

IESO
2021-2024 Conservation and Demand Management Framework
Mid-Term Review

Comments
by
Enervee

I. Introduction and Background

Broad availability of energy efficiency programs for all IESO customers is needed to help Ontario achieve its conservation goals and maintain a reliable grid. Consumers make energy-related purchases every day (new appliances, electronics, and other energy-consuming goods for the home), and when these purchases are inefficient, they lock in higher energy usage, higher energy bills, and greater greenhouse gas emissions for years or even decades. Yet consumers face challenges in making informed decisions about energy efficiency:

- The market lacks transparency about which products are most efficient. In some instances, two products that seem similar—same brand, size, features, and Energy Star rating—use substantially different amounts of energy. There isn't always an easy, trusted resource that customers can consult to help differentiate products.
- Consumers frequently make decisions under pressure. When an appliance breaks and they need to immediately replace it, they may not have the time to do thorough product research. And because many products have long useful lives, it may have been many years since the customer last made a similar purchase (if they ever have), thus compounding the challenge they face in understanding product options.
- Customers also have competing priorities for their time and money. Learning about and investing in energy efficient products might not be on their radar as they go about their daily lives. As a result, they might turn to the product with the lowest upfront cost, even if it will cost them more in the long run as a result of higher energy bills.

Customers need help overcoming these barriers. They need access to easily and quickly digestible information about which products best meet their energy efficiency needs and budget. They need this information when they are purchasing products during their natural replacement

cycles, *i.e.*, on a moment's notice when an appliance or other product breaks and it needs quick replacement. As discussed further below, Enervee's online marketplace, featuring a choice engine and the Enervee Score, provides these benefits to customers. It allows customers to research, learn about, and ultimately purchase energy efficient products, overcoming the barriers described above. And it has been proven to save customers energy, with or without ratepayer-funded rebates.

II. Comments

A. Are there additional program gaps that should be addressed?

To maximize energy savings and maintain reliability throughout the ISEO region, all residential customers should have access to energy efficiency programs. This is especially true, given that, as the 2021-2024 Conservation and Demand Management Framework notes, “[t]he outbreak of the Novel Coronavirus (COVID 19) in Ontario in early 2020 has had a significant impact on electricity consumers, the electricity system and Ontario’s economy.”¹ The 2021-2024 plan provides important access to low-income customers through its Energy Affordability Program (\$36-40 million annually) and on-reserve First Nations communities in Ontario through its First Nations Program (\$9 million annually). But there are no offerings for customers outside these two categories, even though residential customers in Ontario account for nearly a third of all electricity usage.² Thus, there is a significant opportunity for additional energy and demand savings by targeting programs to all residential customers.³

¹ Available at <https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives/2021-2024-Conservation-and-Demand-Management-Framework>.

² See [https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-ontario.html#:~:text=Energy%20Future%202021-.Description%3A,%2C%20commercial%20\(at%2016%25\)](https://www.cer-rec.gc.ca/en/data-analysis/energy-markets/provincial-territorial-energy-profiles/provincial-territorial-energy-profiles-ontario.html#:~:text=Energy%20Future%202021-.Description%3A,%2C%20commercial%20(at%2016%25)) (43.9 TWh residential, 41.6 TWh industrial, 53.3 TWh commercial in 2019).

³ We recognize that the 2021-2024 CDM Framework only contemplates specific programs for on-reserve First-Nations communities and low-income and income-eligible residential customers. See 2021-2024

One way to reach residential customers at scale and drive them to make high efficiency purchases is through an online efficient product marketplace. In recent years, ecommerce has thrived, and consumer shopping habits have changed. They have become more and more willing to make purchases online—even large purchases like appliances that are traditionally thought of as in-person purchases. And even when consumers want to purchase a product in store, a majority engage in at least some online product research.

Enervee’s online efficient product marketplace can be made available to all residential IESO customers, with a set up time of just two months. And our experience shows that when our marketplace is available and customers are made aware of it through targeted marketing, it is a scalable solution. As just one example, over a period of 15 months, nearly half of all residential customers of one of our utility partners visited the marketplace.

While some online utility stores offer limited product selection (typically lighting, thermostats, and small items like power strips), Enervee’s online marketplace includes thousands of products in more than 40 product categories of appliances, electronics, plug loads, and other products. With the help of our choice engine, customers can compare products based on numerous factors: price, brand, fuel source, size, smart compatibility, color, and numerous product-specific features (*e.g.*, top-load vs. front-load washers, side-by-side vs. bottom-freezer refrigerators, etc.) while layering in energy efficiency performance using a simple patented Enervee Score. Customers are increasingly accustomed to—and even expect—shopping online

Conservation and Demand Management Framework, *available at* <https://www.ieso.ca/en/Corporate-IESO/Ministerial-Directives/2021-2024-Conservation-and-Demand-Management-Framework>. The Framework, however, also requires IESO to “procure, through competitive mechanisms, measures to address regional and/or local electricity system needs, including through local CDM programs, projects or pilots.” *Id.* Our proposal for an online marketplace, as discussed in more detail below (whether offered as a full-term program or a pilot), would help IESO address regional and local electricity needs by lowering the overall demand for electricity.

this way, using services like Airbnb and Orbitz to narrow down their options by choosing different parameters that meet their needs. The Enervee marketplace brings to them a familiar experience in a new context—shopping for efficient products. And after engaging with the Enervee choice engine, the marketplace can direct customers, with a click of the mouse, to local Ontario third-party retailers where the desired product can be purchased.

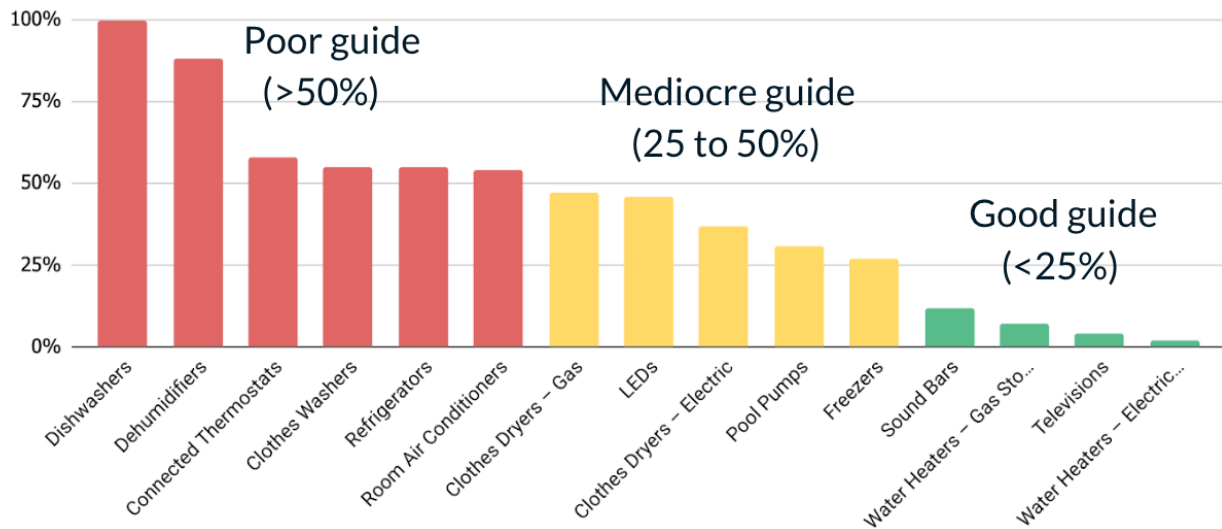
The advantage of Enervee’s online marketplace is in its ability to help customers overcome various barriers to energy efficiency, including market, cognitive, and psychological barriers.

A critical market barrier that prevents customers from being as energy efficient as they want to be is a general lack of transparency. That is, it can be very difficult for the average customer to know which products are the most energy efficient and will thus save them the most money over the lifetime of the product. Customers similarly face cognitive/psychological barriers. They often lack the time or resources to exhaustively research energy efficiency ratings of all products. This is especially true when an appliance or other home product breaks and they need to replace it quickly. Under those circumstances, they might be drawn to a product with the lowest upfront cost, even if it will cost them more in the long run because of higher energy use.

Some consumers (and others) might believe that the Energy Star Canada label provides the transparency that consumers need. Energy Star does, at least in some instances, help consumers make more informed decisions. But in some product categories, a substantial majority of products are Energy Star rated, thus making the designation less valuable:⁴

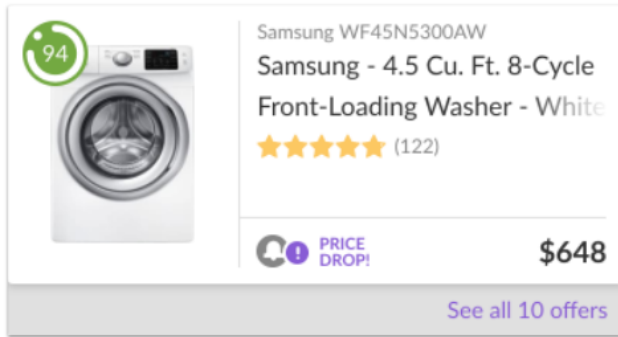
⁴ We cite Energy Star statistics from the United States because the Energy Star program is run by the U.S. Environmental Protection Agency and U.S. Department of Energy. Canada is an international partner in the U.S. Energy Star program.

2020 ENERGY STAR market penetration

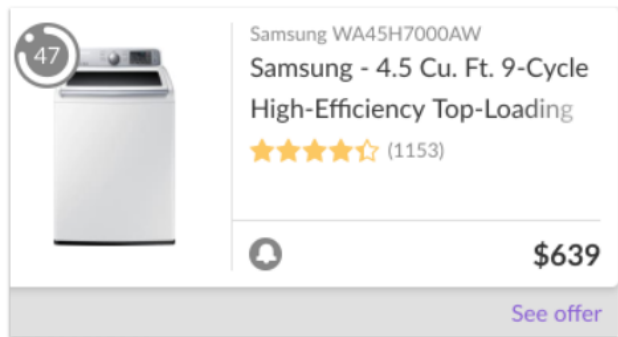


The takeaway here is *not* that every dishwasher is comparably efficient and that customers can indiscriminately pick one out of a hat. To the contrary, even among those products that are Energy Star certified, there can be a wide range of efficiencies.⁵ For example, in the following graphic, there are two washing machines that are the same brand, same size, about the same price, and both are Energy Star rated, but one uses *twice as much* energy as the other:

⁵ Energy Star does further differentiate products by labeling some “Energy Star Most Efficient.” See <https://www.nrcan.gc.ca/energy-efficiency/energy-star-canada/about/energy-star-most-efficient/13612>. But this designation is only available for certain categories of products and does not include things like water heaters, ovens, ranges, or electronics.



“Both ENERGY STAR. Same price, size and brand. Half the energy use.”



If a customer were to rely solely on the Energy Star label, they might purchase a significantly less efficient product without knowing it.

With an IESO and/or Local Distribution Company (LDC)-branded online marketplace like Enervee’s, however, a customer could easily identify the most efficient products. Through the use of a choice engine—which has been proven through peer-reviewed research to be effective at driving energy savings, even without rebates⁶—customers can sort products by various features and are directed to the most efficient and cost-effective choices in each product category. This is made possible by the 0-100 Enervee Score, which rates every product in the market by efficiency, thus giving customers ready access to information about product efficiency. This provides transparency to customers, thus overcoming the market barrier. And

⁶ See, e.g., Anne Arquit Niederberger, *Energy Savings Without Incentives: Evaluated Results from Utility Marketplace Deployments in Illinois*, ACEEE (forthcoming 2022).

because it is easy to understand and readily available for each product, it reduces cognitive effort and nudges consumers toward the most efficient purchases without them needing to expend significant time and effort researching every product in the market. In short, Enervee’s online marketplace with choice engine and Enervee score educates customers and makes it easy for them to make energy-saving choices.

This model has proven effective in driving market-based savings, that is, nudging customers to make more energy efficient decisions on their own without the need for ratepayer or other subsidies (*i.e.*, rebates). In Illinois, for example, two different independent evaluators found that the availability of Enervee’s “Efficient Choice” tool—an online marketplace with a choice engine that directs customers to retailers to make efficient purchases—led to verified, cost-effective energy savings in 2021. The Illinois commission is expected to approve these evaluations, and the methodologies for verifying savings from the Efficient Choice tool will likely soon be included in the Illinois Technical Reference Manual. (As discussed below, utility-specific rebates can also be integrated into the marketplace, providing another avenue for savings, but the choice engine alone is an effective way to help customers lower their energy usage.)

An IESO marketplace could also seamlessly integrate with local distribution companies. For example, the marketplace can also incorporate demand response, allowing customers to purchase connected products (like smart thermostats) and instantly enroll in a demand response program offered by IESO or their local utility. Further, while the marketplace can drive market-based energy savings without rebates, it is possible to incorporate rebates into the platform where applicable. If LDCs are offering rebates for their customers, the marketplace can instantly apply those rebates when a customer purchases an eligible product on the marketplace. Or if the

customer purchased the product elsewhere, the marketplace can help the customer process the rebate after the fact. The IESO marketplace would serve as a platform with open access to utility participation. Enervee has seen success with this model in the state of Vermont, where the statewide Efficiency Vermont marketplace also processes rebates for the Burlington Electric Department, a local utility.

B. Are there additional enhancements for the income-qualified or First Nation programs that could be considered?

The Energy Affordability Program provides energy efficient products to income-qualified customers at no direct cost to the customer. Available products are LED lighting, showerheads, faucet aerators, drying lines for clothes, refrigerators, window air conditioners, smart power strips, attic/basement insulation, door/window weatherstripping, and thermostats.⁷ There are at least two enhancements that should be considered: increasing the number of product categories included in the program and offering an online energy efficiency marketplace.

There are numerous other sources of electric usage in homes that do not appear to be included in IESO's current offerings, primarily water heating, appliances (dishwashers, ovens, ranges, clothes washers, clothes dryers), and other plug loads (air purifiers, dehumidifiers, electronics). These products, and many others (more than 40 in total) are available on Enervee's marketplace. And these sources of electricity usage can be substantial. According to recent data, for example, residential customers use more than 14% of their electricity on water heating alone—double what they use for space heating.⁸ Thus, programs for low-income customers

⁷ See <https://www.saveonenergy.ca/For-Your-Home/Energy-Affordability-Program> (listing available measures).

⁸ This is based on the most recently available data in the New England region of the United States. See U.S. Energy Information Agency, Residential Energy Consumption Survey (RECS), Table CE4.2, available at <https://www.eia.gov/consumption/residential/data/2015/c&e/pdf/ce4.2.pdf>. New England was chosen as the most comparable region in weather to Ontario.

would be enhanced by offering them opportunities to lower their energy consumption resulting from these additional sources.

Second, for all the reasons described above, income-qualified customers can benefit from the online marketplace with choice engine and Enervee Score. In some instances, income-qualified customers can afford the cost of efficient products—they just need information about what product is most efficient. At times, in fact, an efficient product might be priced the same or even lower than a comparable inefficient model. Income-qualified customers can benefit from the education and transparency that the marketplace provides, even if the products are not heavily subsidized. And where product rebates are available, the online marketplace can help market those rebates to consumers and can walk customers through the process of submitting a rebate for reimbursement for a product they have already purchased.

These two enhancements can work together to help income-qualified customers, as the online marketplace can offer thousands of products in more than 40 categories, well beyond the scope of what is currently offered through free direct-install options.

C. Are there any implementation considerations you see with any of the program opportunities?

1. What enhancements would be desired for the Custom Retrofit initiative if it were to be reinstated?

Enervee has no comments on this question at this time.

2. For the greenhouse sector, are there any additional measures that should be considered?

Enervee has no comments on this question at this time.

3. Are there additional opportunities for the residential sector that should be considered?

Please see Enervee's comments above regarding online marketplaces and expansion of available measures.

D. What conditions are needed to further enable innovation and market-based solutions? Are there success stories that can be shared from experiences in other jurisdictions?

Broadly speaking, innovative and market-based solutions require a competitive market for energy efficiency products and services. To offer effective programs, however, third-party implementers need to be able to reach customers. Utilities often have unique or even exclusive access to customer data, including energy on data usage, demographics, and contact information (like email addresses). For third-party implementers to offer effective programs, they must be able to tailor their programs to the needs of particular customer segments and to efficiently and cost-effectively market their programs to the right customers. Sometimes this could be as simple as the utility allowing a third-party implementer to send emails to utility customers about their energy efficiency offering. This has been proven to be an effective way to reach customers at scale and to offer them tailored recommendations to their specific needs and wants. Other times, more complex data sharing might be necessary (for example, sharing customer load shape data to assist in the design of demand response programs). IESO or the utilities would need to take steps to ensure that customers' personal data is protected, but effective data sharing with third parties is essential to maximizing the benefits of energy efficiency offerings.

E. How can the IESO further support the energy transition for consumers in all sectors?

Energy efficiency must play a key role in Canada's energy policy for the simple reason that lowering usage reduces the need to generate electricity in the first place, thus speeding up the transition away from fossil fuels. Thus, IESO should look for any and all opportunities for energy efficiency in all sectors. As discussed above, this means, among other things, broadening the scope of residential energy efficiency programs to (i) reach all customers, not just income-qualified and First Nations, (ii) include as many categories of products as possible because each

purchase can lock in energy savings for years to come, and (iii) expand options for income-qualified customers to include more than just free direct installation, including the ability to be educated on energy efficiency through the use of an online marketplace with a choice engine, which, as discussed above, has been proven to drive market-based energy savings without the need for rebates.

III. Conclusion

IESO has an opportunity to increase access to energy efficiency for consumers throughout Ontario. An online efficient product marketplace is a broad solution that can reach all residential customers, allowing them to identify and purchase efficient products that meet their needs. The online marketplace model with choice engine is a unique way to help customers lower their usage, meet carbon reduction goals, and save money, by educating them and directing them to the most efficient products that meet their needs. This market-based solution would bring substantial benefits to the IESO region and electricity consumers.

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/s/ Chris Healey _____
Chris Healey
Director, Utility Regulatory Affairs
Enervee
11845 W. Olympic Blvd.
Suite 1100W #32
Los Angeles, CA 90064

