

CT R1973 RETAIL NON-LIGHTING EVALUATION

Evaluation Results

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AGENDA

1. Overview & Objectives

2. ESRPP

- Results
- Recommendations

3. E-commerce

- Results
- Recommendations



RETAIL NON-LIGHTING PROGRAM OVERVIEW

Energy STAR Retail Products Platform (ESRPP)

- Midstream incentives to retailers for the sale of each qualified unit.
- Nationally-coordinated program.
- Eversource and UI have participated since April 2018.

Online E-Commerce Platform

- Online platform offering energy-efficient (EE) equipment.
- Customers receive instant rebates for purchasing EE equipment through platform.
- UI has launched *Smart Solutions* in 2019.
- Eversource launched *Eversource Savings Center* early in 2020.

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PROJECT OBJECTIVES AND OUTCOMES



Project Objectives

- Develop improved impact parameters for retail non-lighting programs.
- Recommend improvements to program design and implementation.

ESRPP Evaluation Objectives:

Update measure-specific PSD impact parameters and approach (PSD memo)

Establish evidence for savings claims (here and PSD memo)

Assess implementation challenges and outline best practices (here)

E-Commerce Evaluation Objectives:

Update measure-specific PSD impact parameters (PSD memo)

Outline program best practices (here)

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DATA COLLECTION/ANALYSIS FOR THE EVALUATION

PROJECT ACTIVITIES	ESRPP	E-Commerce
Literature review	✓	✓
Peer utility interviews	✓ ¹ (n=6)	✓ (n=4)
Retailer interview analysis	✓ ² (n=8)	
EM&V best practices comparison	✓	
Shelf assortment survey analysis	✓	
Sales data analysis	✓	
Engineering review of impact parameters	✓	✓

¹ESRPP peer utility interviews will also include external collaborators.

²Interactions with retailers through local or regional evaluations is prohibited. Instead, research on retailer participation is done through a national evaluation effort. Retailer interviews were conducted in 2019 by Cadmus as part of a national ESRPP program evaluation. Given that retailers' participation is at the national level, the interviews focus on the program from that perspective. The Connecticut ESRPP was implemented in 2018, and therefore the key results and barriers to the success of the program are applicable to Connecticut.

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PART 1 - ESRPP
RESULTS



PART 1 Energy STAR Retail Products Platform (ESRPP) Results

- Program Design, Actors, and Implementation
 - Challenges
 - Incentives Comparison
 - Retailer Engagement
 - Claiming Savings and Evaluation
- Evidence of Program Impacts
- Recommendations

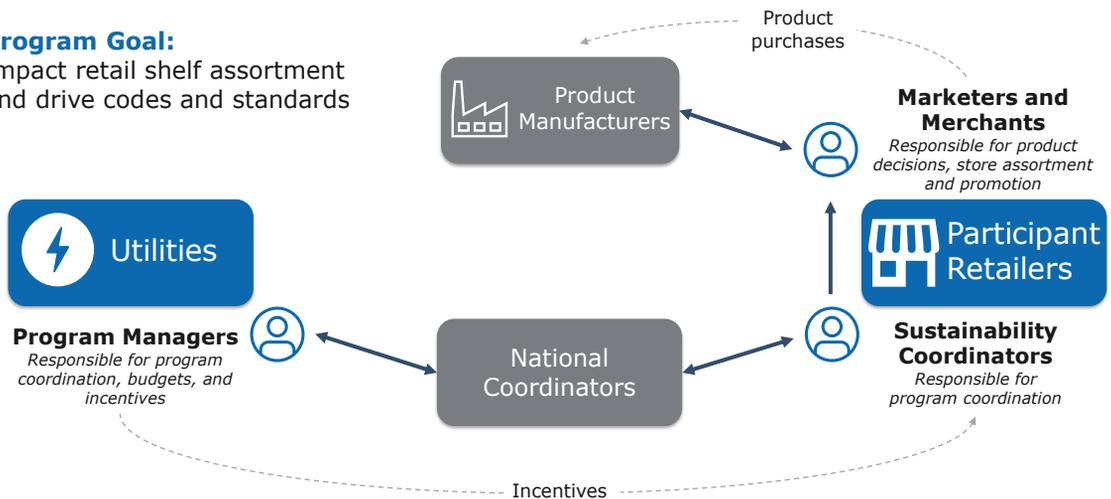
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ESRPP NATIONAL PROGRAM ACTORS

Program Goal:

Impact retail shelf assortment and drive codes and standards



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ESRPP IS A NATIONWIDE MARKET TRANSFORMATION PROGRAM THAT IS OFTEN OPERATED UNDER A RESOURCE ACQUISITION FRAMEWORK

▣ Challenges with this approach

- Tension between MT design and short-term implementation
- Lack of participation in long-term activities (codes and standards Working Groups)
- Challenges with claiming savings and cost-effectiveness

▣ The result

- Modifications to program design based on unique needs of individual Program Sponsors
- Reduced impact (and lower savings) achieved by CT utilities, and all Program Sponsors.

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ESRPP PROGRAM DESIGN AND IMPLEMENTATION; COMPARING RA VS. MT FRAMEWORK ELEMENTS

Component	Resource Acquisition Approach (CT and 5 Programs)	Market Transformation Approach (Intended; 1 Program)
Incentive Structure	Short-term cost-effectiveness and budget impacts	The need to drive retailer stocking and assortment decisions
Product and Intervention Selection	Offer incentives in line with short-term cost-effectiveness	Target the intervention to the needs of the specific market, including incentives, codes and standards support, retailer engagement, and market monitoring
Cost-effectiveness	Limited to short-term view of program costs and associated benefits from measures purchased through the program	Ability to include long-term benefits of increasing market share
National Working Groups	Only passive participation, such as signing on to letters for advancement of codes	Active participation in discussions to advance specifications, active recruitment of peer program sponsors
Savings Claims	Currently limited to 1 to 5% of Portfolio	Potential to expand savings up to 25% of electric savings Portfolio



ESRPP INCENTIVES – INCENTIVES WERE LOW BUT HAVE INCREASED IN PY2020

Product	ESRPP Portfolio Plan 2019	CT Incentive PY2019	CT Incentive PY2020	Estimated Retail Markup \$ ¹	2019 Incentive As Percent Of Markup	2020 Incentive As Percent Of Markup
Air Cleaner	-	\$0	-	\$70	-	-
Air Conditioner	\$30	\$10	\$20	\$105	10%	19%
Washer	\$20	\$15	\$20	\$367	4%	5%
Dryer²	\$40	\$45	\$45	\$335	13%	13%
Sound bar	-	\$0	-	\$54	-	-
Freezer²	\$20	\$10	\$20	\$119	8%	17%
Refrigerator	\$20	\$10	\$20	\$507	2%	4%

¹Estimated Retail Markup uses percentages derived by Department of Energy, published in technical support documents for product standards rulemakings.

²Utilities added basic tier incentives for PY2020; \$25 for basic tier dryers, and \$10 for basic tier freezers.



NATIONAL STRUCTURE AND LOCAL PROGRAMS ARE SOMETIMES AT ODDS; CT SHOULD COMMUNICATE MORE FREQUENTLY WITH LOCAL RETAILERS TO SUPPORT SALES OF REBATED PRODUCTS.

▶ **National program sponsors are adapting design to meet local needs.**

- Several retailers felt the program was **too localized and wanted more support at a national level**
- Some retailers wished the opposite – that the national program could be **customized based on local geography (specific products)**.
- Retailers indicated a **need for more specific direction on products to promote as well as content for marketing those products**.

▶ **Takeaway:** Greater product and incentive coordination and planning among program sponsors may yield stronger engagement – and eventually savings – from retailers. CT could also consider reaching out to local retail locations to determine what information could be provided to support sales of rebated products.

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RETAILER ENGAGEMENT; SPONSOR AND RETAILER BUSINESS PROCESSES COULD BE BETTER ALIGNED – CT SHOULD ANNOUNCE PRODUCTS AND INCENTIVES 1-2 YEARS IN ADVANCE

▶ **Disconnect between the retailer staff that engage with ESRPP and those making the purchase decisions that impact stocking**

- Retailer sustainability staff are usually main point of contact, but **merchants are ultimate decision makers** for purchasing and stocking eligible equipment.
- **Sustainability staff** are generally the most knowledgeable about the ESRPP program, but they **do not make decisions** about which products to stock in stores
- **Program Sponsors** typically make product incentive decisions 3-5 months in advance of program-year launches, while retailers make their assortment decisions 8-12 months in advance.

▶ **Takeaway:** CT utilities should provide greater direction and longer-term certainty on product and incentive decisions (a year in advance of program year launch).

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SAVINGS & EVALUATION CLAIMS AND METHODS VARY BY UTILITY; SOME COMMONALITIES

PROGRAM SPONSOR	Claim Savings	Savings Estimation	Portion Of Annual Portfolio Lifetime Savings	Product Selection
CT Utilities	Eversource	[Product sales - Baseline sales] * unit savings	<1%	Cost-effectiveness
ConEdison	✓	Product sales * unit savings * adjustment factors	2-5%	Cost-effectiveness
Efficiency Vermont	✓	Product sales * unit savings * adjustment factors	3%	All/most categories
Focus on Energy	✓	[Product sales - Baseline sales] * unit savings	0-2%	All/most categories
NEEA	✓	[Product sales - Baseline sales] * unit savings	24%	Low market-share products
PG&E		None	None	All/most categories
Xcel Energy (MN)	✓	Product sales * unit savings	2-5%	Cost-effectiveness



PROGRAM IMPACT FINDINGS – INCREASED SALES BUT NO INCREASE IN SHELF ASSORTMENT

Product	Tier	Incentive (2018, 2019)	Sales Data Analysis	Shelf Assortment Survey Analysis	Market Context
Air Purifier / Cleaners	Advanced	\$10	Increasing (41%)	Conflicting	Incentives ended
Clothes Dryer	Advanced	\$25, \$45	Decreasing	-	Very low volume
Clothes Washer	Advanced	\$10, \$15	Increasing (9%)	Conflicting	Increasing availability
Refrigerator	Advanced	\$10	Increasing & Significant (43%)	Decreasing	Increasing non-qualified availability
Room Air Conditioner	Advanced	\$10	Increasing & Significant (98%)	Unclear	Baseline near zero
Sound Bars	Advanced	\$5	Decreasing (55%)	Unclear	Incentives ended



RETAILER DISCOUNT SALES IMPACTS; OBSERVED SALES INCREASES IN REFRIGERATORS AND ROOM AIR CONDITIONERS ARE CONSISTENT WITH RETAILER'S TREATMENT OF THE SALE PRICE FOR THESE PRODUCTS.

- Qualified products were also slightly more likely to receive preferential placement or dedicated signage than non-qualified products.

Product Category	Change in Sales	Increased Discount
Air Cleaner	Increasing (41%)	\$6.08
Air Conditioner	Increasing & Significant (98%)	\$1.39
Washer	Increasing (9%)	\$36.10*
Dryer	Decreasing	\$36.06*
Freezer	-	\$72.70*
Refrigerator	Increasing & Significant (43%)	\$152.54*

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ESRPP NET IMPACTS FROM SALES DATA ANALYSIS – RESOURCE ACQUISITION CASE

▶ We calculated net-to-gross factors based on the increase in observed sales over the baseline (using results from the sales data analysis).

- Net Sales Percentage = Estimated Increase ÷ Total Program Sales

Product	Program-Period Sales	Estimated Sales Increase ¹	Estimated Net Sales Percentage	Current NTG Value ¹
Air Cleaners	133	55 ± 76	41%	65%
Air Conditioners	14,930	14,676 ± 1,336	98%	58%
Clothes Washers	17,300	1,504 ± 1,668	9%	52%
Clothes Dryers	42	-521 ± 10,267	-1,241%	68%
Sound Bars	1,954	-1,074 ± 1,898	-55%	84%
Refrigerators	12,255	5,258 ± 951	43%	54%

¹Estimated market penetration from ENERGY STAR® Unit Shipment and Market Penetration Report Calendar Year 2018 Summary.



RECOMMENDATIONS: CONSIDER MOVING TO MT FRAMEWORK – SUPPORTS HIGHER SAVINGS CLAIMS AND ESRPP DEVELOPMENT IN LINE WITH NATIONAL INTENT

▶ **Recommendation: Engage relevant Connecticut stakeholders to develop a market transformation framework.**

- ▶ **Claim greater savings** through a long-range view of program activities and outcomes.
- ▶ Establishing a framework will also allow the CT Utilities to more effectively track and monitor the success of ESRPP and other MT programs.
- ▶ With a framework in place, the CT Utilities would support the development of the ESRPP program by allowing more product inclusion and flexibility with setting incentives.
- ▶ **Elements for a market transformation framework:**
 - Agreements on evaluation
 - Mechanism for claiming savings
 - Cost-effectiveness methodology

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RECOMMENDATIONS – CHANGING TO MT WOULD ALSO REQUIRE TRACKING MT INDICATORS

▶ **Recommendation: Implement the recommended ESRPP market transformation indicators (MTIs) to track Connecticut's market transformation progress.**

Metric Description	Metric Calculation	Data Collection Activity
Program-Qualified Sales Share (PQS)	Number of program-qualified sales / total sales, for participating retailers by product category	ICF sales data portal
Program-Qualified Model Assortment Share (PQAS)	Number of program-qualified models on sales floor / total number of unique models, by retailer and within each product category	Quarterly in-store shelf assortment data

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RECOMMENDATIONS – TRACK NEW KEY PERFORMANCE INDICATORS REGARDLESS OF SHIFT TO MT

▶ Recommendation: Monitor key performance indicators (KPIs) to help identify where the Connecticut ESRPP program is having success in the shorter-term and where it is lagging.

Metric Description	Metric Calculation	Data Collection Activity
Total Deemed Savings	Monthly deemed savings overall, and by product category	ICF sales data portal
Net Benefit	Total program spend (\$) per kWh or kW saved	Program data
Number of Participating Store Locations	Number of unique store locations participating in utility territory, by retailer	Program data
Number of Product Categories	Count of product categories incented overall	Program data
Efforts to recruit retailers	Documentation of efforts to recruit new national or regional retailers	Program documents
Total incentive dollars paid	Total incentive amount, by retailer and product category	Program data

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RECOMMENDATIONS – INCREASE ENGAGEMENT WITH ESRPP AT THE NATIONAL LEVEL AND WITH LOCAL RETAILERS

Specific Recommendation	Rationale
Participate actively with ESRPP national partners specifications and standards tasks , such as providing data and engaging in comment process for standards.	Changes to federal appliance standards and ENERGY STAR® specifications lock in large MT savings over the long term - active engagement will support greater savings.
Work with the national collaborative to recruit regional peer utilities into the program .	Low-cost way to boost the impact of the Connecticut program by expanding the penetration of retailer incentives in the region.
Provide specific directions to national retailer partners on purchasing and promoting specific products (e.g., marketing strategies and content) and establish relationships with local retailers to ensure national guidance is implemented.	Engaging with local retailers will help staff understand how to market qualified products; could also expand the program by signing up local retailers.



RECOMMENDATIONS – OFFER CONSISTENT ESRPP INCENTIVES AND CONDUCT REGULAR, FORMALIZED REVIEW

Specific Recommendation	Rationale
Incorporate a structured assessment of incentive levels.	Establishing a market transformation framework would allow the Connecticut Utilities to develop a more robust method of selecting products and incentive levels that incorporates the potential program impact on the market.
Institute two-year or more incentive levels and budgets for the Connecticut ESRPP programs instead of current annual process, even if other Program Sponsors are budgeting annually.	Send a stronger signal to retailers which will likely encourage increased stocking of rebated products. Planning for incentive levels could also be aligned with Connecticut’s three-year planning cycle.

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PART 2 E-COMMERCE RESULTS



PART 2 E-Commerce Platform

- Platform Design and Implementation
 - Platform Design
 - Customer Experience
 - Product Categories
 - Platform Marketing
- Claiming Savings
- Recommendations

Note: E-Commerce analysis is based on peer utility interviews and visual comparisons between peer utility platforms.

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PLATFORM DESIGN – GOALS BASED ON PEER UTILITY RESEARCH

From comparison of CT to 4 other platforms around the nation, findings indicate that CT needs to confirm a clear platform strategy and goal:

- 1) **View the platform as an additional program channel** to increase the reach of existing downstream programs within their Energy Efficiency portfolio
 - 2) **Or more broadly educating customers** about efficient products to influence purchasing decisions.
- ▶ In both cases, peer administrators emphasized the **importance of a seamless, positive customer experience.**

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COMPARISON OF PLATFORM DESIGN FEATURES – CT LACKS FEATURES OF SOME MORE ROBUST PLATFORMS

Utility	Sells Products	Offers Rebates	Claims Energy Savings	Rates Products by Energy Usage	Energy Efficiency Education
Eversource	✓	✓	✓		✓
UI	✓	✓	✓		
National Grid (NY/RI)	✓	✓	✓		
National Grid (MassSave)	✓	✓	✓		
AEP Ohio	✓	✓	✓	✓	✓
PG&E		✓		✓	✓

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COMPARISON OF CUSTOMER EXPERIENCE – CT LACKS BUYERS GUIDES AND EE SCORING / RATINGS

Customer experience is essential to driving savings:

- ▶ Customers **benchmark the utility platforms against other online retailers** where they shop
- ▶ **Including product information as well as clear information on efficiency is key** to providing a comparable shopping experience.

Plug into Savings

Many electronics continue to draw power even when turned off. Save up to \$100 per year by connecting these devices to advanced power strips.

[LEARN MORE](#)

National Grid Marketplace (Uplight): Buyer's guides and educational information

AEP Ohio Marketplace (Enervee): Products sorted and scored by energy efficiency



PRODUCT CATEGORY COMPARISONS – EVERSOURCE COMPARES WELL WITH OTHER PROGRAMS

Utility	Smart T-stat	Lighting	Power Strip	Washer/Dryer	AC/ Air Cleaner	Water heater	Shower/ Faucet	Pool Pump	Fridge/ Freezer	Dish-washer	Dehumidifier	Smart Home	Electronics	EV Charger
Eversource	\$	\$	✓	✓	\$	✓	✓	✓	✓	✓	\$	✓	✓	✓
UI	\$	\$	✓				✓	N/A				✓		✓
Nat'l Grid (NY/RI)	\$	\$	\$				\$					✓		✓
Nat'l Grid (MassSave)	\$	\$	\$		\$		\$				\$	✓		✓
AEP Ohio	\$	\$	✓	✓	✓	\$		\$	✓	✓	✓		✓	✓
PG&E	\$	✓		✓	✓	\$		✓	✓	✓	✓	✓	✓	✓

✓ - Included \$ - Rebated



PLATFORM MARKETING AND METRICS: TO TRACK SUCCESS AT DRIVING TRAFFIC TO THE E-COMMERCE PLATFORMS

Driving customer web traffic to the site is of paramount importance:

- Product managers cited **direct email** as a successful tactic
 - Some advertise their products on the utility homepage.
- Several interviewees cited **special promotions** (e.g., Black Friday, Earth Day) and offering manufacturer discounts as best practices.

Platform metrics to include:

(if not already doing so)

- Monthly users (overall and by product category)
- Clickthrough rates
- Number of pages customers visit
- Referral sources
- Customer satisfaction and net promoter scores

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CLAIMING E-COMMERCE SAVINGS – OTHER UTILITIES USE A DOWNSTREAM APPROACH

Product Sales Methodology:

- Utilities that claimed savings rely on traditional downstream program methodologies, the same values and factors used for retail sales and rebates.
 - [Rebated product sales] x [deemed unit energy savings] x [NTG adjustment factors]

Examples of savings inputs (additional inputs in report):

Advanced power strip	MassSave	National Grid (RI)	Efficiency Vermont	Room Air Conditioner	MassSave	National Grid (RI)	Efficiency Vermont
In-service Rate	0.76	0.81	1.00 ^a	In-service Rate	1.00	1.00	
Realization Rate	0.92	0.92		Realization Rate	1.00	1.00	
Net-to-gross	1.00	1.00	1.00	Net-to-gross	0.63	0.63	1.00

^a Efficiency Vermont In-service rate for advanced power strips is assumed to be 1.00 for direct install or in-market purchases, 0.63 for free giveaways.

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CLAIMING E-COMMERCE SAVINGS – 2 UTILITIES ARE EXPLORING OPTIONS FOR ADDITIONAL PROGRAM IMPACTS

Retailer Referral Methodology:

- Two utilities interviewed estimated savings via customer surveys to determine the portion of site visitors that purchased efficient equipment due to website exposure.
 - [Product category visitors] x [% that made a purchase since visiting site] x [avg. % of purchases verified as efficient] x [unit energy savings]

	AEP Ohio	PG&E
% Purchased Since Visiting Marketplace	0.1-5.1% ^a	9%
% Influenced by Marketplace	N/A	20.3%
% Efficient Purchases	74.5%	51.6%

- Neither utility has formally claimed savings using this methodology.
- For one utility, non-rebated savings through retailer referrals were estimated to be significantly greater than rebated product savings.

^a AEP Ohio did not average purchases over categories, but instead calculated population weighted percentages by product category. The highest values, around five percent, were for lightbulbs and thermostats. The lowest categories were pool pumps, sound bars, and air purifiers, all 0.3% or below.

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RECOMMENDATIONS – PLATFORM DESIGN: REVIEW USER EXPERIENCE, INCLUDE DASHBOARD, AND INCORPORATE ADDITIONAL EDUCATIONAL INFORMATION

▶ Recommendation: Continue to improve the design and user experience of E-commerce platforms.

- ▶ Also consider the possibility of offering a single, combined E-commerce platform as a way to streamline the user experience.

▶ Recommendation: Create a dashboard of tracking metrics to gauge monthly platform performance

- ▶ Work with E-commerce platform developers to gather regular insights into customer engagement through tracking monthly unique visitors, product category page views, clickthrough rates, and customer satisfaction.

▶ Recommendation: Continue to add educational information to help customers understand the benefits of buying efficient products.

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RECOMMENDATIONS – PLATFORM MARKETING: ADD DIRECT MARKETING VIA EMAIL AND PROMOTIONS

▶ **Recommendation: Leverage direct email for effective marketing outreach (if not already doing so).**

- ▶ Connecticut Utilities could consider either separate engagement or partnering with other program outreach such as Home Energy Reports.

▶ **Recommendation: Continue to offer special-promotions to drive customer engagement.**

- ▶ Work with E-commerce platform vendors and product manufacturers to continue to develop special, limited-time promotions on rebated or high-savings products.

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RECOMMENDATIONS: CONTINUE TO ENHANCE PRODUCT LIST, AND TRACK THERMOSTATS IN MORE DETAIL

▶ **Recommendation: Continue to increase the number of product categories available on E-commerce platforms.**

- ▶ Any products that have existing prescriptive rebates that can be sold through the E-commerce platform should be included (such as electronics and appliances). Further, non-rebated efficient products should be featured to allow for customer education about efficient products (such as battery power stations).

▶ **Recommendation: Track Wi-Fi and Smart (learning) thermostat purchases separately, as well as Tier I and Tier II purchases separately (if not doing so already).**

- ▶ Results from our engineering review of E-commerce impact parameters indicate the amount of potential energy saved is different for these specific products.

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RECOMMENDATIONS – CONDUCT ADDITIONAL RESEARCH TO POTENTIALLY CAPTURE MORE PROGRAM IMPACTS

▶ **Recommendation: Use evaluations of other residential programs to track potential spillover impacts from E-commerce Platform.**

- ▶ Successful platforms could lead to additional savings from purchases outside the platform.
- ▶ E-commerce platforms may help steer customers toward buying an efficient product, even if they buy it from a different retailer, or participating through another program.
- ▶ Consider adding questions to process and impact evaluation surveys (participant and non-participant) for other residential programs for indications of Platform spillover.

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DELIVERABLES OVERVIEW



Evaluation Deliverables

1. PSD Memo (July 2020)

- Update ESRPP measure-specific PSD impact parameters
- Update E-Commerce measure-specific impact parameters

2. Final Report (posted)

- ESRPP:
 - Establish evidence for savings claims (slide 14-16)
 - Outline implementation challenges (slide 9, 13)
 - Outline best practices (slide 10-12)
- E-commerce: outline best practices

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THANK YOU

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