Efficiency Vermont

NYSERDA

PG&E

PSEG Long Island

Salt River Project

San Diego Gas & Electric

SoCalGas

Southern California Edison

United Illuminating

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USE CASE: IMPROVING HOME PERFORMANCE

- 50% decrease in quality assurance administrative labor for Arizona Home Performance with ENERGY STAR®

- 31% decrease per project in administrative labor for Arizona home performance contractors

- Time to approve 90% of NYSERDA Home Performance with ENERGY STAR® projects was reduced from 8 days to <1 hour

- Leverage investment in HPXML to provide Home Energy Score functionality with minimum software development cost with the HEScore Translator

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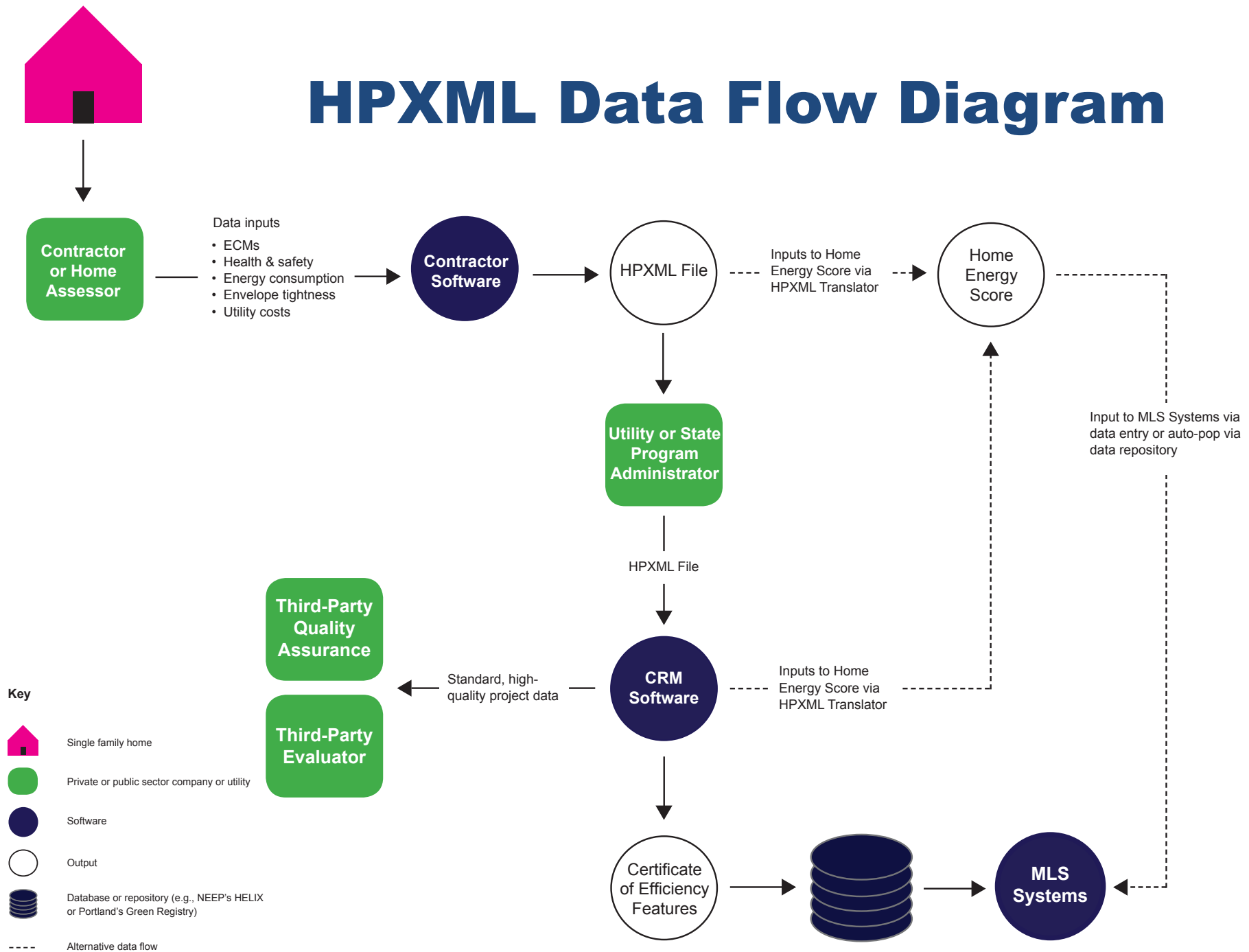# USE CASE: CREATING VALUE FOR ENERGY EFFICIENCY

BPI-2101-S-2013 Standard Requirements for a Certificate of Residential Energy Efficiency Features and Performance

- Establishes requirements for issuing certificates that document a home's existing energy efficient features and performance.

- Information on certificates must be verified by an entity independent of the installer or contractor that performed the work.

- Aligns HPXML with terms defined in RESO and Appraisal Institute's Residential and Green Energy Efficient Addendum

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VALUE OF STANDARDIZATION IN REAL ESTATE TRANSACTIONS

- Provide homebuyers with access to consistent, comparable information about energy efficiency features in existing homes

- Enhance value of energy efficient homes with a nationally-recognized protocol that can be used to document energy features and performance

- Improve the transparency and consistency of how data is presented to real estate agents, appraisers, and underwriters

- Facilitate the flow of information about a home's energy features from a program into the real estate value chain

- Facilitate the collection of high-quality data for research purposes

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HPXML Data Flow Diagram

Contractor or Home Assessor

Data inputs
- ECMs
- Health & safety
- Energy consumption
- Envelope tightness
- Utility costs

Contractor Software

HPXML File

Inputs to Home Energy Score via HPXML Translator

Home Energy Score

Input to MLS Systems via data entry or auto-pop via data repository

Utility or State Program Administrator

HPXML File

Third-Party Quality Assurance

Third-Party Evaluator

Standard, high-quality project data

CRM Software

Inputs to Home Energy Score via HPXML Translator

Certificate of Efficiency Features

MLS Systems

Key

- Single family home
- Private or public sector company or utility
- Software
- Output
- Database or repository (e.g., NEEP's HELIX or Portland's Green Registry)
- ---- Alternative data flow

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TOOLS AND RESOURCES

GET STARTED

FOR DEVELOPERS

- Github.com/hpxmlwg

- HPXML Validator

- Implementation Guide

- Technical Documentation

FOR ADMINISTRATORS

- Data Dictionary

- Data Selection Tool

- Implementation Guide

- Case Studies

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WANT MORE INFORMATION?

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