



NY Marketplace Innovative Market Strategies Project

Report

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Acronyms and Abbreviations

APR	annual percentage rate
ATC	add to cart
bps	basis points
CLCPA	Climate Leadership and Community Protection Act
CO ₂	carbon dioxide
CPA	cost per acquisition
DAC	disadvantaged community
GHG	greenhouse gas
GMV	gross merchandise value
GTM	go-to-market
IMS	Innovative Market Strategies Program
KPI	key performance indicator
kWh	kilowatt hours
LLR	loan loss reserve
LMI	low- and moderate-income
MT	market test
MW	megawatts
MWh	megawatt hours
NYPSC	New York Public Service Commission
NYS	New York State
NYSERDA	New York State Energy Research and Development Authority
OEM	original equipment manufacturer
PON	Program Opportunity Notice
POS	point-of-sale



Executive Summary

Enervee deployed the statewide NY Marketplace and conducted a series of market tests (MTs) under a contract with NYSERDA that was procured as part of NYSERDA's Innovative Market Strategies Program¹. This report provides project background, results and key takeaways.

Enervee's digital marketplace is designed to eliminate barriers that prevent New Yorkers from finding and purchasing energy efficient appliances. Consumers can search for products to meet their needs using the Enervee Score as a guide to the most efficient products. The Enervee Score is calculated by comparing the energy efficiency of a product to all other similar products in its category. This score ranges from 0 to 100, with higher scores indicating better energy efficiency. The calculation takes into account key attributes such as the product's energy consumption, size, capacity, and performance. Additionally, the platform integrates instant rebates and the Eco Financing* option to pay with affordable monthly payments to overcome financial barriers faced by households that lack discretionary income and/or cannot access other sources of capital to augment income.

The IMS project kicked off in November 2021, the NY Marketplace launched in July 2022, market tests were conducted from April through December 2023, and the entire project concluded in Q1 2024. In parallel, Enervee's lending partner secured a contract to participate in NYSERDA's Loan Loss Reserve Program², and a partnership with NYSERDA's EmPower+ program³ was kicked off as part of the IMS project.

¹ <https://www.nyserda.ny.gov/All-Programs/Innovative-Market-Strategies-Program>

² <https://www.nyserda.ny.gov/All-Programs/Loan-Loss-Reserve-Program>

³ See <https://www.nyserda.ny.gov/All-Programs/EmPower-New-York-Program>. Income-qualified New Yorkers enrolled in EmPower+ are directed to the online marketplace to choose their refrigerator or freezer. At checkout, they will see an EmPower credit applied to the purchase price, bringing down the total cost to zero.

* Eco Financing by Enervee loan programs are owned and funded by Lewis & Clark Bank, Member FDIC.



The work was organized around a series of six tasks, including project management and three workstreams: 1) product development, 2) operating a statewide NY Marketplace pilot and conducting market tests and 3) developing a go-to-market (GTM) strategy to scale the program.

The bulk of the report focuses on results from the NY Marketplace pilot, including achievement of key performance indicators (Chapter 2.1), insights gained from the following three market tests (Chapter 2.2) and general learnings from the pilot overall (Chapter 2.3):

- Market Test 1: Eco Financing as a payment option
- Market Test 2: Eco Financing + standard rebates
- Market Test 3: High rebates for credit-challenged borrowers with credit scores below 580.

The integration with NYSERDA's EmPower+ equity program to test use of the NY Marketplace as a modern online delivery channel for the statewide income-qualified appliance giveaway program is discussed in Chapter 2.2.

Key takeaways from the IMS project include:

- The project largely achieved its intended outcomes, although delays impacted total sales and related metrics.
- Online retail Eco Financing empowered many consumers to make 1-off efficient appliance purchases.
- Eco Financing over proportionately benefited lower-income New Yorkers and people located in disadvantaged communities.
- The NY Marketplace effectively overcame financial barriers experienced by New Yorkers with at least “fair” credit, but new approaches are needed to make the program even more inclusive.
- Using marketing strategies inclusive of paid advertising, email marketing, and cross-promotion, the NY Marketplace pilot achieved a high add-to-cart rate, significantly better than the e-commerce industry average. This indicates that the



platform effectively engages users and encourages them to consider energy-efficient products.

- It is too early to fully assess the EmPower+ program integration.

Taking advantage of natural replacement cycles to deploy cutting-edge technologies by eliminating barriers is a largely untapped opportunity to cost-effectively reduce residential greenhouse gas emissions and ensure equitable outcomes across New York State.



1 Background

Funding through the New York State Energy Research and Development Authority (NYSERDA)'s Innovative Market Strategies (IMS) Program supported replicable and scalable approaches to building decarbonization, including innovative approaches with a pathway to scale low-carbon solutions for disadvantaged communities (DACs)⁴. Following a competitive solicitation, the statewide NY Marketplace IMS project was kicked off in November 2021 and will conclude in Q1 2024⁵.

1.1 Context

According to a longitudinal study of climate change beliefs, risk perceptions, and policy support across the country led by Yale University, New York ties for third place among states having the highest percentage of adults – 70% – who think citizens should do more to address global warming⁶. The NY Marketplace is enabling New Yorkers to do just that, namely to buy consumer products that save energy and avoid greenhouse gas emissions. Thus the program directly responds to New York stakeholder calls for assistance with purchase decision-making in the context of emergency replacements, as well as support so that they can purchase and install plug-in appliances themselves.

According to the Statewide LMI Portfolio 2020 Stakeholder Input Companion Document filed by NYSERDA and IOUs⁷, stakeholders called for assistance with purchase decision-making in the context of emergency replacements, as well as support so that they can purchase and install plug-in appliances themselves, specifically, they:

- Recommended that "for single family homes and two- to four-unit buildings, there should be opportunities for the homeowner or building owner(s) to self-install energy efficiency measures that do not require special expertise, or for which the owner is qualified". The report also discussed that "plug-in appliances do not require special training or expertise and may be installed by LMI customers".

⁴ <https://www.nyserda.ny.gov/All-Programs/Innovative-Market-Strategies-Program>

⁵ The project was originally slated to run for two years, but was extended in October 2023.

⁶ [Yale Climate Opinion Maps 2021](#)

⁷ [Statewide LMI Portfolio 2020 Stakeholder Input Companion Document](#)



- Asked whether there are efforts to support short-term purchase decision-making: "Often decisions on energy appliances are made in a very short time frame when a quick replacement is needed. Many of the Implementation Plan strategies seem targeted at decisions made with the luxury of a long planning time."

The NY Marketplace project responds directly to these stated low- and moderate-income needs, and Enervee's market research⁸ further validated that the project would be likely to resonate with low- and moderate-income New Yorkers:

- When choosing a product or appliance, over 97% typically research products online before buying, 70% "almost always".
- Low- and moderate-income (LMI) consumers would take advantage of the opportunity to replace broken appliances with highly efficient models – and substantial co-pays are feasible for 96% of them⁹. For those with incomes below \$25,000, only about 10% said they could not afford any co-pay, while roughly half said they could pay 50% to 100% of the cost themselves. This is consistent with the fact that broken appliances need to be replaced and points to a massive opportunity to tap into natural replacement cycles and steer LMI private investment into efficient products, much more cost-effectively than giving away products for free.
- Financing is an attractive option, as it eliminates the up-front purchase price barrier completely. Just over half of those with household incomes below \$25,000 said they would prefer to pay \$16 a month for 3 years (knowing that this would amount to a total cost of \$564, assuming an 8% interest rate), rather than paying the full \$500 purchase price of a new efficient appliance at checkout.
- In addition, 46% said they agreed with this statement: "When I buy energy-using products for my home, I often buy used products", with 25% saying they "strongly agree". Since used appliances can be expected to be less efficient than new product purchases, there is significant potential for bill savings, if LMI customers can be empowered to purchase new, efficient products.

⁸ To provide market validation for Enervee's IMS proposal, a representative survey of 200 New Yorkers with household incomes below \$100,000 was conducted by Enervee in September 2020.

⁹ By co-pay, we are referring to the purchase price to be covered by the consumer at the time of purchase after any hypothetical utility discounts have been deducted.



New Yorkers purchase tens of millions of energy using consumer products annually¹⁰. Online sales of major domestic appliances meanwhile exceed 50% of all US sales¹¹, and the modern shopping journey increasingly begins online. Transforming the online buying experience is therefore essential to achieve aggressive greenhouse gas and equity goals. While deep retrofits and electrification are a valid approach to target for home and building owners, it is essential to also ensure that every 1-off retail purchase is as efficient as possible, not the least to keep electric load growth and electricity bills affordable as electrification advances.

1.2 Project Overview

Enervee's digital marketplace is designed to eliminate barriers that prevent New Yorkers from finding and purchasing energy efficient appliances. Consumers can search for energy efficient products to meet their needs using the Enervee Score¹² as a guide. The intentional design of Enervee's marketplace platform has been proven to lead to better buying decisions, even without financial incentives (Arquit Niederberger, 2022; Arquit Niederberger, 2020; Arquit Niederberger & Champniss, 2018). Additionally, the platform integrates instant rebates and the Eco Financing option¹³ to pay with affordable monthly payments to overcome financial barriers facing households that lack disposable income and/or have poor credit.

The stated goals of the project were to:

- Launch a statewide NY Marketplace with new financing and instant discount functionality;
- Provide customers with ability to make informed choices when making energy efficient product purchases;
- Confirm product-market fit, with people in DACs (including low-income households outside of DACs) being the target audience;

¹⁰ This estimate is based on total U.S. sales of approximately 400 million units (from the source in the following footnote) and the NY share of the total U.S. population of just under 6%.

¹¹

<https://www.statista.com/outlook/cmo/household-appliances/major-appliances/united-states#sales-channels>

¹² <https://www.enervee.com/score>

¹³ <https://www.enervee.com/eco-financing>



- Deliver measures with more favorable program metrics than current NYSERDA residential programs;
- Obtain data on key metrics to validate a scalable business model and develop a viable go-to-market (GTM) strategy to grow the program post-pilot.

NYSERDA support enabled additional development of the Enervee platform, along with funding a series of market tests to gain insights on the ability of this innovative program to overcome barriers and challenges preventing lower-income consumers in DACs from buying energy efficient products at retail. The work was organized around a series of six tasks, including project management and three workstreams: 1) product development, 2) operating a statewide NY Marketplace pilot and conducting market tests and 3) developing a GTM strategy to scale the program.

Product development

Product development included setting up and hosting the NY Marketplace with integrated Eco Financing and instant discounts at <https://ny.enervee.com/>; building A/B testing capabilities to support marketing effectiveness; creating KPI and transactional dashboards to track project performance; and working out the requirements and building the EmPower+ online marketplace hosted at <https://empower.enervee.com/> to serve as an online delivery channel for the EmPower+ program.

NY Marketplace pilot

This workstream included a series of market tests, supported by digital marketing efforts (as described in Chapter 2.3.7). Three market tests were conducted over a total of 7.5 months:

1. Eco Financing as a payment method, without rebates (4/11/23 – 8/28/23)
2. Standard rebates on selected product categories, in addition to Eco Financing (8/28/23 – 12/31/23), and
3. High rebates on major appliance categories offered to credit-challenged borrowers whose Eco Financing applications had been declined due to low credit score (9/18/23 – 12/31/23).



The design of the market tests, market test results and insights gained from them are described in detail in Chapter 2.2 of this report.

Under Market Test 1, Eco Financing was launched in April 2023, providing NY Marketplace customers with the option of paying for their appliances with no money down and affordable monthly payments, rather than using a credit or debit card to pay the full cost at checkout. Although formally outside of this project, Enervee also worked with Lewis & Clark Bank to secure an allocation from NYSERDA's Loan Loss Reserve Program¹⁴, through which the State of New York covers a portion of the losses on defaulted loans, to lower the risk of the Eco Financing consumer lending program. The NYSERDA loan guarantee made it possible for Enervee to source private capital for a loan product that would overcome the financial barriers faced by people with limited disposable income and poor credit. Specifically, we were able to spread payments out over 60 months (with no penalty for early repayment), forgo origination fees, charge interest rates as low as 9.99% for those enrolled in autopay, lend to borrowers with credit scores as low as 580, and finance purchases as small as \$200. Eco Financing was a key component of the NY Marketplace project and market tests and remains available to New Yorkers using the NY Marketplace post-pilot.

A collaboration with NYSERDA's EmPower+ program¹⁵ was also developed under the pilot workstream, as described in Chapter 3 of this report, was launched in November 2023, and is continuing post-pilot. Under EmPower+, income-qualified New Yorkers can get free, energy efficient refrigerators and freezers to replace existing inefficient units (which are properly recycled as part of the program). NYSERDA wanted to test whether providing participants with a modern e-commerce shopping experience could benefit the program and participants.

Enervee also conducted pilot participant surveys. The purpose of these surveys was to obtain participant feedback on the various program offerings to complement sales transaction data. The questions were designed to obtain data on themes such as: customer satisfaction,

¹⁴ <https://www.nyserda.ny.gov/All-Programs/Loan-Loss-Reserve-Program>

¹⁵ <https://www.nyserda.ny.gov/All-Programs/EmPower-New-York-Program>



consumer value proposition, Marketplace impact on buying decisions, rebates, Eco Financing, and participant demographics. Five survey instruments were used to tease out various insights from the market tests: Two standard surveys for Market Test 1 and 2 purchases in non-rebated categories, differentiated by the payment method used by the customer (either Eco Financing or credit/debit); two additional survey instruments (also differentiated by the two payment methods) developed specifically for those who made purchases under Market Test 2 in rebated categories; and a final survey instrument to obtain feedback on Market Test 3. The number of responses obtained per question varies, because some were common across all survey instruments (like customer satisfaction), while others were specific to a market test or payment method.

Go-to-market strategy

The final workstream culminated in a series of recommendations to scale the NY Marketplace program post-pilot, drawing on material in this report.



2 NY Marketplace Pilot

2.1 Key Performance Indicators, Targets & Outcomes

Based on the goals of the project, five key performance indicator (KPI) targets were established at the outset of the project, spanning technology innovation, product-market fit and favorable pilot program performance relative to existing NYSERDA programs. For each KPI, this section describes the KPI, reports on goal attainment, summarizes results and offers a discussion of the KPI and results achieved. Beyond these KPIs, a wealth of data and insights were obtained during the pilot and are discussed in the following sections of the report.

Key Performance Indicator (KPI) Targets

Technology Innovation

- Successfully test and launch a white-labelled Statewide LMI Marketplace with new financing and instant discount functionality on time and within budget.

Product-Market Fit

- Number of LMI pilot participants exceeds 10% of NYSERDA 2020 KPIs for Single Family low- & moderate income combined = at least 1,170 LMI participants in the pilot
- Achieve a 70% share of “Satisfied” participants among total DAC and Non-DAC participants

Favorable Pilot Program Performance

- Drive at least 10% of the number of average annual measures that NYSERDA achieved through EmPower in 2019/2020 for refrigerator replacement (=133 units), freezer replacement (=29 units) and smart thermostats (=194 units)



- Amount of funds leveraged under the Pilot program is at least 10% of the amount of NYSERDA's Single Family LMI combined 2020 leveraged funds = at least \$974,430

Technology Innovation

- Results relative to target. The project achieved the KPI goal to “successfully test and launch the NY Marketplace with new financing and instant discount functionality”. However, while the NY Marketplace was delivered within budget and on time, the launch of the Eco Financing component was delayed by 10 months.
- Discussion. Enervee successfully launched the innovative, statewide NY Marketplace and leveraged private capital to provide consumers with the option of paying for their energy efficient online purchases with integrated Eco Financing. Bringing this innovation to market involved not only new technology development, but also new and expanded partnerships with banks, retailers and various existing clean energy (EmPower+) and financing programs (NYSERDA Loan Loss Reserve Program). While the NY Marketplace itself was launched on time, Eco Financing came later, due to the fact that Enervee's chosen lending partner was acquired and no longer able to provide critical Eco Financing services. As a result, Enervee needed to contract with a new lending partner, Lewis & Clark Bank, and build loan origination and servicing platforms involving multiple service providers. The team also facilitated a contract with NYSERDA for the new lender to participate in the NYSERDA LLR Program. Despite these unforeseen circumstances, Enervee was able to launch Eco Financing in April 2023 and initiate market testing, albeit 10 months behind schedule. To ensure sufficient data from market tests, the project team and NYSERDA agreed to extend the project beyond the originally planned completion date by several months, so the market tests could continue through the end of 2023. Nevertheless, this delay and the resulting shorter market tests¹⁶ negatively impacted outcomes on several of the other pilot KPIs.

¹⁶ Market testing was originally scheduled to begin in June 2022 and conclude at the end of October 2023, providing for 16 months for testing. Ultimately, the delay in launching Eco Financing meant that testing was limited to only a 7.5-month period, from mid-April 2023 through the end of 2023.



Product-Market Fit: Low- and Moderate-Income Participants

- Results relative to target. 173 LMI New Yorkers participated in the pilot, achieving 17.5% of the KPI target of 1,170 participants.
- Discussion. The project aimed to demonstrate that the NY Marketplace offerings were appealing to low- and moderate-income (LMI) customers. An absolute LMI participation target was set at 1,170 LMI participants, based on 10% of NYSERDA's 2020 KPIs for Single Family low- & moderate income combined.

However, New York's Climate Leadership and Community Protection Act (CLCPA)¹⁷ requires the identification and consideration of disadvantaged communities (DACs) in implementing the CLCPA and other State-led actions. A requirement of 35% – with a goal of 40% – of the benefits from the State's investments must be directed to DACs as defined by New York's Climate Justice Working Group (CJWG).

Instead of utilizing an income-based metric to measure LMI participation, consistent with NYSERDA's 2020 KPIs and the full definition of DAC eligibility for the purpose of accounting for clean energy and energy efficiency investments¹⁸, the project adopted the geographic DAC definition established by the CJWG. This solution was selected to support geographic targeting and avoid income verification requirements that would add operational complexity and might limit participation, but because over 15% of LMI households are located outside of geographic DACs¹⁹, some LMI participation may not have been captured within program reporting.

As a result, the geographic DAC proxy metric would be expected to yield significantly fewer participants than if the same income metric used for the NYSERDA targets had been applied, making it more difficult to achieve the KPI.

That having been said, the three primary challenges to meeting the LMI participation goal were: 1) a large share of Eco Financing loans were declined, 2) there was less time than originally planned to conduct the market tests, for the reasons outlined above²⁰

¹⁷ <https://climate.ny.gov/>

¹⁸ <https://climate.ny.gov/Resources/Disadvantaged-Communities-Criteria>

¹⁹

https://climate.ny.gov/-/media/Project/Climate/Files/Disadvantaged-Communities-Criteria/LMI-daccriteria-fs-1-v2_acc.pdf

²⁰ If we assume that the number of LMI participants during the 7.5-month pilot would have scaled linearly with the planned 16-month pilot duration, the program would have seen 437 LMI participants.



and 3) the third market test was redesigned and implemented to target a narrow consumer segment. The third market test was originally designed to provide zero-interest financing without incentives. However, since roughly 75% of Eco Financing applications were declined, almost 85% of which were declined because they did not meet the minimum credit score requirement of 580 set by NYSERDA's LLR Program, a zero-interest loan offer would face the same challenges with declined applications. Instead, the third market test was redesigned to focus on serving 542 invitees, a subset of the participants declined for Eco Financing due to low credit score. This redesign traded potential increased participation in exchange for deeper learnings on overcoming financing barriers for LMI populations.

While the absolute participation KPI was not met using the Climate Act DAC definition, it is important to note that DAC participants accounted for 31.4% of the 653 purchases that took place between April and the end of December 2023. This share of DAC participation in the NY Marketplace pilot is just below the share of New York situated in DACs (currently 35%²¹). However, when looking at just the 245 financed purchases that cost more than \$200 (essentially leaving out the hundreds of thermostat purchases not eligible for financing), 51.0% of purchases were made by people located in DACs.

It is important to note that this level of DAC participation was achieved in a program open to all New Yorkers without financial incentives targeting people living in DACs. This is an important result and points to the potential of this innovative approach to deliver on NYSERDA's 2023-26 strategic priority of building an inclusive clean energy economy²², including ensuring that a substantial portion of new activities in energy efficiency benefit New Yorkers with low-to-moderate incomes²³.

Overall, the high demand for the Eco Financing loan product during the pilot suggests a good product-market fit, in principle, with nearly three-quarters of gross

²¹

https://climate.ny.gov/-/media/Project/Climate/Files/Disadvantaged-Communities-Criteria/LMI-daccriteria-fs-1-v2_acc.pdf

²²https://www.nyserda.ny.gov/-/media/Project/Nyserda/Files/About/Strategic-Plan/GEN-SO-2023-r1-v1_acc.pdf

²³ <https://www.nyserda.ny.gov/About/Publications/New-Efficiency>



merchandise value (GMV), or the full amount customers pay before deductions, financed and a total of 2,280 Eco Financing applications.

Product-Market Fit: Customer Satisfaction

- Results relative to target. 86% of DAC and 89% of non-DAC participants were satisfied to some degree with their NY Marketplace shopping experience overall, over 75% “completely” or “very” satisfied, significantly exceeding the customer satisfaction goal of at least 70% of each group being satisfied.
- Discussion. Customers were asked how satisfied they were with their shopping experience overall. The responses on a 7-point scale are shown in Table 1.

Table 1. Customer Satisfaction Survey Results

Source: Responses to the survey question: “How satisfied are you with your NY Marketplace shopping experience overall?” N=147

Response	DAC Count	DAC Percentage	Non-DAC Count	Non-DAC Percentage
Completely satisfied	21	58.3%	76	68.5%
Very satisfied	6	16.7%	20	18.0%
Somewhat satisfied	4	11.1%	3	2.7%
Neither satisfied nor dissatisfied	0	0.0%	2	1.8%
Somewhat dissatisfied	5	13.9%	3	2.7%
Very dissatisfied	0	0.0%	1	0.9%
Completely dissatisfied	0	0.0%	6	5.4%

The vast majority of both DAC and non-DAC participants were highly satisfied with their overall shopping experience, spanning all three market tests (which presented different user experiences). Of the six participants who were “Completely dissatisfied” with their order, five ordered a thermostat during Market Test 2, and one ordered a Leaf Blower during Market Test 1. Two did not receive their product, two were dissatisfied with the product, and two did not give a reason for their dissatisfaction.



Favorable Pilot Performance: Units Sold

- Results relative to target. The project aimed for at least 10% of the number of transactions that NYSERDA achieved through the EmPower program in 2019 for refrigerators, freezers, and smart thermostats. These targets and actual units sold are shown in Table 2. Under the pilot, 446 units in these categories were sold, exceeding the KPI by 25%.

Table 2. Units Sold Relative to Target

Source: Purchase transaction data

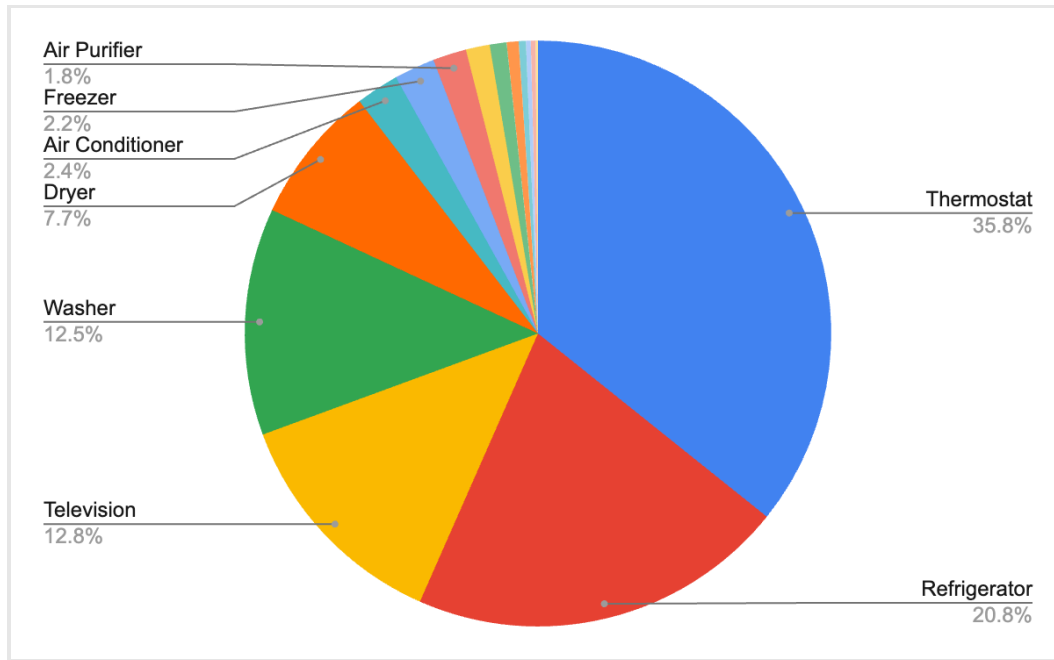
Measure	Actual Units Sold	Target Units	KPI Achievement Rate
Refrigerator	158	133	118.8%
Freezer	17	29	58.6%
Smart Thermostat	271	194	139.7%
TOTAL	446	356	125.3%

- Discussion. The project demonstrated the ability of NY Marketplace to drive unit sales of products included in EmPower+ through the online marketplace channel. Across all three categories, unit sales exceeded the target by 25%. The pilot over-achieved the unit sales goal for smart thermostats and refrigerators and under-achieved for freezers. Thus, the pilot demonstrated the ability to drive private investment into efficient product purchases with this new approach, as an alternative to giving products away at no cost. More importantly, New Yorkers placed a total of 653 orders and purchased 758 energy efficient products, spanning 15 categories, during the three market tests (Figure 1).



Figure 1. Units Sold by Category

Source: NY Marketplace transaction data n = 758



Favorable Pilot Performance: Leveraged Funds

- Results relative to target. For the purposes of this project, leveraged funds included: 1) the amount of money spent by New Yorkers making purchases on the NY Marketplace and 2) the amount of any discounts negotiated by Enervee from retail fulfillment partners. The project aimed to leverage at least 10% of the amount of NYSERDA’s Single Family LMI combined 2020 leveraged funds KPIs goal²⁴, equivalent to \$974,430 in private investment. The project leveraged \$432,824 in private investment (Table 3), 44.4% of the goal.

Table 3. Leveraged Funds

Source: Enervee incentive and transaction data.

Note: Leveraged participant dollars include purchases made by credit card and initial loan principal for financed

²⁴ According to the NY Clean Energy Dashboard, NYSERDA planned to leverage \$9,744,300 in funds from other sources in 2020.



purchases (for simplicity interest income on financed purchases, which will accrue over the term of the loan, is not included).

Source of Funds	Amount
Pilot participants DAC	\$194,328
Pilot participants non-DAC	\$231,536
Google Nest product discounts	\$6,960
Total Leveraged Funds	\$432,824

- Discussion. Similar to the discussion of the LMI KPI goal above, there were several reasons why the leveraged funds KPI target was not met (high Eco Financing loan decline rate, shorter market tests than planned, limited target audience for MT 3). Assuming that the amount of leveraged funds during the 7.5-month pilot would have scaled linearly with the planned 16-month pilot duration, for example, the project would have leveraged over \$923,000 in private investment, within 5% of the KPI target.

Most of the investment (98.4%) came from participating New Yorkers, with 44.9% from people located in DACs. The original equipment manufacturer (OEM) partner, Google Nest, contributed \$6,960 in product discounts. Given the limited time promoting thermostats on the marketplace, this number should be considered very promising given that 93% of thermostat orders had a discount associated with them. Chapter 2.3.8. speaks to the potential to scale OEM/retailer contributions going forward. The fact that the NY Marketplace program was able to steer significant DAC private investment into energy efficient product purchases is an exciting result that demonstrates the effectiveness of small dollar Eco Financing, embedded in a well designed online marketplace platform, to eliminate long standing barriers facing consumers, including those in disadvantaged communities. This result opens up the door to a new strategy to drive equitable decarbonization, which is sorely needed when recognizing that the current approach of offering 100% product subsidies is not a scalable climate solution (NYPSC 2016; Berkeley Law, 2023).



2.2 Market Test Design & Learnings

The NY Marketplace pilot was designed to investigate the effectiveness of integrating program offers with the Marketplace design, in a series of three market tests documented below. While the consumer-facing NY Marketplace site was launched in July 2022, neither Eco Financing nor rebates were initially available. During this baseline period, which ran for 9 months (until the launch of Eco Financing in April 2023), participation was virtually non-existent, as anticipated²⁵.

A high-level description of the three Market Tests is provided below. While it was intended for the duration of each test to be determined by how long it took to reach 500 purchases, this was adjusted to allow time to complete the remaining Market Tests.

Market Test	Test Duration	Key Dates	Test Overview	Number of Orders	DAC Participation	Popular Categories
Test 1	7.5 months	04/11/2023 - 08/28/2023	Eco Financing available as a payment method alongside credit/debit cards.	240	50.4%	Refrigerators, Clothes Washers, Electric Clothes Dryers, Televisions
Test 2	4 months	08/28/2023 - 12/31/2023	Standard rebates on selected product categories in addition to Eco Financing.	402	20.4%	Thermostats, Refrigerators, Clothes Washers, Electric Clothes Dryers

²⁵ During the baseline period, one refrigerator was purchased via the NY Marketplace.



Test 3	3.5 months	09/18/2023 - 12/31/2023	High rebates for credit-challenged borrowers with credit scores below 580, only those whose Eco Financing applications were declined.	11	63.6%	Clothes Washers, Electric Clothes Dryers, Refrigerators, Air Conditioners
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2.2.1 Eco Financing (Market Test 1)

Test Overview

Market Test 1 made Eco Financing available as a payment method, in addition to credit/debit cards, with a view to understanding the ability of financing to overcome financial barriers that prevent priority segments of the population from buying energy efficient products at retail.

- Research questions: Does this payment option enable LMI / DAC to buy efficient products on their own?
- Target audience: Open to all New Yorkers, but program designed to self-select for LMI, using DAC location as a proxy
- Payment method options:
 - Eco Financing at 9.99% interest for autopay, 60-month term
 - Credit/debit card
- Measure categories that could be financed: air purifiers, clothes dryers (electric), clothes dryers (gas), clothes washers, dehumidifiers, dishwashers, freezers, monitors, projectors, refrigerators, room air conditioners, sound bars, televisions, thermostats
- Product qualification: Energy Star certified, and where applicable comply with the requirements and exclusion criteria from the NY TRM version 10. Exclusions were



based on product features, for example, clothes washers with a volume above 8 cubic feet and dehumidifiers with a capacity greater than 185 pints/day.

- Test duration & key dates
 - Test begin (date Eco Financing launched): 4/11/23
 - Marketing launch: 4/13/2023
 - Test end: 8/28/2023. In addition, those transactions completed during the MT2 timeframe that were for product categories that were featured on the site during MT2, but which were not eligible for rebates under MT2 (i.e., air purifiers, gas dryers, dehumidifiers, monitors, projectors, sound bars, and televisions), were counted as MT1 purchases during analysis. Of the total 240 transactions analyzed as part of MT1 (Eco Financing available, no rebates), 222 of these transactions occurred during the MT1 time period 4/13/2023 to 8/28/2023, and the rest subsequently, through the end of 2023.

Test Results

- Number of orders: 240
- DAC participation: People in disadvantaged communities placed 50.4% of orders overall, and 52.9% of financed orders.
- Payment method: Overall, 78.8% of purchase transactions were financed (Table 4), with the remainder paid for using a credit or debit card. Among DAC participants, the share of financed orders was even higher, at 82.6%.

Table 4. Market Test 1 Payment Method by DAC Status

Source: Enveree transaction data, N = 240

Payment Method	Total Orders	DAC Orders	Non-DAC Orders
Eco Financing	189	100	89
Credit/Debit	51	21	30

- Most popular categories. The top three major domestic appliances were refrigerators, clothes washers and electric clothes dryers, and televisions were the most popular item in the electronics category (Table 5).



Table 5. Market Test 1 Most Popular Categories and NYS Electricity Expenditures

Sources: Units sold and share by GMV; N = 240; program transaction data; NYS residential electricity expenditure: <https://www.eia.gov/consumption/residential/data/2020/state/xls/ce5.5.st.xlsx>

Category	Number of Units Sold	Share by Units Sold	Share by GMV	NYS Residential Electricity Expenditure
Television	85	29.2%	22.6%	\$750,000,000
Refrigerator	63	21.6%	36.8%	\$1,020,000,000
Clothes Washer	44	15.1%	16.7%	\$50,000,000
Clothes Dryer (electric)	34	11.7%	12.1%	\$290,000,000
Freezers	4	1.4%	0.8%	\$130,000,000
Cooking Appliances	N/A	N/A	N/A	\$140,000,000

- Refrigerators account for 10% of electricity consumption in NY homes and cost utility customers over \$1 billion per year (Table 5). The second largest plug load category in terms of electricity bills is televisions, followed by clothes dryers, cooking appliances, freezers, and clothes washers.

Test Insights & Implications

- The NY Marketplace was able to deliver electricity bill savings across a large number of product categories purchased in large volumes each year in the course of normal replacement cycles. Expanding LMI / DAC programs to include as many plug load end uses as possible, particularly those like refrigerators, televisions and electric dryers, which account for a large share of electric bill expenditures and which were the most frequently purchased measures via the NY Marketplace pilot, can increase program savings.
- With 35% of all New York situated in DACs, DAC participation was overrepresented in this market test by 44%, without the use of rebates.
- Eco Financing is a popular payment method, with 4 out of 5 orders financed. It empowers New Yorkers to buy efficient products by breaking down the lump sum transaction cost into affordable monthly payments. This demonstrates the need for



affordable financing options for both DAC and non-DAC participants with lower incomes.

- Combined with survey results reported on under Chapter 2.3.4, these market test results demonstrate the potential to provide lower income, credit-challenged and disadvantaged community households with impactful, market-based plug load programs that do not rely on giving products away for free, or with large rebates.

Low approval rate for Eco Financing loans (only 22% during MT1), mostly due to the eligible credit score floor of 580. Other reasons can include frozen credit scores, being recently rejected for credit or rejected too frequently, or flags for fraud, among others. Another financing solution to meet the needs of people with poor credit is needed. This finding led Enervee to design Market Test 3 to see whether people who could not get loans could be served with rebates at levels higher than typical utility rebates. In addition, NYSERDA's LLR Program should consider allowing lenders to experiment with alternative underwriting criteria to better serve those with lower credit scores when making purchases of energy efficient measures or appliances. Such approaches are already in widespread use and gaining traction. For example, NY Fed economists reported that, among those with credit scores below 620, 43% use "buy now, pay later" (BNPL), and that BNPL lenders are using alternative underwriting and are reportedly able to approve around 70% of applications on average, while maintaining a charge-off rate below 4%²⁶. As an example, some lenders focused on this LMI, low-credit score customer base are using cash flow information from the borrower's bank account to better understand when the borrower has regular deposits into their bank account and therefore has higher available balance to make successful payments. They are then using that data to help schedule the customer's autopay date to increase the likelihood of a successful repayment.

2.2.2 Eco Financing + Standard Rebates (Market Test 2)

²⁶ <https://libertystreeteconomics.newyorkfed.org/2023/09/who-uses-buy-now-pay-later/>



Test Overview

Market Test 2 looked at the interplay of Eco Financing and rebates at levels typical of New York utility energy efficiency programs, which we refer to as "standard" rebates for the purposes of the pilot. The specific rebate levels are indicated below.

- Research questions:
 - How do "standard" rebates affect participant characteristics when both Eco Financing and credit/debit payment options are available to shoppers?
 - Does making "standard" rebates available change the models purchased and their energy efficiency?
- Target audience: Open to all New Yorkers, but designed to self-select for LMI, using DAC location as a proxy
- Payment method options:
 - Eco Financing at 9.99% interest for autopay, 60-month term
 - Credit/debit card
- Product qualification: Same as for Market Test 1
- Categories with rebates / rebate levels:
 - Air Conditioners: \$75
 - Clothes Dryers (electric only): \$50
 - Clothes Washers: \$50
 - Dishwashers: \$50
 - Freezers: \$50
 - Refrigerators: \$50
 - Smart Thermostats: \$100 (due to high demand, these rebates were only available from 8/31-9/2). For a limited time, additional discounts were provided by partners which lowered the price of the device to \$0, only requiring customers to pay for shipping and install
- Other categories featured on the site and still eligible for Eco Financing, but without rebates: air purifiers, clothes dryers (gas), dehumidifiers, monitors, projectors, sound bars, televisions. Note that purchases of items from these categories were added to the MT 1 transactions for analysis purposes and are not included in the MT 2 test results discussed below.



- Test duration & key dates
 - Test begin (rebates live): 8/28/2023
 - Marketing launch: 8/30/2023
 - Test end: 12/31/2023

Test Results

- Number of orders: 402 total, 36.1% of which were major appliances²⁷ (and the remainder, thermostats)
- Payment method: Among MT2 rebated purchases, 56 (13.9%) were financed (Table 6). Excluding thermostats (which were not eligible for financing), 38.6% of rebated purchases were financed.
- DAC participation: People located in DACs accounted for 20.4% of all orders with rebates under MT2 and 31.7% of all major appliance orders (Table 6). Nearly 45% of financed appliance purchases with rebates were made by people located in DACs. Similar to MT1, DAC participants relied heavily on Eco Financing, with 54.4% of all rebated appliance purchases financed.

Table 6. Market Test 2 Order Metrics

Sources: Program transaction data and participant surveys (last two metrics); n = 402

Comparison Metric	Financed	Credit/Debit
Number of total orders (appliances + thermostats)	56	346
Number of appliance orders	56	89
DAC payment method for appliances	54.4%	45.6%
Non-DAC payment method for appliances	31.3%	68.7%

²⁷ Major appliances includes laundry appliances (clothes washers & dryers) and kitchen appliances (dishwashers, refrigerators & freezers).



Table 6. Market Test 2 DAC Share

Sources: Program transaction data and participant surveys (last two metrics); n = 402

Comparison Metric	Percentage of Orders
DAC share of total orders	20.4%
DAC share of thermostat orders	14.0%
DAC share of appliance orders	31.7%

- Market Test 2 metrics relative to Market Test 1: Overall, 20.4% of MT2 participants were located in DACs, which is much lower than the share of DAC participants in MT1, which did not have any rebates available (Table 7). Although 30% of all DAC orders (Table 7) and over half of all appliance orders were financed under MT2 (Table 6), financing was used by people in DACs at a lower rate under MT2 with rebates available.

Table 7. Comparison of Market Test 2 and Market Test 1 Metrics

Sources: Program transaction data (first 4 metrics), participant surveys (last two metrics)

Comparison Metric	MT2 (rebates)	MT1 (no rebates)
Share of DAC participants	20.4%	50.4%
Share of orders financed	13.9%	78.8%
Share of DAC orders financed	30.5%	82.6%
Eco Financing approval rate	25%	22%

Test Insights & Implications

- The financing payment option contributes significantly to a more inclusive rebate program that reaches traditionally underserved consumer segments. This result is consistent with outcomes from utility rebate programs, which do not see high participation among LMI / DAC. MT2 participant surveys also supported this finding. When asked which program features were most important, only 19% of those who paid



with Eco Financing chose “rebate”, while the rest chose “affordable monthly payments” or other features tied to financing.

- Market Test 2 with rebates reached a much lower share of people located in DACs than did Market Test 1, which at first glance appears counterintuitive, since Eco Financing was available as a payment method under both tests for purchases of at least \$200. However, smart thermostats sold with rebates were the largest category under MT2, a category not necessarily seen as essential and which cannot be financed (because they fall below the \$200 threshold for Eco Financing). As a result, only 14% of thermostats were purchased by people in DACs, skewing the overall DAC participation rate under MT2.
- While adding Eco Financing to traditional rebate programs may drive more equitable access to rebates, the results of MT2 – viewed in the context of MT1 results achieved with Eco Financing alone – do not support the conclusion that rebates at levels that are cost-effective for utility programs are necessary to overcome financial barriers facing LMI / DAC when Eco Financing is available, as the equity outcomes were as good or better under MT1.

2.2.3 High Rebates for Credit-Challenged (Market Test 3)

Test Overview

During the pilot program, nearly two-thirds of those who tried to pay for their purchase of energy efficient equipment or measure with Eco Financing were rejected, because they had a credit score below 580 (or no credit score at all). Market Test 3 was developed to see whether people who were rejected for Eco Financing in either MT1 or MT2 due to their poor/insufficient credit history would purchase products similar to what they had planned to buy when offered a sizable rebate, much higher than typical utility rebates, but not covering more than 75% of the product cost.

- Research questions:
 - Are consumers declined for Eco Financing able to participate with high rebates?
 - What is the share of DAC participation in high rebates?
 - What are the buyer demographics for those participating in high rebates?



- Target audience: People who applied for an Eco Financing loan to make a purchase in rebate categories but were rejected due to poor credit (below 580, which is the lower limit allowed under NYSERDA's LLR Program). Participation by email invitation only.
- Payment method options: credit/debit card only
- Categories with rebates / rebate levels:
 - Air Conditioner: \$250
 - Clothes Dryer (electric only): \$415
 - Clothes washer: \$500
 - Dishwasher: \$280
 - Freezer: \$375
 - Refrigerator: \$280 (base), plus \$160 additional for larger models (above 18 cubic feet)

Rebate levels were designed to cover a significant share of the purchase price (roughly 75% of the price of the lowest cost qualified products)

- Test used a dedicated microsite featuring eligible categories and the product models previously selected for purchase by participants. The microsite was disabled 12/31/2023 when the market tests ended.
- Test duration & key dates
 - Test begin (MT3 site with rebates live): 9/18/2023
 - Marketing launch: 9/21/2023
 - Test end: 12/31/2023

Test Results

This test was limited by target audience (only those whose Eco Financing applications had been declined due to poor or missing credit score, and sought to make a purchase in selected categories), number of categories and short duration. As a result, invitations were sent to only 542 people, and there were only 11 orders and 4 survey responses during the pilot, so the data are informative, but should be considered with these small numbers in mind.

Transaction data provide the following metrics:

- Share of DAC participants: Seven of the 11 participants (63.6%) were located in DACs.



- Average cost to participant after rebate: \$335.68, based on an average instant discount of \$541.81 (62%).
- Products purchased: 6 clothes washers, 4 electric clothes dryers, 2 refrigerators, 1 air conditioner. Washers and dryers were the categories with the highest absolute rebates.

Enervee also obtained the following results from MT3 participant surveys:

- Importance of “high” rebate: 3 out of 4 respondents said it would be “extremely unlikely” that they would have bought the efficient product they did, if there had been no rebate available.
- All respondents “strongly agreed” with these two statements, pointing to the value that the NY Marketplace can offer traditionally underserved New Yorkers:
 - “The NY Marketplace made it quick and easy for me to buy the efficient product I did.”
 - “The zero to 100 Enervee Score helps me choose the most energy efficient products.”
- Three-quarters of respondents are willing to share their experiences with others, something that can be extremely valuable to get the word out and counter any distrust in the program going forward.

Test Insights & Implications

Due to limited participation in this market test, the following insights should be considered to be preliminary, based on the available data.

- There is potential to offer large rebates, in combination with copays, to LMI/DAC consumers to support 1-off retail appliance purchases, rather than giving products away entirely for free, while offering greater choice and other benefits. The level of the rebate should ideally be set at a level for each eligible high-efficiency model that results in an order cost aligned with the cost of the cheapest (typically inefficient) new models on the market. According to Amann, Tolentino & York (2023): “In common appliance categories (e.g., refrigerators, clothes washers, and room air conditioners), roughly 30% of sales are of the handful of models with the lowest price points.



Research shows that these buyers are more likely to be in underserved customer groups, specifically LMI, communities of color, and renters (Shift Consortium 2020). The lack of available energy-efficient products at these price points not only leaves out a large segment of consumers, but it also leaves a significant untapped opportunity for energy savings.” The report also included an analysis that showed that “...lower-cost models achieving high-efficiency scores (e.g., 88 and above) cost \$275 more than the lowest-cost models available.”

- 3 out of 4 respondents said it would be “extremely unlikely” that they would have bought the efficient product they did, if there had been no rebate available, and may be dependent on substantial rebates to afford efficient products.
- Further analysis would be needed to determine why 98% of those invited chose not to participate in the MT3 rebate offer. There are many plausible reasons, such as: overlooked the email invitation with the rebate offer; already bought an appliance by the time they received the rebate invitation, even without the availability of Eco Financing; were suspicious and did not trust the high rebate offer; could not afford the up-front purchase price of hundreds of dollars, even with a large instant rebate..
- Although we were not able to test during the pilot, in conversations following the pilot, there is significant interest among the pilot retailer (and manufacturer) partners to contribute product discounts for this type of equity-first program to reduce greenhouse gas emissions, both for corporate social responsibility reasons and because it opens up new customer segments to grow their businesses.

2.3 General Insights & Learnings

In addition to the KPI and market test data discussed above, this section reports on other outcomes from the Innovative Market Strategies NY Marketplace pilot overall, including who participated, what people bought, how the various payment methods were used, and what potential exists to scale impact going forward. It should be noted that these pilot results were achieved in only 7.5 months, with no NYSERDA or utility marketing of any kind.



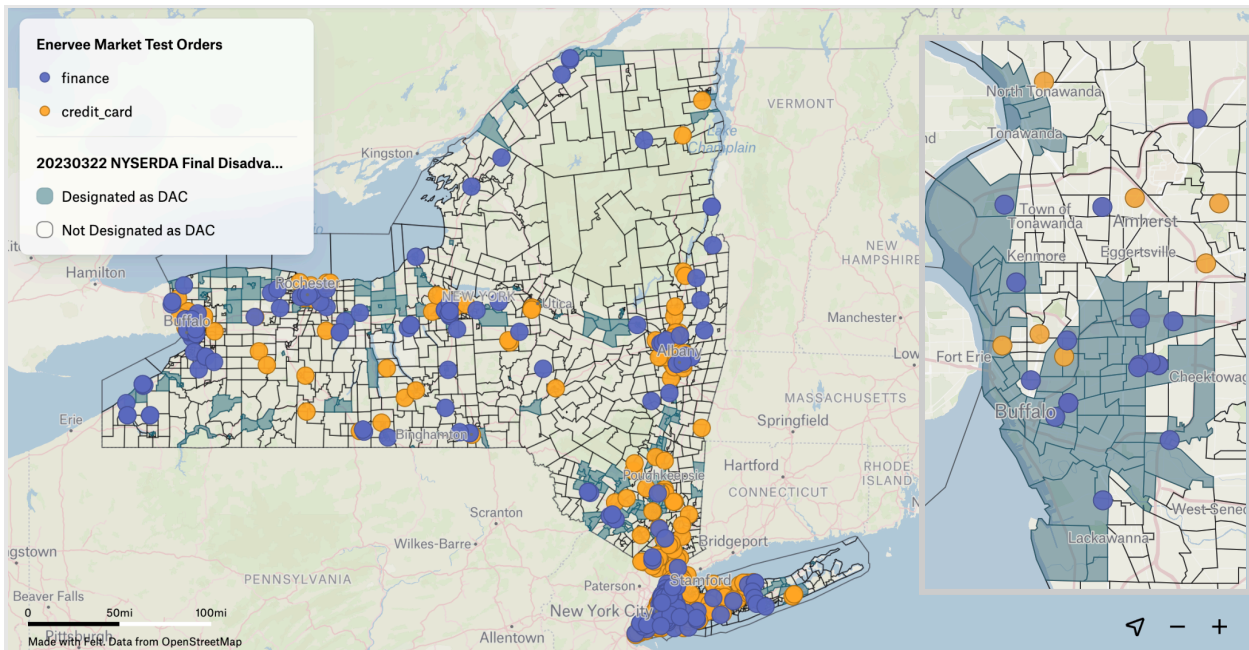
2.3.1 Participant Location & Demographics

Geographic distribution of participants

With the online retail marketplace model, the pilot was able to serve New Yorkers across the state. Figure 2 shows the location of each participant. The figure also shows whether they purchased using a credit/debit card (orange dots) or by taking out an Eco Financing loan (blue dots), superimposed on geographic DACs (areas in gray). The inset is a close-up of the Buffalo area, where it can be seen that financed orders were concentrated in DACs.

Figure 2. Distribution of Participants and Payment Methods (NYS, Buffalo)

Source: Program transaction data





2.3.2 NY Marketplace Consumer Value Proposition

NY Marketplace Features

The NY Marketplace platform integrates Enervee’s Choice Engine technology, which relies on behavioral insights to drive more efficient purchases, as documented in various academic studies and independent utility program evaluations (Arquit Niederberger, 2022; Arquit Niederberger, 2020; Arquit Niederberger & Champniss, 2018). The Enervee Choice Engine helps consumers make informed purchasing decisions by providing energy efficiency scores for household products. Table 10 shows which marketplace features participants found most helpful for their shopping experience.

Table 10. Most Helpful Marketplace Features

Source: Responses to the survey question: “Which Marketplace features were most helpful for your shopping experience?” N=268

Marketplace Features	Number of Respondents	Share of Respondents
All information in one place	69	47.26%
CLEARCOST total cost of ownership estimate	52	35.62%
Ability to bundle installation and/or haul-away services	41	28.08%
Enervee Score product efficiency index	30	20.55%
YOUSAVE bill impact estimate	29	19.86%
Personalized product recommendations	21	14.38%
Best prices from all retailers	20	13.70%
Other (please specify)	6	4.11%

The number one consumer value proposition was that the NY Marketplace is a 1-stop shop that provides all of the information needed to research, choose and purchase an energy efficient appliance. Most of the other helpful features provide information only available on the NY Marketplace, including personalized estimates of the total cost of ownership and utility bill impacts of individual product choices, as well as the patent pending Enervee Score



energy efficiency index²⁸. These results are consistent with a prior study of the consumer value proposition of Enervee’s marketplace platform, which found that the energy-related decision attributes that consumers find most important are also those most difficult to find when shopping for appliances (Binley et al., 2016).

In addition, 91% of people who purchased with a credit card agreed that the NY Marketplace “made it quick and easy for me to buy the efficient product I did” (Table 11), with nearly three-quarters saying they “strongly agreed”.

Table 11. Extent to Which the NY Marketplace Made Buying Efficient Products with a Credit Card Quick & Easy

Source: Responses to the question: “To what extent do you agree with this statement: The NY Marketplace made it quick and easy for me to buy the efficient product I did.” N= 85

Response	Number of Respondents	Share of Respondents
Strongly agree	63	74.1%
Somewhat agree	14	16.5%
Neither agree nor disagree	5	5.9%
Somewhat disagree	0	0.0%
Strongly disagree	3	3.5%

Not only are customers empowered to buy energy efficient products; they are able to do so quickly, which attests to the care that went into designing an effective and consumer-friendly online shopping experience for the masses, based on behavioral science insights documented in the scientific literature (Arquit Niederberger, 2020).

Prior academic research and independent program evaluations have documented the fact that the Enervee Score drives more energy efficient buying decisions (Arquit Niederberger, 2022; Arquit Niederberger, 2020; Arquit Niederberger & Champniss, 2018). People who made a purchase with a credit card²⁹ overwhelmingly confirmed that the zero to 100 Enervee Score

²⁸ <https://www.enervee.com/score>

²⁹ This question was only asked of people who purchased via credit card.



helped them choose the most energy efficient products (Table 12), with over 85% “strongly” or “somewhat” agreeing.

The independent evaluation of the IMS pilot might wish to explore whether the Enervee Score is equally influential when Eco Financing is used as the payment method. Enervee would hypothesize that it might be less influential, because although these two icons communicate different benefits (efficiency and financing availability, respectively), both the Enervee Score and the Eco Financing logo serve as a heuristic for a better buying decision and therefore might dilute the signaling effect of the Enervee Score on its own.

Table 12. Impact of Enervee Score on Ability of Consumers Who Paid By Credit Card to Choose Most Efficient Products

Source: Responses to the question: “To what extent do you agree with this statement: The zero to 100 Enervee Score helps me choose the most energy efficient products.”
N= 94

Response	Number of Respondents	Share of Respondents
Strongly agree	57	60.64%
Somewhat agree	23	24.47%
Neither agree nor disagree	10	10.64%
Somewhat disagree	0	0.00%
Strongly disagree	4	4.26%

The NY Marketplace is therefore also valuable for consumers who do not need to finance their purchases, not the least because it makes appliance shopping quick and easy (Table 11). This result is consistent with other studies that document the effectiveness of the Enervee Score and other Choice Engine technology features with respect to eliminating barriers to efficient product purchases. Going forward, there is an opportunity for Enervee to integrate information on incentives coming from the Inflation Reduction Act, including tax credits and rebates, which can also benefit consumers who do not need to finance their purchases.

Eco Financing as a Payment Method

For those who paid with Eco Financing, 95.0% agreed that Eco Financing was an enabler of



their efficient product purchase, with 86.7% “strongly” agreeing (see Table 13). Not a single respondent expressed any disagreement that Eco Financing was an enabler. It also shows that a statewide marketplace offers value for all New Yorkers, including those without access to capital.

The fact that Eco Financing can empower consumers to make efficient retail purchases is an important result, because the NY Marketplace is the first NYS energy efficiency program to rely on financing, rather than financial incentives, to overcome financial barriers facing consumers making 1-off appliance purchases. Especially in emergency buying situations, consumers are in a hurry and tend to make less efficient choices (Champriss, 2016), so Eco Financing is particularly important in such situations. The need for support in this buying context was called out by NYS stakeholders in the Statewide LMI Portfolio 2020 Stakeholder Input Companion Document (see footnote 7).

Table 13. Importance of Eco Financing as Driver of Efficient Purchases

Source: Responses to the question: “To what extent do you agree with this statement: Eco Financing made it possible for me to buy the efficient product I did.”

N=60

Response	Number of Respondents	Share of Respondents
Strongly agree	52	86.7%
Somewhat agree	5	8.3%
Neither agree nor disagree	3	5.0%
Somewhat disagree	0	0.0%
Strongly disagree	0	0.0%

Affordable payments, spreading payments out over 60 months, and fixed monthly payments were the top Eco Financing consumer value propositions, called out by 71%, 54% and 50% of survey respondents, respectively (Table 14). Over 30% of respondents also found each of the following features of the loan program particularly attractive:

- No penalty for early repayment
- Online application process, which makes it convenient for borrowers



- No up-front fees

These results, combined with other findings on DAC participation, suggest that providing a means for people to pay for efficient product purchases in affordable monthly installments is more effective at eliminating financial barriers than traditional rebate or other energy efficiency program designs³⁰.

Table 14. Attractive Eco Financing Loan Features

Source: Responses to the question: “Which Eco Financing loan terms were most attractive to you? Check all that apply.”
N= 56

Eco Financing Loan Features	Number of Respondents	Share of Respondents
Affordable payments	40	71.4%
Spreads payments out over 60 months	30	53.6%
Fixed monthly payments	28	50.0%
No penalty for early repayment	25	44.6%
Online application process	25	44.6%
No fees	18	32.1%
Minimum credit score of 580	13	23.2%

Point-of-Sale Rebates

A key question for Market Test 2 was the importance of rebates at typical dollar levels for utility energy efficiency programs on top of the Eco Financing offer. Enervée first wanted to know if the rebate was necessary to enable the purchase. Table 15 shows that two-thirds of respondents would have been “extremely” or “somewhat” likely to have bought the product they did without the rebate, and only 25% would probably not have purchased the same product without the rebate. This confirms that – when Eco Financing is available – rebates are not essential for many and would result in high free-ridership. While coming from a small sample size (13 respondents), this finding is also consistent with Table 16, which shows that Eco Financing was universally important to consumers, while rebates were not.

³⁰ Such as midstream programs (e.g., ENERGY STAR Retail Products Program), or no-cost direct-install programs like EmPower+, which do not include many plug load categories typically purchased at retail, or do not support emergency replacement scenarios.



We also included a question to understand the relative importance of Eco Financing versus rebates. Table 16 shows responses about which features were most important to consumers who purchased rebated products with Eco Financing, with multiple responses possible.

Table 15. Likelihood of Purchase Without “Standard” Rebate

Source: Market Test 2 responses to the question: “How likely is it that you would have bought the product you did, if there had been no rebate available?”

Note: During Market Test 2, “standard” rebates were set at a level aligned with current utility rebates (see Chapter 2.2.2. for specific rebate levels)

N=82

Response	Number of Respondents	Share of Respondents
Extremely likely	25	30.5%
Somewhat likely	28	34.2%
Neither likely nor unlikely	8	9.8%
Somewhat unlikely	0	0.0%
Extremely unlikely	21	25.6%

As expected based on prior data, affordable monthly payments were universally important to all market test respondents, with the interest rate itself and the total amount of interest being important to far fewer people (Table 16). Although the sample size for this question was small, it suggests that what matters to participants is the ability to afford the monthly payments, not the actual interest rate or cost of Eco Financing.

Table 16. Most Important Eco Financing and Rebate Features for Financed Purchases

Source: Market Test 2 responses to the question: “Which of these program features was most important to you?”

N=13

Program Feature	Number of Respondents	Share of Respondents
Affordable monthly payment	13	100.0%
Low interest rate	6	46.2%
Rebate	5	38.5%
Total amount of interest	4	30.8%



Other	1	7.7%
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This makes sense, because the Eco Financing APR – at 9.99% for those enrolled in autopay – is far lower than other options that may be available to participants, such as credit cards, payday loans, or the effective rate when purchasing from rent-to-own stores. As of July 2024, the average credit card interest rate was 27.7%³¹, and credit cards require at least fair credit, leaving limited options. Rates can exceed 100% APR for rent-to-own purchases³², and a typical two-week payday loan with a \$15 per \$100 fee equates to an annual percentage rate (APR) of almost 400%³³. This lack of access to affordable capital is why Eco Financing resonated during the pilot.

When Eco Financing is available – rebates are far less important than being able to pay for a purchase with affordable monthly payments; in fact, rebates were only important for 38.5% of 13 respondents, while 100% of respondents called out the importance of affordable monthly payments.

Market Test 3 respondents were also asked whether the rebate was necessary to enable the purchase. Compared to Market Test 2, these participants received much higher rebates after having been declined to receive an Eco Financing loan (Table 17), so their only option was to pay any difference with a credit or debit card. In this case, 3 out of 4 respondents said that it was “extremely unlikely” that they would have bought the efficient product they did, had the high rebate not been available. While the sample is small and should be interpreted accordingly, the result makes intuitive sense.

This finding indicates that there may be a place for programs that offer different levels of discounts/copays for targeted consumer segments, such as those who could not obtain

³¹ <https://www.forbes.com/advisor/credit-cards/average-credit-card-interest-rate/>

³² Consumer Reports

<https://www.consumerreports.org/media-room/press-releases/2011/06/rent-to-own-services-can-have-equivalent-interest-rates-as-high-as-311-percent-/>

³³ Consumer Financial Protection Bureau

<https://www.consumerfinance.gov/ask-cfpb/what-is-a-payday-loan-en-1567/>



financing. More data would be needed to refine this element of program design, such as the optimal incentive level for different consumer segments.

Table 17. Likelihood of Purchase Without “High” Rebate

Source: Market Test 3 responses to the question: “How likely is it that you would have bought the product you did, if there had been no rebate available?”

Note: During Market Test 3, “high” rebates were indexed at 75% of the price of lower-cost models (see Chapter 2.2.3. for specific rebate levels)

N=4

Response	Number of Respondents	Share of Respondents
Extremely likely	0	0.00%
Somewhat likely	1	25.00%
Neither likely nor unlikely	0	0.00%
Somewhat unlikely	0	0.00%
Extremely unlikely	3	75.00%

Suggestions for Improvement

Participants were asked “How could the NY Marketplace program be improved?”. Two-thirds of 153 respondents (N=102) either offered no comment (N=72) or specifically offered positive comments (N=30) suggesting that no changes were needed.

Table 18. Areas for Improvement

Source: Responses to the question “How could the Enervee/NY Marketplace program be improved?” Similar answers grouped by category.

N=51 (this excludes expressions of satisfaction with the program)

Response Category	Share of Total Responses
Improved Emails / Communication	5.9%
More Products / Product Categories	5.2%
Better Prices / Bigger Rebates	4.6%
Installation Challenges	4.6%
Payment Challenges	2.0%



Other	11.1%
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The most popular themes for suggested improvements³⁴ were improved emails / communication, desire for more products / product categories, better prices / bigger rebates, and avoiding issues with delivery / installation (Table 18).

Recruitment Opt-In

Participants were asked whether they were interested in sharing their experiences with others, and were asked to provide contact information to that end. Overall, 55% of respondents opted in to be contacted for opportunities to share their experiences (Table 19), with a slightly higher percentage among those located in DACs (60%, as opposed to 53% of those not in DACs). Willingness to share experiences ranged from a low of 38% for those with incomes above \$200,000 to a high of nearly 70% for those with incomes between \$50,000 and \$74,999.

Table 19. Willingness to Share Experience

*Source: Responses to the question “Interested in sharing your experience with others?”
N=144*

Group	Share of Respondents “Yes”	Share of Respondents “No”
All Respondents	55.56%	44.44%
Respondent Location		
Located in DAC	60.00%	40.00%
Not Located in DAC	53.33%	46.67%
Respondent Household Income		
Less than \$50,000	48.72%	51.28%
\$50,000 - \$74,999	69.57%	30.43%
\$75,000 - \$99,999	60.00%	40.00%

³⁴ No theme was mentioned by more than 6% of respondents; this list includes all themes mentioned by at least 2% of respondents. Other areas for improvement (mentioned by only 1-2 people each) were better product comparison, customer service (timing or response), more retailers, product information or issues, user experience.



\$100,000 – \$149,999	64.29%	35.71%
\$150,000 – \$199,999	45.45%	54.55%
\$200,000 or more	37.50%	62.50%

This willingness to serve as a program ambassador suggests a high degree of identification with the program and presents the opportunity to engage a wide variety of New Yorkers in testimonials or other outreach going forward³⁵. Including voices of traditionally hard-to-reach consumers can go a long way towards building trust and increasing participation.

2.3.3 Efficient Product Sales

New Yorkers purchased 758 individual products with a gross merchandise value of \$435,647 via the NY Marketplace during the 7.5 month pilot. All products were Energy Star certified and where applicable, were eligible for the Ny TRM v10. The most popular categories were the following:

- **By number of units sold.** Smart thermostats, purchased exclusively by credit card, accounted for 35.8% of the total units purchased, followed by refrigerators (20.8%), televisions (12.8%) and clothes washers (12.5%).
- **By gross merchandise value.** The four most popular categories by GMV were refrigerators (37.4% of total GMV, with an average product price \$1,006), clothes washers (18.2%, average product price \$815), televisions (14.4%, average product price \$633), and electric clothes dryers (11.2%, average product price \$823).

2.3.4 Eco Financing

The American Council for an Energy Efficiency Economy provided a succinct and ideal framing for the following discussion about Eco Financing learnings (Amann, Tolentino & York, 2023): “According to the Federal Reserve (2022), more than 30% of U.S. adults lack the cash or cash equivalent to cover an emergency expense of \$400, and 11% report that they could not

³⁵ As an example of engagement, one of the video testimonials on Enervee’s YouTube Eco Financing channel featuring consumers in California has been viewed 534,000 times at the time of this publication. <https://www.youtube.com/@ecofinancing>



pay such an expense by any method. When faced with an emergency appliance or equipment purchase, many households rely on high-interest credit cards or turn to the secondhand market, rent-to-own stores, or expensive payday lenders.”

Participant surveys conducted by Enervee underscored the consumer value and importance of Eco Financing. For those who paid with Eco Financing, 95.0% agreed that Eco Financing was an enabler of their efficient product purchase, with 86.7% “strongly” agreeing (see Table 20). Not a single respondent expressed any disagreement that Eco Financing was an enabler. It also shows that a statewide marketplace offers value for all New Yorkers, including those without access to capital.

The fact that Eco Financing can empower consumers to make efficient retail purchases is an important result, because the NY Marketplace is the first NYS energy efficiency program to rely on financing, rather than financial incentives, to overcome financial barriers facing consumers making 1-off appliance purchases. Especially in emergency buying situations, consumers are in a hurry and tend to make less efficient choices (Champniss, 2016), so Eco Financing is particularly important in such situations. The need for support in this buying context was called out by NYS stakeholders.

Table 20. Importance of Eco Financing as Driver of Efficient Purchases

Source: Responses to the question: “To what extent do you agree with this statement: Eco Financing made it possible for me to buy the efficient product I did.”
N= 60

Response	Number of Respondents	Share of Respondents
Strongly agree	52	86.67%
Somewhat agree	5	8.33%
Neither agree nor disagree	3	5.00%
Somewhat disagree	0	0.00%
Strongly disagree	0	0.00%



Another important consideration is the lack of public sector resources to scale traditional no-cost direct install programs. The NY Clean Energy Advisory Council's Low- and Moderate-Income (LMI) Working Group found that despite spending \$700 million in public funds on delivering clean energy and bill payment assistance initiatives that support the LMI market segment each year, over 256,000 residential customers had been disconnected in the past 12 months, and over 1 million were over 60 days behind in making payments, with \$711 million owed to utilities³⁶. As a result, the New York Public Service Commission committed to moving away from direct financial assistance to a focus on innovative approaches to ensure energy affordability (NYPSC, 2016) that addresses root causes. Recognizing that there are insufficient funds to provide grants and direct-install support for all of those who need them, several 2023 reports highlighted the importance of financing and called out the opportunity for microloan marketplace programs to expand lower- and moderate-income residents' access to efficient and electrified appliances (Amann, Tolentino & York, 2023; Berkeley Law, 2023).

For these reasons, testing the market response and impact of point-of-sale Eco Financing was an important part of the IMS - NY Marketplace pilot, and the results were compelling, particularly from an equity perspective:

- There was an overwhelming market response to Eco Financing: Overall, 245 orders (38%) and 73.0% of gross merchandise value (GMV) were financed, and the average financed order value was \$1,183, twice as high as credit card purchases. Excluding smart thermostats, which could not be financed due to their low cost, 62% of orders and 75% of GMV were financed.
- Eco Financing was an enabler of efficient purchases by New Yorkers, including major appliances. Regardless of DAC status, three-quarters of all financed purchases were major appliances³⁷ or air conditioners, double the share purchased with a credit card.
- DAC participation was facilitated with Eco Financing. Across all orders and payment methods, the DAC participation rate was 32.2%, just under the NYS geographic DAC

³⁶ Report on Alternative Approaches to Providing Low and Moderate Income (LMI) Clean Energy Services, 2017.

³⁷ Major appliances include laundry appliances (clothes washers & dryers) and kitchen appliances (dishwashers, refrigerators & freezers).

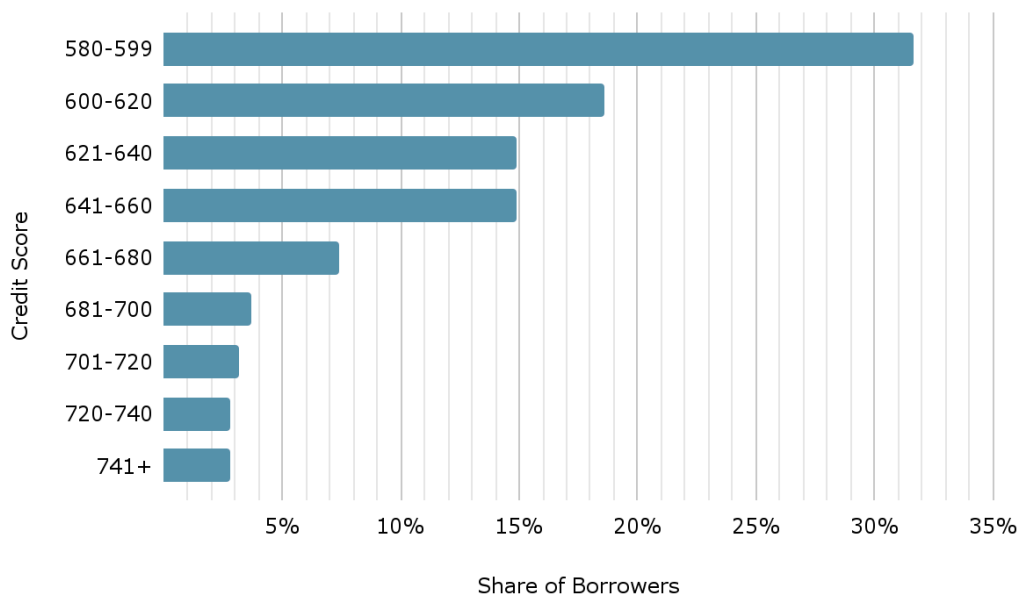


share of 35%. Without financing, however, DAC participation was only 20.8%, while 51.0% of financed purchases were made by consumers located in DACs. By converting lump-sum appliance costs into affordable monthly payments, Eco Financing overcomes financial barriers and empowers New Yorkers located in disadvantaged communities to buy energy efficient products on their own. This result is all the more meaningful, because people located in DACs were not specifically targeted by marketing efforts during the pilot.

- Eco Financing also enabled credit-challenged borrowers with poor to fair credit (Vantage Scores between 580 and 700) to purchase energy efficient appliances at affordable interest rates, with over 90% of borrowers in that range, and two-thirds having credit scores below 640 (Figure 3).

Figure 3. Distribution of Borrowers by Credit Score

Source: Program lending data



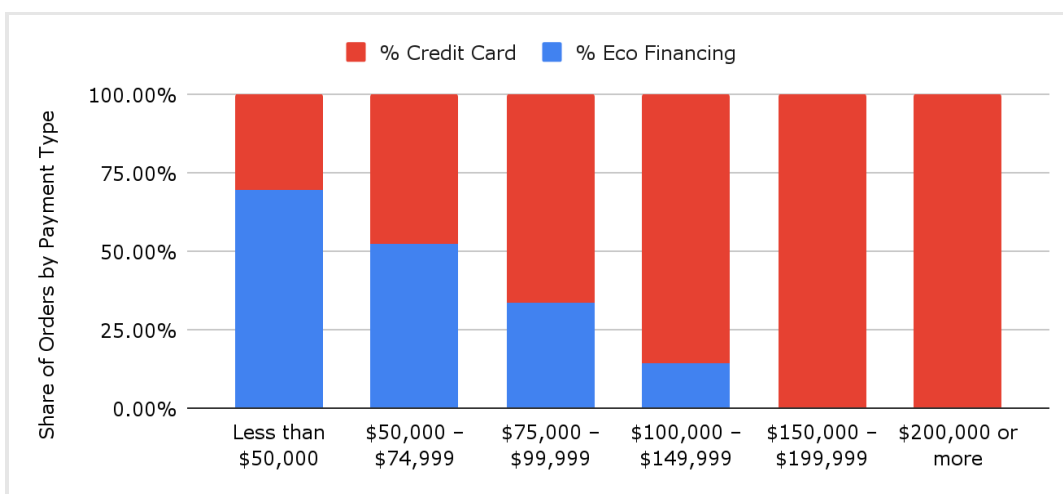
- A large share of prospective borrowers were unable to obtain an Eco Financing loan. Of those who submitted an application to be pre-qualified for a loan, only 25% were approved. Among those not pre-qualified, 85% were declined for a single reason: not meeting the 580 credit score threshold set by the NYSERDA LLR Program. This minimum credit score requirement should be reconsidered. Excluding potential



borrowers based on credit score alone is a blunt instrument to avoid lending to people who might have higher rates of loan delinquency and default. Enervee would like the freedom to experiment with alternative, more suitable underwriting approaches to serve more New Yorkers in need.

Figure 4. Order Payment Method by Income Bracket

Source: Participant survey responses and Enervee transaction data N=144



- On the flip side, of the pre-qualified applications, 48% went on to purchase an appliance funded with a loan.
- The autopay option, with a preferential interest rate of 9.99%, was popular, with 86% of NYSERDA borrowers enrolling in autopay in 2023.
- Eco Financing is effective on its own, but results from Market Tests 2 and 3 suggest that instant rebates may also have a role to play in ensuring equitable outcomes.

2.3.5 Equity Outcomes

Beyond the absolute number of DAC participants KPI reported on above, a number of other relevant equity metrics were tracked for the project.

- **Share of DAC participants.** New Yorkers located in DACs accounted for 31.4% of the 653 pilot orders placed, and a much higher share of financed orders (51.0%). These numbers compare favorably against the 35% geographic DAC share across the entire State of New York.



- Energy bill savings.** The pilot will deliver an estimated \$294,224 in consumer energy bill savings (Table 21), with 61.4% or \$180,501 attributed to electricity savings. The greatest lifetime bill savings are associated with smart thermostat purchases, followed by televisions, refrigerators and clothes washers.

Table 21. Consumer Energy Bill Savings Estimated by the Pilot

Source: *Enverve transaction data and assumed electricity (\$0.21 per kWh) and natural gas rates (\$1.62 per therm)*³⁸

Program	Lifetime Bill Savings	Electricity (kWh)	Natural Gas (therms)	Total
Thermostat		\$65,105	\$103,892	\$168,997
Television		\$55,769	\$0	\$55,769
Refrigerator		\$27,871	\$0	\$27,871
Washer		\$15,890	\$9,639	\$25,529
Dryer		\$3,837	\$0	\$3,837
Air Conditioner		\$3,329	\$0	\$3,329
Air purifier		\$3,308	\$0	\$3,308
Freezer		\$2,999	\$0	\$2,999
Dehumidifier		\$646	\$0	\$646
Dishwasher		\$615	\$0	\$615
Projector		\$572	\$0	\$572
Sound Bar		\$353	\$0	\$353
Gas Dryer		\$38	\$192	\$231
Monitor		\$169	\$0	\$169
Pilot Total		\$180,501	\$113,723	\$294,224

On average, the estimated energy bill savings offset over 80% of the entire purchase price over the lifetime of the product (Table 22). By spreading out payments over 60 months, Eco Financing helps synchronize bill savings and investment costs, rather



than the status quo with the full purchase price due up front, before any bill savings are realized.

- Financing cost savings.** Enervee was able to keep the interest rates charged for Eco Financing loans low, due to the credit enhancement provided by the NYSERDA LLR Program. Regardless of credit score³⁹, the autopay Annual Percentage Rate (APR) was 9.99%, and rates for those not enrolled in autopay were between 10.98% and 12.09%, resulting in an average APR of 10.19%. This rate is much more favorable than alternatives, such as credit cards – the average credit card rate was 24.59% in January 2024⁴⁰ – or the effective rate when purchasing from rent-to-own stores.

Table 22. Estimated Lifetime Bill Savings per Order, Order Cost and Savings as Percent of Cost

Source: Enervee transaction data and assumed electricity (\$0.21 per kWh) and natural gas rates (\$1.62 per therm)

Category	Electricity Bill Savings (kWh)	Natural Gas Bill Savings (therms)	Total Energy Bill Savings	Average Order Cost	Savings % of Cost
Thermostat	\$240	\$383	\$624	\$137	454.4%
Television	\$575	\$0	\$575	\$633	90.8%
Dehumidifier	\$323	\$0	\$323	\$270	119.7%
Projector	\$286	\$0	\$286	\$950	30.1%
Clothes Washer	\$167	\$101	\$269	\$815	33.0%
Air purifier	\$236	\$0	\$236	\$630	37.5%
Air Conditioner	\$185	\$0	\$185	\$339	54.6%
Freezer	\$176	\$0	\$176	\$564	31.3%
Refrigerator	\$176	\$0	\$176	\$1,006	17.5%
Sound Bar	\$71	\$0	\$71	\$490	14.4%
Clothes Dryer	\$66	\$0	\$66	\$823	8.0%
Dishwasher	\$62	\$0	\$62	\$613	10.0%

³⁹ The minimum credit score for underwriting was 580.

⁴⁰ <https://www.lendingtree.com/credit-cards/average-credit-card-interest-rate-in-america/>



Monitor	\$56	\$0	\$56	\$387	14.5%
Gas Clothes Dryer	\$5	\$27	\$33	\$816	4.0%

2.3.6 Estimated Energy Savings and Greenhouse Gas Emissions Reductions

During the IMS project, 653 purchase transactions were made and 758 units sold via the NY Marketplace. The resulting estimated lifetime energy and carbon savings are shown in Table 23. Overall, each unit sold will eliminate roughly an estimated 1 ton of carbon dioxide-equivalent greenhouse gas emissions over the lifetime of the product, avoiding a total of an estimated 779 tCO₂e.

Table 23. Units Sold, Estimated Lifetime Energy Saved and Greenhouse Gas Emissions Avoided

Source: Enervee transaction data for units sold; TRM version 10 for deemed energy savings values; EPA for GHG conversion factors

Program Energy Savings	Units Sold	Estimated Electricity Saved (kWh)	Estimated Natural Gas Saved (therms)	Estimated GHG Emissions Avoided (t CO ₂ e)
Thermostat	271	310,024	64,092	486.65
Television	97	265,567	0	125.89
Washer	95	75,668	5,946	67.38
Refrigerator	158	132,720	0	62.92
Dryer	58	18,270	0	8.66
Air Conditioner	18	15,850	0	7.51
Air purifier	14	15,750	0	7.47
Freezer	17	14,280	0	6.77
Dehumidifier	2	3,077	0	1.46
Dishwasher	10	2,930	0	1.39
Projector	2	2,726	0	1.29
Sound Bar	5	1,680	0	0.80
Gas Dryer	7	183	119	0.72
Monitor	3	803	0	0.38



Total	758	859,529	70,156	779
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Energy savings estimated during the IMS project were calculated by multiplying unit sales by deemed savings values approved for the project by NYSERDA (drawing on the NYS Technical Reference Manual v10, and an independent evaluation completed as a part of a previous Enervee pilot.). Greenhouse gas emissions were calculated by applying conversion factors from the Environmental Protection Agency for natural gas (0.0053 t CO₂/therm)⁴¹ and electricity (0.474 t CO₂e/MWh)⁴².

2.3.7 Marketing

Marketing Approach

Enervee developed the following marketing plan drawing on a decade of experience marketing energy efficient appliances for utilities and state governments. This leans heavily on established best practices taken from the ecommerce industry, with a focus on digital engagement.

Digital advertising

- Enervee ran campaigns targeted across NY across Meta and Google Ads platforms to test their viability and different messaging across the various market tests. There were three types of messaging creatives developed:
 - General messaging around the Marketplace and its ability to allow shoppers to compare offers and find deals, which ran during the baseline period
 - Eco Financing-focused messaging that spoke to the unique financing offer of low interest rates and low monthly payments. This was run during Market Test 1 when Eco Financing was first added to the site. We activated it again later during the later half of Market Test 2, once the baseline numbers for rebates messaging had been collected.
 - Rebate messaging that focused on small rebates of between \$50 and \$100 dollars that were being offered on several product categories on the site. This

⁴¹ https://www.epa.gov/system/files/documents/2023-03/ghg_emission_factors_hub.pdf

⁴² <https://www.epa.gov/egrid/summary-data>. Non-baseload output emission rate for CO₂e, averaged across the three eGRID subregions NYC/Westchester, Long Island and Upstate NY.



ran at the beginning of Market Test 2, when rebates were first launched on the site.

- Email marketing. Enervee utilized a small list of around 100,000 Enervee-owned emails for customers in the New York area that allowed us to test the effectiveness of email marketing. For email, the messaging did not strictly follow the market tests, but was optimized based on what drove the most transactions across all of the project partners. Generally, similar to the advertising tests, Enervee saw the highest engagement while promoting Eco Financing in the emails.
 - Emails sent 2-4X per month promoting different offers and features of the Marketplace, including special deals, rebates, and Eco Financing.
 - Behaviorally-triggered emails. Enervee set up a series of triggered emails to drive customers to re-engage with the site. These emails were automatically sent when customers who engaged with the emails then went through to the NY Marketplace and took certain actions. These included cart abandon emails after a user left a product in their shopping cart without purchasing, and browse abandon emails (e.g., an email with helpful shopping tips for buying a refrigerator after the user visited the refrigerator category).
- The Enervee NY Marketplace proposal and resulting contract also had assumed that the project team would be able to take advantage of opportunities to leverage EmPower+ and other NYSERDA marketing channels to drive LMI New Yorkers to the NY Marketplace, specifically:
 - Email. Enervee had planned to work with NYSERDA to access email lists for income-qualified New Yorkers (the assumption was roughly 50,000 emails available from EmPower+). However, NYSERDA was unable to provide its list directly to Enervee, or to market the NY Marketplace to its own email list, during the pilot, due to concerns around sharing personally identifiable information.
 - Cross-promotion. Enervee planned to work with NYSERDA to identify cross-promotional opportunities (e.g., food assistance or housing programs) for banner ads or mentions in email, newsletters or physical mailers, but little progress was made due in large part to the limited pilot duration.



Ultimately, Enervee was not able to leverage NYSERDA marketing channels for the IMS NY Marketplace project as planned.

Program Performance Metrics

Enervee marketing during the pilot drove the follow marketing outcomes:

- Total Site visits: 120,808
- Add to Cart: 7,850 sessions that contain 1 or more add to carts
- Add to Cart rate: 6.49% for the entire pilot program. This trended steadily upward as the pilot proceeded through market tests, rising to an average of 8.7% across all channels by the 4th quarter of the 2023 and as high as 10.8% for certain advertising channels (Table 24). This is 27% to 36% better than the ecommerce industry average of 6.47% for home products⁴³, and indicates the addition of Eco Financing drives high engagement with the platform.

Table 24. Add-to-Cart Rate Performance Relative to Industry Benchmark

Source: Program data

Time Period	Pilot Add-to-Cart Rate	Performance Relative to Industry Average
Average over entire pilot	6.5%	+0.3%
Average over 4 th quarter 2023	8.7%	+34%
Highest rate	10.8%	+67%

- The majority of visits and engagement were driven by paid advertising managed by Enervee.
 - Approximately 6M paid ad impressions
 - 75K clicks to the site
- The second highest source of traffic was from emails sent by Enervee
 - 2M emails sent to an Enervee owned list of approximately 120K.
 - This saw a healthy click through rate of 1% (industry average of 1%)

However, due to the small size of the list, it was only able to drive around 21K unique clicks to the site.

⁴³ <https://www.oberlo.com/statistics/add-to-cart-conversion-rate>



Learnings from Digital Marketing

- Email performed well, but needs partnerships to scale.** Enervee saw solid engagement metrics from email campaigns both in terms of add to cart rates and email clicks, but only had access to a small list of emails that Enervee had collected in the past. Partnering with utilities and government agencies to gain access to their lists or to share content for them to send emails would help this scale greatly at a low cost. Based on Enervee’s experience with utilities across the country, one can assume that New York utilities likely have access to around 3.5 million customer emails. Sending just 12 emails per year to that list to promote the program could drive around 400,000 visits. This could also be expanded to other government agencies that service LMI and DAC households.
- Behaviorally-triggered emails saw a 10X higher Click Rate than email blasts.** Enervee’s first-party data allowed for triggering of emails based on user behavior, such as browsing a product or adding the product to a cart. These emails saw a huge increase in engagement and strengthened the program.
- Promoting Eco Financing in ads, while also offering rebates on the platform, increased the conversion rate of add to cart by more than 500%,** relative to the baseline of no rebates or financing (Table 25).

Table 25. Performance of Refrigerator Ads on Google Performance Max

Source: Enervee program data

Messaging	Eco Financing on Site	Rebates on Site	Add to Cart Conversion Rate for Digital Ads
Deals and energy savings (baseline)	No	No	1.9%
Promoting rebates, no mention of Eco Financing	Yes	Yes	5.6%
Promoting Eco Financing, no mention of rebates	Yes	Yes	10.8%

Add to cart rate is measured by the number of site sessions in which a customer added one or more products to their cart, divided by the total number of sessions on the site. Enervee used add to cart as a core metric, for three reasons: 1) it is the most reliable to tie to the advertising source, 2) a large number of users take this action, giving a sufficient sample size and 3) there are various blockers to customers qualifying for



financing which are outlined in other sections of this report.

During the various market tests, Enervee experimented with running different types of messaging in digital ads, as outlined in Table 25. During the first messaging test, neither Eco Financing nor rebates were available on the site, and the ads promoted general comparison shopping features of the site and the ability to browse energy saving products. This resulted in add to cart engagement of less than 2%.

For the other two marketing tests, both rebates and Eco Financing were live on the website. In the second marketing test, the ads promoted exclusive rebates and did not mention Eco Financing. The add to cart rate went up to over 5% during this period. Finally, Enervee ran ads promoting Eco Financing, with no mention of the rebates, and the add to cart rate jumped to well over 10%. In conclusion, when users were brought to the website with ads that promoted Eco Financing, they were significantly more likely to engage deeply with the site and add a product to their shopping cart. This indicates the customer is much more likely to follow through with the transaction if their visit is driven by an ad that promoted Eco Financing.

- **Users showed high interest in the Marketplace and programs, particularly in Eco Financing, however many were unable to qualify for it.** The ecommerce industry uses “Add to Cart (ATC) rate” defined as the number of sessions in which a user(s) added a product to their cart divided by the total number of session on the platform. For the market tests where Eco Financing was active, the ATC conversion rate was up to 36% higher than the industry average, indicating the financing offer was very appealing to customers. However, less than one-quarter of those who applied for financing were approved, with 64% of loan applications rejected due to prospective borrowers not meeting the minimum credit score threshold of 580. Allowing more people to qualify would increase the number of users who complete transactions and reduce the cost of acquisition dramatically.
- **Video assets saw particularly high engagement.** Video assets used on the Google Ads platforms consistently received a “Best rating” when analyzed by its content



optimization algorithms⁴⁴, as well as improved click through rates. Continuing to develop video assets will be one key step to improving advertising cost- effectiveness. The video assets were in use during Market Test 1 and 2, while Eco Financing messaging was active.

Marketing Recommendations to Scale Impact

- Enable more New Yorkers to take advantage of Eco Financing by exploring opportunities to approve loans to the large segment of customers in DACs. With over three-quarters of potential borrowers currently being rejected, this will bring down the cost of acquisition dramatically.
- Continue to optimize advertising and try new channels as feasible.
- Launch NYSERDA and utility marketing efforts to grow reach through customer emails and other outreach channels.
- Expand marketing partnerships (e.g., leverage Clean Energy Hubs, retailer/OEMs, cross- promotion with income-qualified and other incentive programs).

2.3.8 Manufacturer & Retailer Engagement

Enervee works closely with manufacturers and retailers to offer consumers a best-in-class marketplace experience, and A.O. Smith, Best Buy, Google Nest and LightBulbs.com all supported Enervee's proposal to NYSERDA's Innovative Market Strategies program to launch the NY Marketplace. Under the marketplace model, retailer partners ensure sufficient inventory, fulfill orders and provide services such as installation, haul-away and recycling.

For the NY Marketplace pilot, Enervee focused on thermostats for retailer and manufacturer engagement due to existing relationships in this space and believe that there is significant opportunity to expand the engagement model to other categories in the future.

- **Funding for promotions.** Enervee was able to secure promotional pricing from multiple thermostat OEMs, including Google, Ecobee, Emerson, and Honeywell to offer instant discounts on specific product models. However, due to the limited time during which we had thermostats live on site and available for a rebate, only Google

⁴⁴ Google performance Max utilizes images, text and video assets and builds thousands of ad combinations, which are optimized algorithmically. Each line of text or image or video is given a rating by the platform on how well it performed.



Nest contributed the incentive funds (for a total of \$6,960 in leveraged private investment). Because this was a pilot with limited budget, thermostat rebates and complementary manufacturer discounts were only offered long enough to achieve the unit sales KPI established at the outset of the program (3 days) and then discontinued. This strong market response demonstrates the potential for the program to grow. Funding contributions were on a per unit basis, so if we had kept rebates and OEM incentives on the category live and continued the conversion rate trajectory, this private sector contribution would have increased substantially.

- **Unique product offering.** With the funding we secured through partnership agreements, in combination with the government-funded rebate, customers were able to get select thermostats at a \$0 product cost (only paying shipping and taxes), driving increased traffic and conversion to the site. During the time that the thermostat promotion was live, the Conversion Rate increased by 390 basis points versus the overall Conversion Rate for the pilot.
- **Opportunities to scale engagement.** Enervee believes that there is significant opportunity to expand manufacturer and retailer engagement through both the expansion of discounts to other major appliance categories as well as the potential to partner for larger co-marketing efforts. Enervee has been in active conversations about both of these prospects and have received positive feedback and interest. The drivers of such partnerships to increase sales to people in disadvantaged communities include corporate responsibility commitments and the opportunity to tap into new market segments.

2.3.9 Customer Support

Customer Satisfaction with Support

When surveyed, 81% of customers rated their post support satisfaction at a 3 or above on a 5-point scale. Of those customers, 69% rated their support experience a perfect 5/5. After a customer works with Enervee's care team via phone or email, they receive a survey asking how satisfied they are with the resolution, on a 1- to 5-star scale. If a customer reports a 3 or



below, Enervee's management team reviews the ticket and reaches out directly to the customer, where appropriate, to see how the team can assist further.

Performance Metrics

Satisfaction ratings with Enervee's Customer Support service reflect the following performance metrics:

- Number of support tickets: 1,338 total
- Full resolution time: 3.6 days (Calendar hours including weekends and evenings)
- First response time: 10.3 hours (calendar hours including weekends and evenings)
- 1-touch resolution: 35% of tickets were resolved in a single interaction

Top Trending Inquiries

The most common themes that led to Customer Care contacts were the following:

- Eco Financing inquiry, including: "How do I apply for a loan?", "Can I apply with a low credit score?", "How does this work?"
- Account Opening, such as: "I got approved for a loan and need help selecting my item", "Can I change my due date?", "How do I pay my bill?"
- Order status, for example: "Where is my order?", "Can I update my delivery date?", "I need to exchange my product"
- Password reset for Eco Financing. Requests for password verification/ reset links were a common request when we launched the pilot. In January 2024, Enervee transitioned to a new loan servicing platform that completely eliminates the need for a password. The new service sends the user a unique code via email once they go to login with their email address. Each time a customer logs in they are sent a new code that they enter to access their account. This alone is expected to reduce Customer Support engagements significantly.



3 EmPower+ Integration

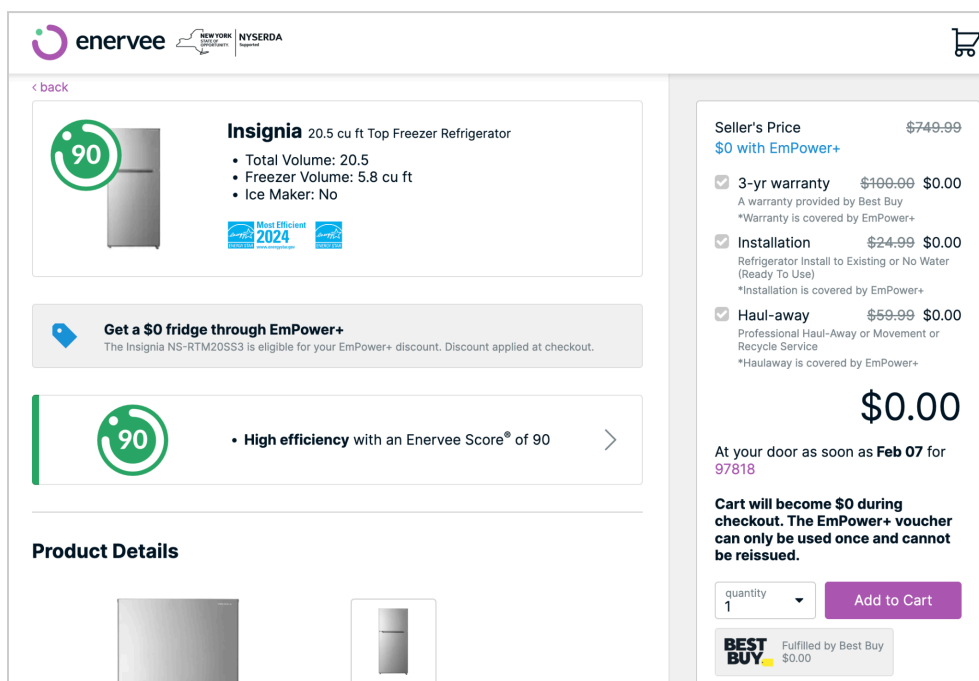
The purpose of this component of the IMS project was to experiment with using the NY Marketplace as an online delivery channel for the EmPower+ direct-install program⁴⁵.

EmPower+ is a longstanding NYSERDA program open to income-eligible owners and renters of 1-4 family households to help them make core energy efficiency improvements, including replacement of inefficient refrigerator/freezer units. Low-income, single-family households are eligible for no-cost energy efficiency improvements, and Moderate-income single-family households are eligible for a discount of up to 50% of the cost of eligible work.

The cooperation with Enervee during the IMS project was designed to test using Enervee’s marketplace platform as a new, online delivery channel for refrigerator and freezer replacement. As of January 2024, the EmPower+ Marketplace launched by Enervee (Figure 5) functions in the steps outlined below:

Figure 5. Product Page and Shopping Cart on the EmPower+ Marketplace

Source: EmPower+ Marketplace screenshot



⁴⁵ <https://www.nyserdera.ny.gov/All-Programs/EmPower-New-York-Program>



- Customer enrolls in EmPower+ via NYSERDA.
- EmPower+ team conducts onsite assessment and determines what product size a customer qualifies for.
- Enrollments are assigned to Enervee in the EmPower+ portal.
- Enervee sends out an initial email to the customer containing a unique link to the EmPower+ Marketplace with only the products they qualify for displaying.
- Customers then place the order for the product of their choice within the restrictions pre-determined by the onsite assessment.
- Included in each purchase are the cost of the product, any required accessories, delivery, installation, haul-away, and recycling, and extended warranty service – all at no cost to the customer.
- Customer completes the transaction, including selecting delivery date & time.
- Enervee's retail partner fulfills the order, has the existing appliance professionally recycled, and provides the extended warranty.

Testing Enervee's marketplace platform as a modern online delivery channel for the EmPower+ program was delayed until November 2023 for three main reasons:

- NYSERDA suffered delays bringing their new EmPower+ backend system online.
- NYSERDA could not provide API access as foreseen in the contract, so a new approach (a workaround using tokens) had to be developed, requiring Enervee to build a new marketplace experience for EmPower+ involving a dedicated microsite.
- A number of issues arose with respect to Enervee integration with EmPower+, including gaining access to the vendor portal, data requirements and handling of PII, which have all meanwhile been resolved.

Thus the EmPower+ Marketplace program is just getting off the ground. There have only been 50 EmPower+ referrals with 27 transactions completed (77.8% Refrigerators and 22.2% Freezers) on the EmPower+ Marketplace as of April 2024. Participant surveys have yet to be conducted and the current marketplace offering is at the stage of a minimum viable product and therefore lacks some functionality that was originally foreseen (such as the ability for



people to pay a copay to purchase appliance models that are more expensive than the available EmPower+ credit).



4 Key Takeaways

Stakeholder consultations conducted by NYSEERDA explicitly called out the lack of support for the State's 3.5 million low- and moderate-income (LMI) households to make energy efficient purchases on their own⁴⁶. The Innovative Market Strategies project allowed Enervee to launch and market test the statewide NY Marketplace and to assess its ability to empower underserved customer segments. Overall, this report makes a compelling case that offering an easy-to-use online platform with financing and incentives for efficient products can tackle market and financial barriers to increase the adoption of energy-efficient products in LMI households. Key takeaways from the project are laid out in this section.

The project largely achieved its intended outcomes, although delays impacted total sales volume and related metrics:

- **Technology innovation.** The NY Marketplace and an EmPower+ Marketplace microsite were brought to market, and the NY Marketplace featured both instant rebates and Eco Financing as a payment method to overcome persistent and pervasive financial barriers. Enervee successfully overcame a significant setback with the launch of Eco Financing, which delayed the start of market tests. In addition, the Enervee team secured a \$500,000 allocation from NYSEERDA's LLR program to leverage private capital for affordable consumer loans under the pilot and beyond, including to people with poor credit. Batch LLR program reporting procedures were also developed.
- **Demonstrate product-market fit through DAC engagement and high customer satisfaction.** Across all orders and payment methods, the participation rate of those located in DACs was 32.3%, just under the NYS DAC share of 35%. The share of orders financed by those located in DACs was even higher, at 51%. The rate could have been significantly higher, had it not been for restrictions on lending to people with credit scores below 580, which prevented roughly 67% of loan applicants from being approved. These results demonstrate clear market demand. The NY Marketplace program offering also appeared to deliver for consumers, leaving over 86% of both

⁴⁶ [Statewide LMI Portfolio 2020 Stakeholder Input Companion Document](#), July 2020, pp. 30-31.



DAC and non-DAC participants satisfied with their marketplace experience overall, far exceeding the KPI target of 70%.

- **Favorable pilot performance in terms of units sold and leveraged funds.** During the 7.5-month pilot, 758 efficient appliances and electronics were sold, and sales of refrigerators, freezers and thermostats exceeded the specific unit sales KPI by 25%. Nevertheless, leveraged private investment only reached 44% of the goal.

In addition, the project delivered rich data and insights to inform the design of a scaled NY Marketplace program going forward. The market tests investigated the market response to Eco Financing and the interplay between rebates and Eco Financing.

Eco Financing embedded in an online marketplace fills a clear market gap in NYS energy efficiency programming. Offering a program to support better online retail purchases can deliver meaningful savings, given that the share of major domestic appliances purchased online now exceeds 50%⁴⁷ of all purchases. Overall, 38% of purchases made during the pilot were financed. Excluding transactions under \$200 – which were not eligible for financing (mostly rebated smart thermostat purchases) – 62.2% of purchases were financed. This suggests that many of these purchases could not have been made without the availability of Eco Financing, which is also supported by participant surveys: 87% of borrowers “strongly agreed” that Eco Financing was the enabler for their efficient product purchase.

Point-of-sale Eco Financing is a unique offering in NYS, which empowers New Yorkers to make better 1-off appliance purchases in the course of natural replacement cycles, a need that was called out in stakeholder consultations conducted by NYSERDA. With its focus on online retail purchases, the NY Marketplace is a perfect complement to other NYS programs designed to support people in DACs, including whole home upgrade loans, various HVAC programs and EmPower+.

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<https://www.statista.com/outlook/cmo/household-appliances/major-appliances/united-states#analysis-t-opinion>



Eco Financing over proportionately benefits lower-income New Yorkers and people located in disadvantaged communities

The NY Marketplace benefits New Yorkers in disadvantaged communities proportionately to their share across NYS, and Eco Financing far exceeds the State’s goal of 40% of benefits directed to DACs.

The NY Marketplace effectively overcomes financial barriers experienced by New Yorkers with at least “fair” credit, but new approaches are needed to make the program even more inclusive.

The pilot clearly demonstrated the need for and effectiveness of Eco Financing to overcome financial barriers faced by consumers located in disadvantaged communities. And borrowers with credit scores between 580 and 640 made up 67% of the total. But – with 67% of loan applications rejected due to prospective borrowers not meeting the minimum credit score threshold of 580 – it also pointed to the need to find additional solutions to serve more credit-challenged borrowers. This might include changes to LLR Program rules or new credit enhancement facilities, access to low-cost lending capital and the freedom to rely on alternative underwriting criteria in addition to credit score. Trends and pilot results suggest the accessibility of efficient appliances might be improved by exploring alternative underwriting approaches and financial offerings better suited to small-dollar, unsecured consumer credit to better serve people with no or poor credit scores.

The NY Marketplace has the potential to scale

The pilot results presented above suggest broader opportunities for the NY Marketplace to contribute to New York State’s clean energy transition, for example:

- **Electrification.** Only 7% of New York’s 7.52 million housing units are all-electric⁴⁸. Nevertheless, there are twice as many electric as gas plus propane dryer models in the installed base of residential clothes dryers in the State⁴⁹, while nearly 8X more electric clothes dryers were purchased during the pilot than gas clothes dryers. This suggests that the online retail channel might be effective at driving high-efficiency electric dryer sales and perhaps appliance fuel substitution.

⁴⁸ <https://www.eia.gov/consumption/residential/data/2020/state/xls/State%20Fuels%20Used.xlsx>

⁴⁹ <https://www.eia.gov/consumption/residential/data/2020/index.php?view=microdata>. New York: 2,966,170 electric dryers, 1,321,321 natural gas dryers and 132,653 propane dryers.



- **Potential for VPPs.** Under the pilot, smart thermostats were exclusively sold when rebates at levels customary of existing utility programs were made available – most within a 3-day period – demonstrating the potential to scale sales of this critical technology. While the IMS NY Marketplace pilot did not include thermostat pre-enrollment in demand-response programs (DRPE), DRPE is a feature that can and should be added to the NY Marketplace program going forward to develop large-scale virtual power plants (VPPs) that can deliver grid benefits and moderate energy prices⁵⁰. There is potential to increase smart thermostat uptake within DACs by offering heavily-rebated devices for bundling with other purchases that qualify for financing.

It is too early to fully assess the EmPower+ program integration

Given the fact that many adjustments were made to the original plan for this component (refer to Chapter 2.2 above for details), its launch was significantly delayed. As a result, only a small number of people enrolled in EmPower+ have been invited to use the EmPower+ Marketplace to date. Furthermore, the current offering is at the stage of a minimum viable product and therefore lacks some functionality that was originally foreseen, such as the ability for people to pay a copay to purchase appliance models that are more expensive than the available EmPower+ credit. Enervee therefore recommends that the IMS program evaluation include research on those participating in the EmPower+ component, since there was insufficient time to do so during the pilot.

Conclusion

This report documents the success of the statewide NY Marketplace pilot and provides NYSERDA and the New York Public Service Commission with valuable information to justify the expansion of the program in 2024/25, as well as to continue to fund it in 2026 and beyond.

⁵⁰ Enervee has consistently maintained thermostat DRPE rates over 90%. According to Keri Carnes, Director Customer Grid Solutions at Arizona Public Service (referring to the APS Marketplace operated by Enervee): “In the first year, we sold about 40,000 thermostats through the marketplace at a rate of 97% pre-enrollment, so that’s tremendously successful.”



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