

Early Insights from the Nation's First Home Energy Rebates Evaluation

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ABSTRACT

Wisconsin was among the first states to launch both the Home Efficiency Rebates (HOMES) and Home Electrification and Appliance Rebates (HEAR) through the U.S. DOE Home Energy Rebates (HER) program. This paper presents results from the nation's first third-party evaluation of these programs¹, offering timely lessons for states moving from planning to implementation. The impact and process evaluations cover both programs, using contractor interviews, participant surveys, tracking data, and desk reviews of BPI-2400 compliant energy models.

By December 2025, the program had reached 933 unique HOMES households and 413 HEAR households, disbursed approximately \$2.37 million in HOMES incentives, and was supported by a network of 63 HOMES-registered and 76 HEAR-registered contractors. Early outcomes are positive across all three evaluation dimensions. Participant satisfaction was high; 80 to 100 percent of HOMES participants found the Energy Assessment Report useful, and no HEAR participants reported being dissatisfied with the program. The programs are also reaching their target populations; 85 percent of HOMES improvement rebates went to households below 80 percent of area median income, and Disadvantaged Community households accounted for 15 percent of HEAR air-source heat pump (ASHP) installations, early indicators of success on equity goals. HEAR installations delivered substantial greenhouse gas savings (GHG), with ductless ASHPs leading at 22.2 tons of GHG savings per unit and the portfolio totaling 6,649 tons of GHG reductions and 135,532 therms of fossil fuel displacement, alongside nuanced electricity-bill and health-benefit tradeoffs from fuel switching. As expected in the launch of a federally funded program layered on top of established state offerings, contractors reported a learning curve adapting to new IRA-specific rules that differ from familiar Focus on Energy processes. Over half of HOMES contractors learned new modeling software, and HEAR contractors flagged areas where additional documentation guidance and multifamily training would accelerate their effectiveness. The HOMES energy model review also identified a small number of recurring modeling inconsistencies, most notably a vendor software issue affecting conditioned floor area calculations, that the program is well-positioned to address through targeted training and routine quality assurance.

Beyond presenting the first empirical results from IRA HER programs, this paper offers actionable insights for states refining contractor engagement and participation strategies, advancing both affordability and equitable electrification objectives.

Introduction

In 2022, the Inflation Reduction Act (IRA) established two landmark residential energy efficiency programs: the Home Efficiency Rebates (HOMES) program and the Home Electrification and Appliance Rebates (HEAR) program, with a combined federal appropriation

¹ Findings presented in this paper draw on preliminary evaluation results that are subject to further review and refinement; final evaluation reports are forthcoming (Cadmus Group 2025, 2026).

of \$8.8 billion. HOMES provides performance-based rebates for whole-home energy efficiency improvements modeled to achieve at least 20 percent savings; HEAR provides point-of-sale rebates for specific high-efficiency electrification measures including heat pump heating, cooling, and ventilation (HVAC) systems, heat pump water heaters (HPWH), induction cooking, and heat pump clothes dryers (HPCD).

Wisconsin was among the first states to launch both programs, beginning implementation in early 2024 through Focus on Energy, the statewide energy efficiency program. As more states move from planning to implementation, early empirical evidence from Wisconsin's experience provides timely and replicable lessons.

This paper presents results from the nation's first third-party evaluation of IRA Home Energy Rebate (HER) programs, covering evaluation activities conducted from fall 2024 through late 2025. The evaluation team, Cadmus, conducted contractor interviews, participant surveys, program tracking data analysis, and desk review of BPI-2400 compliant energy modeling files. This paper synthesizes findings across both programs, with particular attention to contractor experience, participant outcomes, energy model accuracy, and equity considerations. The paper focuses primarily on single-family program results, which represent most of the participation to date; multifamily findings are discussed where relevant but are expected to be addressed more fully in future evaluations as the multifamily pilot matures.

The paper proceeds as follows. We first describe program context and the evaluation design. Process evaluation findings covering both HOMES contractor interviews and HOMES/HEAR participant surveys follow. We then present impact evaluation results, including tracking data summaries and energy model review findings for HOMES, and measure-level savings and bill impact results for HEAR. We conclude with key findings, recommendations, and reflections on the lessons Wisconsin's experience holds for other states.

Program Context

HOMES Program

Unlike Focus on Energy's longstanding state-funded efficiency programs, HOMES is administered through Focus on Energy under new federal U.S. Department of Energy (DOE) IRA requirements. This federal layer introduces additional eligibility, documentation, and reporting obligations that contractors and participants must navigate alongside Focus on Energy's established processes. Wisconsin's HOMES program provides performance-based rebates to households that achieve whole-home modeled energy savings of at least 20 percent. Two rebate tiers exist: a lower tier for projects achieving 20 to 34 percent modeled savings, and a higher tier for projects achieving 35 percent or more. Within each tier, incentive amounts are differentiated by household income, with the largest rebates available to households below 80 percent of area median income (AMI), moderate rebates for those between 80 and 150 percent AMI, and baseline rebates for households above 150 percent AMI. A separate Disadvantaged Community (DAC) bonus is available to eligible participants regardless of income tier.

Savings modeling by participating trade allies must be performed using BPI-2400 compliant software, most commonly Snugg Pro and Quick Building Analysis Tool (QBAT). Trade allies conduct home energy assessments, develop baseline and improved-home models, recommend improvement scopes, and submit project documentation to Focus on Energy for rebate processing. As of December 2025, the program had processed 1,233 transactions across 933 unique participating households, disbursing approximately \$2.37 million in incentives (see

Table 1). Also as of December 2025, 63 contractors were registered in the HOMES program. The program launched a multifamily pilot in May 2025, though contractor familiarity with its requirements remains limited.

HEAR Program

Like HOMES, HEAR is federally funded and administered through Focus on Energy under DOE IRA requirements, distinct from Focus on Energy's traditional state-funded rebate programs. Wisconsin's HEAR program provides point-of-sale rebates for four measure categories: HPWHs, ducted and ductless ASHPs, induction cooktops and stoves, and HPCDs. As with HOMES, rebate amounts are income-differentiated, with households below 80 percent AMI eligible for the highest incentive amounts. Through late 2025, the program had served 413 households across the four categories, with ASHPs representing the dominant measure at 336 installations.

Evaluation Design

Process Evaluation

The process evaluation for HOMES included in-depth interviews with 13 HOMES-registered contractors (10 primary contractors and 3 support contractors), conducted between November 6 and December 5, 2025. Contractors represented a range of company sizes, from sole proprietors to firms with 50 to 249 employees, and served diverse areas of Wisconsin, including the Madison, Milwaukee, Sheboygan, and Fond du Lac areas, as well as the North, South Central, and West regions. At the time of interviews, individual contractors' total Focus on Energy project counts ranged widely, from zero (with HOMES projects still in progress) up to approximately 2,000 projects when including non-IRA work.

Participant surveys were fielded in fall 2025 with a census of HOMES participants. Of 624 total HOMES participants, 165 responses were received, with 112 completing the survey (18 percent response rate). Surveys were collected online between November 11 and December 2, 2025. For the HEAR program, 102 of approximately 374 HEAR participants completed the survey (27 percent response rate) between November 11 and December 8, 2025.

Impact Evaluation

The impact evaluation included two primary components. First, a tracking review assessed program participation levels, project types, and cumulative savings for both HOMES and HEAR, drawing on program records through December 2025.

Second, a desk review of BPI-2400 compliant energy modeling files was conducted for a sample of 28 single-family HOMES projects. The initial sample of 25 projects was drawn to represent projects with the highest first-year kWh savings while maintaining stratification across income levels and project types; Three additional projects reviewed in December 2025 brought the total to 28. Reviewers examined project documentation for completeness (signed offer letters, energy reports, final invoices, quality install (QI) tool outputs, and combustion safety forms) and assessed the reasonableness of baseline and improved-home energy model inputs using BPI-2400 XML files.

For HEAR, measure-level savings estimates were developed from tracking data by measure type, income tier, and baseline fuel type. These estimates were translated into customer annual bill impacts using applicable electric and natural gas rates. All survey instruments, interview protocols, and detailed tabulations underlying the figures and tables presented below were developed and administered by Cadmus as part of the Wisconsin Focus on Energy IRA HOMES and HEAR program evaluations; final evaluation reports are forthcoming (Cadmus Group 2025, 2026).

Process Evaluation Findings

HOMES Contractor Interviews

HOMES Contractor Readiness and Familiarity. Contractors were generally familiar with the core requirements of the HOMES program but showed uneven familiarity with procedural and documentation requirements. When asked to rate their familiarity with different aspects of the program on a 1 to 5 scale, contractors reported the strongest familiarity with home energy assessment procedures and the requirements for modeling and energy savings, areas where most rated themselves as "somewhat" or "very familiar." Familiarity was notably lower for documentation requirements: 5 of 13 contractors had low or neutral familiarity with the documentation needed to submit a final reimbursement application, and 4 of 13 had similar gaps regarding the QI tool used to document installations.

Over half of interviewed contractors (8 of 13) reported needing to learn new modeling software to participate in HOMES, most commonly Snugg Pro (n=3) and QBAT (n=2). Many found this transition challenging: 4 of 13 experienced a steep learning curve, with three specifically citing BPI-2400 calibration as a challenge. When asked to rate the difficulty of modeling savings at the program's rebate thresholds, contractors found modeling the higher (35 percent or more) savings tier to be notably more difficult, with all 13 rating it as difficult to very difficult. Difficulty at the 20 to 34 percent tier was more varied, though the majority still found it challenging (Figure 1).

Contractor Difficulty in Modeling Savings

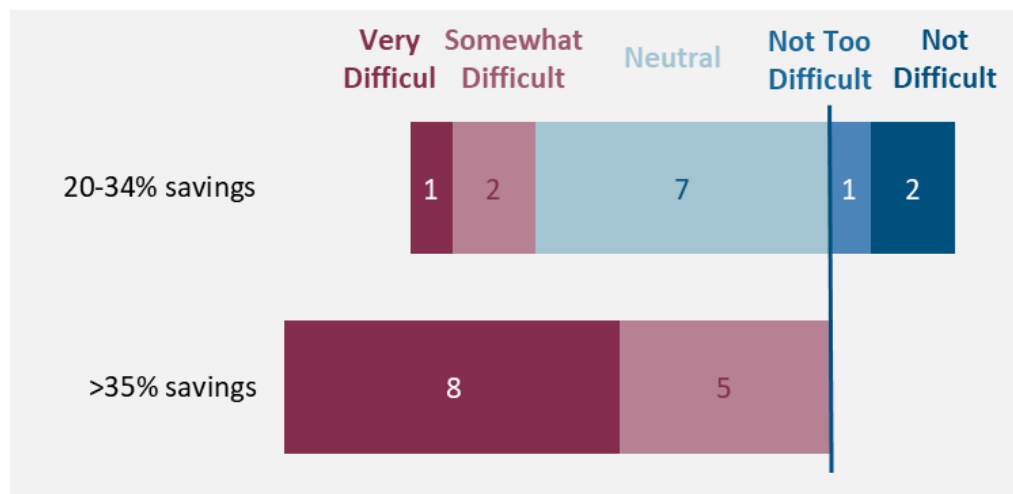


Figure 1. Contractor-Reported Difficulty Modeling Savings Thresholds (n=13). *Source:* HOMES Contractor Interview Question D3 (n=13) , Cadmus Group 2026

HOMES Contractor Challenges and Barriers. When discussing barriers that customers face in completing bundled improvement projects, 8 of 13 contractors cited project cost as the primary obstacle, and three pointed to project complexity. From the contractor side, the main barriers to bundling measures were managing coordination with other contractors (n=4) and waiting on a larger rebate payment before proceeding (n=3). Most contractors found inter-contractor partnerships convenient, though two reported difficulty finding participating contractors for specialized trades.

Regarding rebate caps, eight contractors indicated that the caps under HOMES were sufficient for the projects they were completing, while four said the caps created limitations. This split suggests that rebate adequacy may vary by project type and customer income level, an important consideration for program design as Wisconsin and other states consider adjusting incentive structures.

HOMES Contractor Training and Support. All 13 interviewed contractors attended HOMES training, either via webinar or in person. The training was broadly well-received: 11 of 13 rated the modality as effective or very effective. In response to a question about resources for timely documentation submission, seven contractors felt that Focus on Energy provided adequate support, while three noted that support was initially insufficient but had since improved. These positive trends in training effectiveness and support responsiveness are encouraging signs for program maturation.

Overall contractor satisfaction with HOMES was mixed. About half of contractors were satisfied or very satisfied (6 of 13), while five were neutral and two were not satisfied. This distribution is consistent with a program in an early implementation phase where administrative processes are still being refined. Contractors' most common suggestions for improvement included clarifying program requirements, reducing modeling burdens, and streamlining communication with Focus on Energy to reduce back-and-forth exchanges.

HOMES Multifamily Readiness. Six of 13 contractors reported currently working with multifamily properties under HOMES, while one planned to do so and four were still considering it. However, familiarity with multifamily-specific requirements was low: about half (6 of 11 contractors who responded to this question) rated themselves as not familiar or not too familiar with HOMES Multifamily requirements. Contractors suggested that additional training and support materials focused on the modeling approaches required for multifamily buildings would be valuable. Given that multifamily housing represents a disproportionate share of low-income households in Wisconsin and nationally, this readiness gap is an important equity consideration.

HEAR Contractor Interviews

HEAR Contractor Readiness and Familiarity. Nine HEAR-registered contractors were interviewed between November 6 and December 15, 2025, representing a range of company sizes (2 to 249 employees) and geographic areas across Wisconsin. Contractors installed ASHPs

(4), HPWHs (3), and electrical upgrades (5), with individual project counts ranging from zero (projects still in progress) to 15.

Contractors were generally familiar with equipment eligibility and overall program rules, but familiarity dropped notably for procedural requirements. When asked to rate familiarity on a 1 to 5 scale, contractors showed the lowest ratings for the documentation needed to submit the final reimbursement application, with 4 of 9 rating themselves as not too familiar or not at all familiar. Customer eligibility was also a lower-familiarity area. All contractors received training (primarily via webinar), and most rated the training modality as effective, though 2 of 9 rated it as not too effective. Contractors suggested that Focus on Energy walk contractors through the final submission process, provide video tutorials to reduce reliance on phone support, and send notifications when program requirements change.

HEAR Challenges and Barriers. The most prominent challenge cited by contractors was keeping up with program instruction changes and inconsistencies. Several contractors described confusion stemming from evolving guidance, with one noting that coordination between Focus on Energy staff felt internally inconsistent. Four of six contractors who installed ASHPs performed Manual J load calculations for all customers; only one considered this a barrier. Four contractors reported minor issues with the need for multiple site visits, while five had no issues. Six of nine had no difficulties stacking HEAR rebates with other incentives (or had not attempted to do so).

Regarding rebate application processing, all contractors were aware that incomplete or incorrect applications cannot be processed until corrected. Five felt they had sufficient support for Focus on Energy application submissions, while four said they could use more help understanding requirements. One contractor described having a dedicated Focus on Energy contact to answer pre-submission questions as “very helpful.”

HEAR Multifamily Readiness. HEAR contractor familiarity with multifamily program requirements was notably low. Among the five contractors asked, three rated themselves as not at all familiar, one as not too familiar, and one as neutral. Three of nine contractors were planning to serve multifamily properties, three were still considering it, and four were not doing so. Two contractors had attended multifamily-specific training but said they understood only the basic overview. This readiness gap parallels findings from the HOMES contractor interviews and represents a shared challenge across both IRA rebate programs.

HEAR Overall Satisfaction and Program Impact. HEAR contractor satisfaction was moderate: 5 of 9 were somewhat satisfied with the program, one was neutral, and three were not too satisfied. Those who were dissatisfied cited frustration with uncertainty around program rules or inability to complete projects. All but one contractor rated the HEAR rebates as very influential on customers’ decisions to complete qualifying projects, with one stating: “The projects wouldn’t be happening without the program.” Three contractors said HEAR had a notable positive impact on their 2025 sales, two reported a minor positive impact, and four reported no impact. Two contractors added staff or shifted responsibilities as heat pump installations grew, and two were considering billing customers for administrative costs associated with program submissions. Contractors’ most common suggestions for improvement included clearer and more streamlined guidance for program processes, additional educational

tools such as video tutorials, and increased contractor participation to allow for peer collaboration.

HOMES Participant Surveys

HOMES Participant Characteristics. Of 112 survey completers, 91 percent lived in single-family homes, and 53 percent reported that their home was built before 1960, a finding consistent with the program's focus on older housing stock with substantial improvement potential. Participants skewed heavily toward lower income levels: 60 of the 69 respondents who reported their income tier fell in the below 80 percent AMI category, seven were in the 80 to 150 percent tier, and only two were above 150 percent AMI. This income distribution reflects the program's incentive structure, which provides the largest rebates to lower-income households.

The most common installed measures were insulation and air sealing (52 of 54 respondents who installed envelope measures), followed by fans (14), with doors, windows, and skylights accounting for small fractions. Among HVAC equipment installers, heat pumps of various types (ducted, ductless, geothermal) were most common (18), followed by gas furnaces (9), HPWHs (2), and central air conditioners (2).

HOMES Program Awareness and the Role of Online Resources. The Focus on Energy website was the single most common source through which participants first learned about the HOMES program (27 respondents), followed by other online reading (21) and word of mouth from friends, family, and neighbors (19). Contractors were an important awareness channel for 14 respondents, while Focus on Energy marketing materials (mail, email, social media, online ads) and utility companies each accounted for approximately 11 to 12 respondents. Community-based organizations were cited by 11 respondents, a relatively high share that suggests early success in reaching lower-income participants through trusted community channels (Figure 2).



Figure 2. How HOMES Participants First Learned About the Program (n=124) *Source:* HOMES Participant Survey Question A2 (n=124) , Cadmus Group 2026

HOMES Income Qualification and Energy Assessment Experience. The income qualification process was not a significant barrier for most participants. When asked how easy the process was, 59 of 110 respondents rated it as very easy, 23 as somewhat easy, and 23 as neither easy nor difficult. Only 26 of 110 rated it as not too easy or not at all easy. Notably, 25 percent of participants required some assistance from Focus on Energy to complete the qualification process, a share that underscores the importance of maintaining accessible customer support channels, particularly for lower-income households.

The Home Energy Assessment was well-received as a tool for informing upgrade decisions. Between 80 and 100 percent of participants found the Energy Assessment Report to be useful or very useful in making decisions about their home improvements, across all measure categories (envelope, HVAC/water heating, and appliances). Additionally, 84 percent found the information provided by their energy assessor to be somewhat or very clear. Access to assessors was generally not a problem: 79 percent found it easy to locate an energy assessor, and 87 percent found scheduling the assessment easy.

HOMES Installation Satisfaction and Perceived Benefits. Participant satisfaction with installations was uniformly high. Most respondents were very satisfied with the installation of their improvements across all measure types, envelope measures, HVAC equipment, water heating equipment, and appliances. Rebate satisfaction was similarly strong, with 79 to 89 percent of respondents rating themselves as very satisfied with rebates received for both envelope improvements and HVAC or water heating equipment.

Participants who installed envelope measures reported a range of non-energy benefits (NEBs). The most commonly reported benefit was fewer drafts or more consistent indoor temperature (32 respondents), followed by greater overall comfort (20), and lower energy bills (16). Other reported benefits included better moisture control, reduced outside noise, and improved ventilation. Among participants with new HVAC equipment, over half (6 of 11) reported a decrease in their energy bill since installation, while three reported an increase and two reported no change, an early indication of positive bill outcomes that will be refined through billing analysis as program data mature. The discrepancy between survey-reported bill decreases and the bill impact analysis showing net increases for fuel-switching ASHP installations may reflect survey response timing (before a full heating season), self-selection bias among respondents, or participants reporting on individual fuel bills rather than combined energy costs.

HEAR Participant Surveys

HEAR Participant Characteristics and Program Awareness. The HEAR participant survey was fielded online between November 11 and December 8, 2025, yielding 102 completed responses from a total of 374 program participants. Eighty-nine percent of respondents lived in single-family homes, and 44 percent lived in homes built before 1960. Most homes were between 1,000 and 2,000 square feet. The two most common measures installed were ASHPs and electrical upgrades including panel and wiring work.

The most common way HEAR participants learned about the program was reading about it online outside the Focus on Energy website (34 respondents), followed closely by referral from a contractor (32) and the Focus on Energy website (29). Focus on Energy marketing materials accounted for 23 responses, word of mouth for 18, and community-based organizations for 13. This pattern differs from HOMES, where the Focus on Energy website was the top source, suggesting that contractor-mediated awareness is particularly important in the HEAR program,

where equipment decisions often originate with trade contractors rather than homeowners. When asked to identify the most important factors in their decision to participate, participants ranked the availability of instant rebates at installation as the top motivator, followed by desire to reduce environmental impact and reduce monthly energy bills.

HEAR Application Experience and Customer Journey. For most measure types, HEAR participants rated the income qualification process as very easy. HPWH and envelope improvement participants were somewhat less positive. Twenty-five of 106 participants required assistance from Focus on Energy to complete income qualification, a similar share to HOMES participants, reinforcing the importance of accessible customer support. For most measures, participants confirmed they received their instant rebate at the time of installation. A small number of ASHP, HPWH, electrical panel, and electrical wiring participants reported not receiving the rebate at installation, suggesting occasional processing gaps that warrant attention.

Finding a registered contractor was easy for most participants across most measure types. A notable exception was HPWHs: half of the 10 HPWH respondents rated finding a registered contractor as not easy or not at all easy, consistent with the smaller pool of HEAR-registered contractors active in this specialty. Two-thirds of all participants required multiple contractor visits; no participants characterized multiple trips as a major inconvenience and most reported no impact on their experience.

HEAR Satisfaction, Perceived Value, and Barriers. HEAR participant satisfaction was exceptionally high. No participants across any measure type rated themselves as dissatisfied with the program, and most rated themselves as very satisfied. Ninety-five of 107 respondents said the information their contractor provided about rebates was clear. No participants rated the improvements they received as not valuable, and most rated them as very valuable across all measure types. Participants were also very likely to recommend the program to others. Among heat pump participants who noticed changes in their utility bills, none were dissatisfied with the program regardless of bill direction, and all 46 participants who had observed changes said those changes aligned with what their contractor had explained, a positive signal for the program's customer education approach.

Most HEAR participants (69 of 103) reported experiencing no barriers to participation. Among those who did, lack of clear information or guidance was most frequently cited (31 respondents), followed by upfront cost or out-of-pocket expenses (25) and installation difficulties (22). The primary reason participants did not install additional upgrades was cost, measures were too expensive even with rebates, followed by not needing the additional measure.

Impact Evaluation Findings

HOMES Tracking Data

Program Overview. As of December 2025, Wisconsin's HOMES program had processed 1,233 transactions across 933 unique participating households, disbursing approximately \$2.37 million in incentives. Total verified savings across the program portfolio were 101,307 kWh and 97,531 therms (Table 1). The 1,233 transactions include energy assessments (790 transactions), improvement installations across two rebate tiers (316 transactions), and DAC bonus payments (127 transactions); some households appear in multiple transaction categories. The 790 energy assessment transactions reflect a substantial pipeline of potential improvement projects,

households that have completed assessments and may proceed to installations in future program years.

The program is geographically widespread across Wisconsin, with the heaviest concentration in Milwaukee County (247 participants), followed by Eau Claire (71), Rock (70), and Dane (65) counties (Figure 3). The remaining roughly 645 participants are distributed across 50 additional counties, a reach that reflects both the statewide program structure and the importance of rural and smaller-community engagement.

Table 1. Wisconsin HOMES Program Single-Family Tracked Totals (December 2025)

Measure Name	AMI	Units	kWh	kW	Therms	Incentive
DAC Bonus	—	127	0	0.00	0	\$25,400
20–34%	<80% AMI	162	50,055	25.35	44,459	\$806,109
20–34%	>150% AMI	18	12,811	4.62	4,906	\$27,000
20–34%	80–150% AMI	19	15,145	6.15	4,803	\$38,000
35%+	<80% AMI	105	16,035	–1.00	37,873	\$1,036,789
35%+	>150% AMI	7	1,618	–5.47	3,667	\$21,000
35%+	80–150% AMI	5	5,643	0.90	1,823	\$20,000
Energy Assessment	—	790	0	0.00	0	\$395,000
Total		1,233	101,307	30.56	97,531	\$2,369,298

Note: Average modeled savings percentages: 23% for 20–34% tier; 38–39% for 35%+ tier. Negative kW values reflect net demand reduction from heat pump adoption (primarily winter peak reduction exceeding summer peak increase).

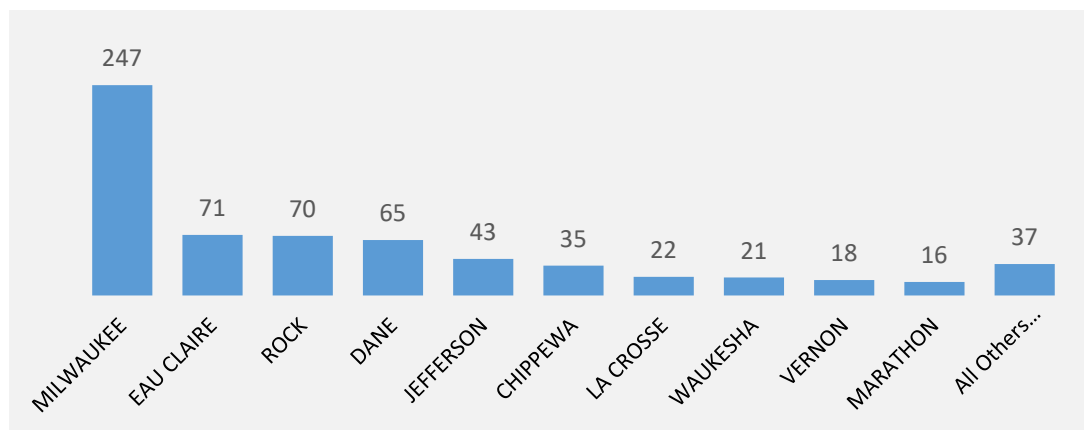


Figure 3. WI HOMES Geographic Summary (2025) Single Family Participant Location/County *Source:* Cadmus Group 2026.

Per-unit savings performance aligns with program expectations. Homes in the 20 to 34 percent savings tier are averaging approximately 23 percent modeled savings; those in the 35 percent or more tier average 38 to 39 percent. Per-unit natural gas savings are higher in the

deeper-retrofit tier (361 to 524 therms per unit) than in the shallower tier (253 to 274 therms per unit). Per-unit incentives for the lowest-income households averaged \$4,976 in the 20 to 34 percent tier and \$9,874 in the 35 percent or more tier, substantial transfer payments that represent both a program cost and a meaningful affordability benefit for the households served.

HOMES Energy Model Review

Sample Characteristics. The 28 reviewed homes had an average year of construction of 1954, conditioned floor area of 2,086 square feet, and baseline air leakage of 10.5 ACH50, consistent with older, leaky housing stock well-suited to the HOMES program. Average modeled savings were 34 percent (range: 20 to 51 percent). Baseline heating was diverse, spanning natural gas furnaces (12 homes), propane furnaces (4), electric resistance (4), electric ASHPs (2), and wood stoves (2), among others. Water heating split nearly evenly between natural gas storage (12 homes) and electric storage (11).

Common Model Inconsistencies. The model review identified three recurring issues across multiple sampled projects (Table 2). These issues have the potential to affect the accuracy of modeled savings claims and, in some cases, may result in overstated savings estimates.

Table 2. Common Energy Modeling Themes Identified in HOMES Desk Review (n=28)

Issue	Description	Projects Affected
Conditioned Floor Area Discrepancy	Conditioned floor area increases from baseline to improved model, a known software inconsistency in OptiMiser version 4.524.62009/5406. Can substantially inflate modeled savings.	5
Observable Duct Leakage with No Duct Sealing Measure	Observable baseline duct leakage, but no duct sealing measure is included in the scope of work. Duct sealing is typically cost-effective and high-savings. Some may reflect calibration inputs rather than actual conditions.	13
Air Sealing Reduction >25% in Models	Program protocols cap modeled air sealing savings at 25% reduction from baseline. Five models exceeded this threshold with an average reduction of 47%. The interaction with other measures makes the savings impact difficult to gauge.	5

The most consequential issue was the conditioned floor area discrepancy: in 5 of 28 projects, conditioned area increased from baseline to improved model, in one case from 1,020 to 2,040 square feet, artificially inflating savings estimates. Because the software applies the same energy-use-per-square-foot assumptions to both models, a larger improved-model floor area generates artificially higher baseline consumption, thereby overstating the percentage savings even though the actual home size has not changed. This appears to be a software bug in a specific version of OptiMiser; the program administrator should work with the vendor to patch it and assess previously submitted projects. The most widespread finding was observable duct leakage with no duct sealing in the scope of work (13 of 28 projects), a missed opportunity given duct sealing's recognized cost-effectiveness. Finally, five projects applied air leakage reductions of 32 to 64 percent in their models, well above the program's 25 percent cap, potentially overstating savings; BPI-2400 calibration guidance for air sealing should be reinforced through contractor training.

Project-Level Review Summary. Across the 28 reviewed projects, approximately one-third (nine projects) had no issues identified by reviewers, while the remainder had one or more modeling concerns with savings impacts ranging from slight to significant. The most consequential cases involved conditioned floor area discrepancies, certain basement-conditioned-space issues, and HVAC heating load fraction errors, in the worst case, multiple compounding errors inflated modeled savings substantially. Of the three recurring issues, the conditioned floor area discrepancy is a confirmed software bug (OptiMiser version-specific), while air sealing cap exceedances are primarily attributable to user errors in model input. The duct leakage finding may reflect either calibration modeling choices or missed measure opportunities, requiring case-by-case review. Mandatory QAQC review of energy models, either through automated software checks or third-party spot-checks, is strongly recommended.

HEAR Measure-level Savings

Energy Savings by Measure. HEAR measure-level savings are calculated separately for each measure type, income tier, and baseline fuel type. Table 3 presents total evaluated savings for the four HEAR measure categories.

Table 3. HEAR Program – Total Evaluated Annual Savings by Measure (December 2025)

Measure	Income Tier	Installations	kWh*	Therms Saved	DAC Units
Heat Pump Water Heater	<80% AMI	26	22,333	519	2
Heat Pump Water Heater	80–150% AMI	23	20,206	493	1
ASHP – Ductless	<80% AMI	67	–51,054	23,538	14
ASHP – Ductless	80–150% AMI	21	–21,117	8,083	4
ASHP – Ducted	<80% AMI	147	–240,156	58,010	25
ASHP – Ducted	80–150% AMI	101	–157,351	41,695	8
Induction Cooktop/Stove	<80% AMI	11	580	125	1
Induction Cooktop/Stove	80–150% AMI	8	422	91	0
Heat Pump Clothes Dryer	<80% AMI	4	345	20	0
Heat Pump Clothes Dryer	80–150% AMI	5	303	25	0

* Net kWh values are negative where natural gas or propane replacement substantially increases electric consumption for space heating (fuel switching). Natural gas therm savings for ASHPs are large and positive. Fuel split for HPWHs: ~47% electric, ~46% natural gas, ~7% propane baseline. Fuel split for ASHPs: ~25% electric, ~69% natural gas, ~6% propane baseline. All savings values in this table represent estimated first-year annual savings.

ASHPs dominate the HEAR portfolio by both installation count and fossil fuel displacement. Ducted ASHPs in the lower-income tier alone deliver 58,010 therms saved across 147 installations. The negative net kWh values reflect electrification physics in a heating-dominated climate: replacing gas furnaces with heat pumps shifts load to the electricity grid, but heat pump efficiency means total energy costs still often decrease. HPWHs contribute 1,012

combined terms of savings across both income tiers, with installations split nearly evenly between electric (47 percent) and natural gas (46 percent) baselines, making them the portfolio's most versatile measure in terms of savings pathway.

Energy Bill Impacts. For households replacing electric equipment with more efficient electric alternatives, bill savings are straightforward and positive: ducted ASHPs replacing electric baselines save \$1,543 to \$1,624 per year, and HPWHs replacing electric water heaters save \$417 to \$443 annually.

For the majority of ASHP installations, which replace natural gas, the picture is more nuanced. A ducted ASHP replacing a gas furnace saves approximately \$447 per year on gas bills but increases electric bills by roughly \$871, for a net annual increase of \$424. HPWHs replacing gas water heaters are the notable exception, delivering a net saving of approximately \$36 per year. The economic case for fuel-switching depends on local rates, baseline equipment efficiency, and climate; in Wisconsin, rate structures may need to better reflect the grid and environmental value of electrification for the economics to favor fuel-switching participants. These bill impact estimates assume the ASHP replaces an existing heating and cooling system. For households that did not previously have air conditioning, the addition of a cooling load would increase electricity consumption beyond what is reflected in these estimates, though participants gain a significant comfort and health benefit.

Greenhouse Gas Savings. GHG reductions were estimated using the EPA's AVOIDed Emissions and geneRation Tool (AVERT) (EPA 2024a), which translates measure-level energy savings into CO₂, SO₂, and NO_x reductions for the relevant grid region. On a per-unit basis, ductless ASHPs generated the highest GHG savings at 22.2 tons per unit, followed by ducted ASHPs at 16.5 tons per unit, and HPWHs at 11.8 tons per unit. Induction cooktops and HPCDs, while meaningful electrification measures, produced substantially smaller per-unit GHG savings (0.53 and 0.64 tons per unit, respectively) given the lower energy throughput of these appliances (Figure 4).

In aggregate, ducted ASHPs account for 61 percent of total GHG savings and ductless ASHPs for 29 percent, totaling 6,649 tons across the 413-installation portfolio. These figures will grow over equipment lifetimes as the Wisconsin grid decarbonizes.

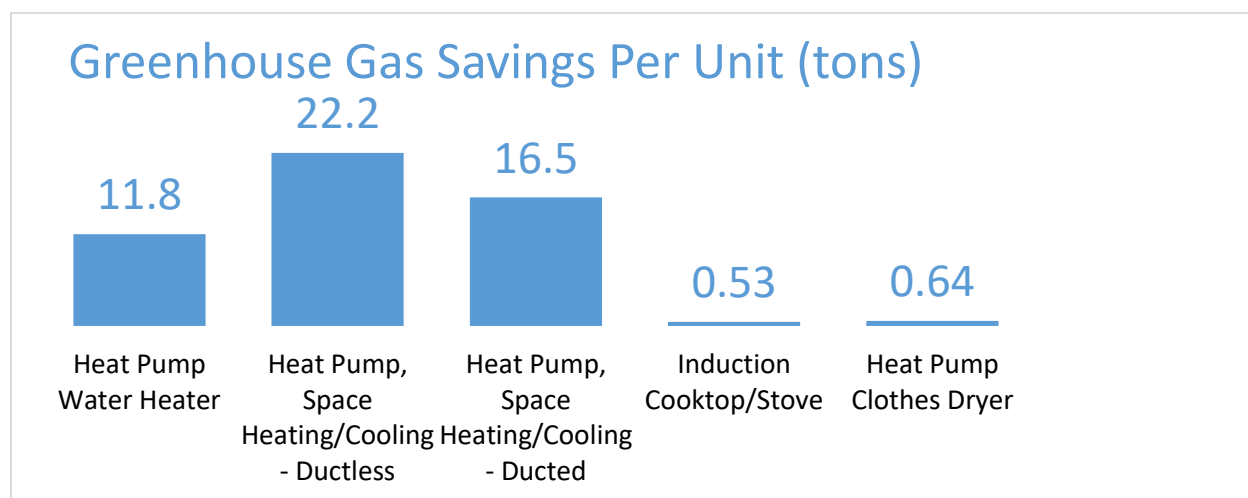


Figure 4. WI HEAR Greenhouse Gas Savings (2025) *Source:* Cadmus Group 2025.

Health Benefits from Reduced Emissions. The evaluation also estimated health-related non-energy benefits (health NEBs) attributable to reductions in SO₂ and NO_x emissions using the Benefits Per Kilowatt-Hour (BPK) tool (EPA 2024b). These benefits are expressed as monetized health impacts over the first five years of equipment operation and reflect reduced incidence of respiratory and cardiovascular illness associated with lower air pollution levels. HPWHs are the standout measure in this analysis: because HPWHs predominantly replace electric resistance water heaters or natural gas heaters that generate relatively low grid emissions compared to space heating loads, they deliver a net positive NEBs value of approximately \$13,336 across 49 installations. In contrast, ASHPs, while large contributors to GHG savings through fossil fuel displacement, generate negative NEB values in the aggregate because the increased electricity demand for space heating draws on a grid that still includes fossil fuel generation. Ducted ASHPs alone account for approximately -\$124,618 in aggregate NEB health costs over five years across all fuel types.

These NEB figures reflect the current Wisconsin grid mix and will improve as renewable generation increases. Program administrators should incorporate future-grid NEB projections into benefit-cost analyses and use these findings to communicate the full range of near- and long-term electrification benefits to participants and policymakers.

Equity and Disadvantaged Community Participation

Both HOMES and HEAR programs show early signs of successfully reaching lower-income households. The HOMES participant survey confirmed that the large majority of respondents (60 of 69 who disclosed income tier) were below 80 percent AMI, reflecting effective income targeting through the program's incentive structure. Participant satisfaction was high across all measures, suggesting that the program experience is not inequitable.

DAC participation in the HEAR program totaled 51 out of 336 ASHP installations, or approximately 15 percent. Community-based organizations were identified as a meaningful awareness channel (cited by 11 HOMES survey participants), supporting the case for continued investment in community partnerships as an outreach strategy.

Areas for continued attention include: expanding HOMES contractor capacity in underserved geographic areas (Milwaukee County dominates program geography, with significant room for expansion in other urban counties and rural areas); improving multifamily contractor readiness, given the concentration of lower-income renters in multifamily housing; and ensuring that bill impact communications for fuel-switching measures accurately represent the costs and benefits for lower-income participants who may face greater financial vulnerability.

Key Findings and Recommendations

Finding 1: Contractor support infrastructure needs strengthening across both programs

Across HOMES and HEAR, contractors faced consistent challenges with documentation requirements and program administration. All 13 HOMES contractors found achieving the higher savings tier difficult, citing both the complexity of BPI-2400 modeling software and the challenge of identifying sufficient measure combinations to reach 35 percent or greater modeled savings. HEAR contractors reported parallel gaps: 4 of 9 had low familiarity with reimbursement application requirements, several struggled to keep up with evolving program guidance, and four called for video tutorials and clearer pre-submission support. Multifamily

readiness was low across both programs, about half of HOMES contractors and most HEAR contractors asked about the multifamily track were unfamiliar with its specific requirements, a concern given the concentration of low-income renters in multifamily buildings.

Despite these friction points, contractor satisfaction was moderate and most found the rebates influential on customer decisions. One HEAR contractor summarized the program's value plainly: "The projects wouldn't be happening without the program."

Recommendation 1: Provide targeted BPI-2400 modeling training for Snugg Pro and QBAT, with guidance on common modeling errors and the measure combinations most likely to achieve each savings tier. Develop video tutorials and a dedicated pre-submission support contact for HEAR contractors to reduce application errors. Prioritize multifamily-specific training for both programs as the multifamily pilot scales, given the equity implications of low contractor readiness in this sector.

Finding 2: Participant experience is strong and programs are reaching target populations, but scaling requires geographic expansion

Participant satisfaction was exceptionally high across both programs. No HEAR participants were dissatisfied, and 79 to 89 percent of HOMES participants were very satisfied with their rebates. The programs are also reaching lower-income households as intended: 60 of 69 HOMES survey respondents who disclosed income fell below 80 percent AMI, and HEAR's instant rebate structure was the top motivation for participation. Community-based organizations were cited as an awareness channel by 11 HOMES participants, and DAC households accounted for approximately 15 percent of HEAR ASHP installations, early indicators of success on equity goals. Program tracking data corroborate this pattern: of the 316 HOMES improvement transactions (excluding energy assessments and DAC bonuses), 267 (85 percent) went to households below 80 percent AMI, 24 to households between 80 and 150 percent AMI, and 25 to households above 150 percent AMI (Table 1), providing a near-complete population-level view of income-tier distribution.

The main geographic limitation is concentration: HOMES participation is heavily weighted toward Milwaukee County, with significant unmet potential in other urban counties and rural areas. The contractor network, currently 63 HOMES and 76 HEAR registered contractors, constrains reach, particularly for HPWHs, where half of HEAR survey respondents said finding a registered contractor was not easy.

Recommendation 2: Expand contractor recruitment with geographic targeting, particularly in underserved urban and rural counties. Increase contractor density for HPWH installations specifically. Continue investment in community-based organization partnerships as a proven awareness channel for lower-income participants. Monitor participant satisfaction longitudinally to ensure early positive experiences are sustained as the programs scale.

Finding 3: Energy model integrity and fuel-switching economics are the two most consequential program management challenges

The HOMES energy model review identified three recurring issues with the potential to affect savings accuracy: a software bug in a specific OptiMiser version that inflates conditioned floor area in improved models (affecting 5 of 28 reviewed projects); observable duct leakage

with no duct sealing in the scope of work (13 of 28 projects), a missed cost-effective savings opportunity; and air sealing reductions exceeding the program's 25 percent modeling cap (5 projects). In the most problematic case, multiple compounding errors inflated modeled savings substantially. Without systematic QAQC, these issues will persist undetected.

On the HEAR side, the program's 413 installations delivered 6,649 tons of GHG reductions and 135,532 therms of fossil fuel savings, with ductless ASHPs generating 22.2 tons per unit, the highest of any measure. However, fuel-switching ASHP installations increase net electric bills by approximately \$424 per year for gas-furnace households. HPWHs are the exception: they are the only fuel-switching measure in the portfolio that delivers a net positive bill impact (~\$36/year savings against a gas baseline), making them a particularly compelling near-term offer for natural-gas water heater households. For all fuel-switching measures, the GHG and health benefits are real but accrue on a grid and time horizon that may not be legible to participants managing tight monthly budgets.

Recommendation 3: Implement systematic QAQC review of HOMES energy models before rebate payment, with automated screening for conditioned floor area discrepancies, missing duct sealing, and air sealing cap exceedances. Work with the OptiMiser vendor to resolve the conditioned floor area bug. For HEAR, develop clear bill impact tools for fuel-switching participants and prioritize HPWH outreach to natural-gas water heater households. Incorporate future-grid NEB projections into program benefit-cost analyses to communicate the full long-term value of electrification to policymakers.

Conclusion

Wisconsin's HOMES and HEAR programs represent the nation's first launched IRA HER programs, and this evaluation provides the first empirical evidence on their implementation and early performance. The results are encouraging: participants are satisfied, lower-income households are being meaningfully served, and the program is delivering real energy and fuel savings.

At the same time, the evaluation surfaces clear opportunities for improvement, most notably in contractor modeling support and energy model quality assurance. The three recurring modeling inconsistencies identified in the HOMES desk review are addressable through targeted software fixes, revised contractor guidance, and routine QAQC processes. The HEAR bill impact findings underscore the need for transparent, tailored communication to help fuel-switching participants understand the full cost picture.

As states across the country move through the process of designing and launching their own IRA Home Energy Rebate programs, Wisconsin's experience offers a practical, evidence-based roadmap. Early evaluation, even before billing data are available for rigorous econometric analysis, can surface implementation challenges and guide program refinement before they become entrenched. We encourage program administrators and evaluators in other states to share their own early findings to build a growing evidence base for this critical class of programs.

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