

Bridging the Gap to Market Transformation – A Case Study for Heat Pumps in Québec

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ABSTRACT

Resource acquisition programs have delivered energy savings across North America for decades. However, the one-project-at-a-time approach is no longer sufficient to address the dual challenges of climate change and grid constraints driven by rapid electrification. To meet energy transition goals, genuine market transformation is needed to scale energy and demand savings.

In Québec, residential heating is a major contributor to electrical load, and heat pumps are central to Hydro-Québec's 2035 Action Plan, which targets energy savings of 21 TWh by 2035 from energy efficiency measures (Hydro-Québec, 2023). In 2024 alone, the LogisVert program incentivized 80,000 high-efficiency cold climate heat pumps. Yet Hydro-Québec recognized that resource acquisition alone would not achieve its ambitious targets. As a result, the utility sought to explore a market transformation approach for residential heating.

Econoler, as evaluator of the LogisVert program, was tasked with providing analysis to inform Hydro-Québec's decision on transitioning to a market transformation framework. Through market and process evaluations, Econoler collaborated with Hydro-Québec to adapt research questions and data collection tools to support future program design. Key outputs included: a census of current market interventions, an analysis of barriers to heat pump adoption, a draft market transformation logic model with proposed interventions, baseline metrics including market progress indicators and an initial estimate of the natural market baseline.

Based on these findings, Hydro-Québec is now developing a market transformation program and implementation plan aligned with the recommended logic model. This paper presents a case study of a pragmatic approach to accelerating the shift from resource acquisition to market transformation by embedding foundational data collection within the evaluation of an existing program.

Introduction

Market transformation presents a paradigm shift for many demand-side management (DSM) program administrators who rely on resource acquisition programs to meet their electrification targets as well as energy and demand savings goals. Resource acquisition programs are focused on near-term energy savings often achieved by incenting individual participants to adopt energy efficient measures. Market transformation programs target all consumers and aim to make structural changes in the market to lead to long-term energy savings (Keating and Prahl, 2014).

Hydro-Québec, a vertically integrated Canadian electricity utility, has a sizable resource acquisition program, LogisVert,¹ aimed at the adoption of high-efficiency cold climate heat pumps in the residential sector.² Most households in Québec use electricity as their main heating source, with the default heating system being inexpensive electric baseboards. Hydro-Québec operates in a region where even cold climate heat pumps are pushed to their maximum operating temperatures (with design temperatures as low as -25°C/-13°F). Hydro-Québec classifies residential heat pumps into three efficiency levels and provides incentives for both efficient and very high-efficiency heat pumps as part of the LogisVert program:

- Efficient heat pumps: Those included on the NEEP cold climate heat pump product list, meaning they have a coefficient of performance (COP) of at least 1.75 at -15°C
- Very high-efficiency heat pumps: Having a COP of at least 1.8 at -15°C in addition to maintaining at least 70% of maximum heating capacity from -8°C to -15°C
- Standard heat pumps: Those that do not meet the above criteria for efficient heat pumps.

Econoler recently completed market and process evaluations of the LogisVert program. As part of that mandate, Econoler investigated, in collaboration with Hydro-Québec, how incremental additions to the evaluation scope could provide the elements needed to design a heat pump market transformation program and establish a baseline for that future market transformation program. The following outlines the evaluation approach, specifically how planned data-collection activities served to gather key information for market transformation, the resulting market transformation-related deliverables, and lessons learned.

Evaluation Approach and Methodology

Certain analytic steps are required to establish a market transformation program and claim market effects savings from that program (NMR 2019). These are:

- Identify target market
- Characterize the market (including barriers and leverage points) and identify the baseline
- Develop a program theory and indicators of market effects
- Decide on a method to measure savings
- Collect and analyze required data to quantify savings

¹ Hydro-Quebec incented approximately 80,000 heat pumps through its LogisVert program in 2024, with over 70% of those being very high-efficiency heat pumps.

² Hydro-Quebec took over administration of the program in 2021; prior to that, the Quebec government had administered a program targeted at heat pump adoption.

Hydro-Québec had already identified residential heating as the target market therefore Econoler focused efforts on the following five market transformation elements:

1. Analysis of market barriers to the adoption of cold climate heat pumps
2. Identification of activities that address the market barriers, including a census of activities currently part of the Hydro-Québec LogisVert program
3. A logic model depicting program theory - documentation of barriers, activities to overcome these barriers, and anticipated outcomes
4. Market progress indicators and baseline data
5. Natural market baseline defining how the market is expected to evolve without the intervention of the program administrator

It is important to note that these elements, while necessary, are not sufficient to support the establishment of a market transformation program. An important aspect is ensuring there is a policy and regulatory framework supporting the program. A key objective of this work was to provide analysis to Hydro-Québec to inform discussions with stakeholders on the potential for establishing a market transformation framework for heat pumps in the province and a robust starting point for the design of such a program.

The table below presents the data collection included in the scope of the market and process evaluation and how activities were leveraged to collect the data required to develop the five market transformation elements noted above. Notably, Econoler added questions to the data collection instruments targeted at LogisVert participants and market actors (installers, builders, and distributors) to understand barriers and gaps in the current program and gather data on market progress indicators. In addition, questions were added to the Delphi panel and market expert interviews to develop a natural market baseline. Econoler reviewed market transformation characterization reports and market transformation studies from several jurisdictions to inform the data-collection approach and questions (Johnson et al. 2023, Kizner et al. 2022, Lee et al. 2019, Lis et al. 2017, NMR and DNV 2024).

Leveraging the market and process evaluation activities was efficient as some of the data (e.g. satisfaction with heat pumps) were to be collected as part of the process evaluation, whereas in other cases, a few more questions needed to be added to already planned data collection. A key aspect of ensuring this was successful was planning for this at the onset of the evaluation. While not perfect (e.g. some market transformation areas would have benefited from additional exploration), the trade-off was considered acceptable due to the efficiencies gained.

Table 1. Evaluation Approach and Methodology for Market Transformation Elements

Data-Collection Activity	Sample Size	Market Barriers	Identification of Market Transformation Activities	Logic Model	Market Progress Indicators	Natural Market Baseline
Documentation review	N/A		X	X	X	
Literature review of existing heat pump programs	7	X	X	X		
Interviews with jurisdictions	4	X	X	X		
Web survey of general population ³	7,269	X	X	X	X	X
Web survey of Hydro-Québec program participants	15,734 ⁴	X	X	X	X	X
Interviews with participating builders	15	X	X	X	X	
Telephone survey with installers	68	X	X	X	X	X
Telephone survey with non-participating builders	30	X	X	X	X	
Interviews with distributors (round 1)	8	X	X	X	X	X
Delphi panel with distributors (round 2)	6	X	X	X	X	X
Interviews with market experts	5	X	X	X		X

The approach to each market transformation element and results are presented in the following sections.

Market Barriers, Market Transformation Activities, and Logic Model

Econoler began with a review of Hydro-Québec documentation and used its own market knowledge to list known barriers related to the heat pump market. The list of barriers was then used to develop more precise questions to gather perspectives from participants, distributors, and installers about their experience with the heat pump market barriers in Québec. In addition to the barriers faced by the overall market, Econoler identified barriers particular to the rental and new construction markets as both of these market segments were identified as challenging. While the current Hydro-Québec program, LogisVert, is aimed at both the existing and new construction markets, new construction only made up 1% of applications in 2024.

Following the analysis of market barriers, Econoler identified activities that could be implemented by a future Hydro-Québec market transformation program to address each barrier. First, Econoler completed a census of current Hydro-Québec activities under the LogisVert program and mapped these to the list of barriers. A key barrier identified, at least in the short to medium terms, is the high upfront purchase and installation costs of heat pumps compared to the baseline technology of electric baseboards; a barrier which is partially addressed by current LogisVert incentives.

³ SOM, Sensibilisation intégrée, October 2024. Prior to the evaluation, Hydro-Quebec contracted SOM, a Quebec market research firm, to complete a general population survey covering energy consumption behaviours and measures. The provided sample size indicates those households that responded on heat pumps.

⁴ Hydro-Quebec requested a large sample size that included multiple years of program participants as a key process evaluation objective was to analyze participant responses from several years of the program.

Next, Econoler completed a literature review and jurisdictional scan to investigate which market transformation activities were being implemented in other jurisdictions, as outlined in Table 2 below. It should be noted that the reviewed programs, with the exception of the MassSave program that has recently been reclassified as a market transformation initiative, are considered resource acquisition programs but include activities with broader impacts on the market.⁵ The activities noted in Table 2 were reported by the interviewed jurisdictions as being the most impactful on the market.

Table 2. Market Transformation Activities Implemented by Selected Jurisdictions

	 BC Hydro Power smart	 mass save Energy Upgrade Energy Efficiency	 Energie NB Power	 NEW YORK State Energy Research and Development Authority NYSERDA
• Creation of a network of certified installers to guarantee quality installations	✓	✓	✓	✗
• Inspection and monitoring of installations to ensure that installers follow good installation practices	✓	✓	✗	✗
• Collaboration with manufacturers and distributors to promote heat pumps	✓	✗	✗	✓
• Simplifying the customer journey through the creation of personalized support tools and services	✓	✗	✗	✗
• Financial incentives for distributors to increase inventory and promote heat pumps	✗	✓	✗	✗
• Introduction of enhanced financial assistance for low-income households	✗	✓	✗	✗

In addition to the results of the jurisdictional scan, the results of the market and process evaluations were used to inform the list of proposed activities. For example, the results of the installer and participant surveys indicated that knowledge about the advantages and proper use of heat pumps was lacking, which led to the addition of proposed installer and consumer activities for educational materials on these topics; participant and non-participant builder interview results indicated that including heat pumps, especially central heat pumps, in new residential buildings increases costs and therefore new home prices, which led to the inclusion of a proposed activity to study and lobby for the advancement of a building code requiring heat pumps. Table 3 below lists a sample of key barriers not currently addressed by the LogisVert program and corresponding proposed activities.

⁵ The heat pump market transformation program administered by Northwest Energy Efficiency Alliance was reviewed, but the documented barriers and activities in that market were excluded from Table 2 given the higher level of market transformation advancement in the American Northwest.

Table 3. Heat Pump Market Barriers and Proposed Market Transformation Activities

Barrier	Proposed Activity
<p>Lack of trust in installers</p>	<p>Network of certified installers. Hydro-Québec could set up a network of certified installers and feature a list available on its website. Certification could be based on various criteria, such as successful training completion and/or a certain number of completed onsite inspections, as well as the absence of complaints to the Office de la protection du consommateur (Québec Consumer Protection Office). Such certification would increase customer confidence and make it easier to find an installer.</p>
<p>Lack of knowledge of professionals about heat pumps</p>	<p>Technical support for professionals. Hydro-Québec could offer technical guides, tools, and training to help heat pump installers and distributors better understand the advantages of efficient heat pumps, better size them for heating loads, and install them properly (e.g. properly position the indoor head, avoid refrigerant pipes that are too long or poorly insulated, properly set the temperature at which the secondary system activates, etc.). Guides could include tools such as simplified heating load calculators.</p> <p>Onsite inspections. Onsite inspections would be focused on heat pumps installed under the LogisVert program. They would make it possible to document errors made during installation to improve technical guides for professionals and to follow up with installers who need more training or coaching. In the longer term, these inspections would serve to improve the quality of installations and are likely to improve consumer satisfaction with installations and, incidentally, with installers.</p>
<p>High purchase and installation costs: Installing a heat pump involves higher purchase and installation costs than keeping the existing system or installing a less efficient system (e.g. electric baseboard heaters, natural gas furnaces).</p>	<p>Enhanced financial assistance for low-income households. To achieve market transformation that extends beyond middle to high-income households, higher levels of financial assistance would need to be offered to households that do not have sufficient disposable income to invest in a heat pump.</p>
<p>Poor opinion about heat pumps among customers and installers: Some customers have a poor opinion of heat pump performance and comfort based on their own experience or that of those around them. For example, some customers have had heat pumps that did not heat sufficiently when it was very cold outside or that did not reduce their energy bill as much as expected. These performance issues are due in particular to suboptimal heat pump control (e.g. poor coordination between backup systems and heat pumps, thermostats unsuitable for heat pumps with changing set points, etc.) and to the limitations of very low-temperature heat pumps (below -15°C). Similarly, not all installers are convinced of heat pump reliability and, therefore, avoid recommending them to some customers.</p>	<p>Support for heat pump technology commercialization and deployment. Solutions to the challenges of heat pump control and performance at very low temperatures are being developed or are ready for commercialization, such as integrated controls (thermostats that can control both baseboards and the heat pump) and a new generation of heat pumps that operate at very cold outdoor temperatures. Hydro-Québec could support the commercialization and deployment of these technologies in Québec, notably by funding pilot projects to improve performance and user experience.</p> <p>Consumer educational material on how to use heat pumps to maximize benefits. The same educational materials, developed to address lack of consumer knowledge about the technology, should also include information on optimal heat pump operation. (For instance, how do I control my heat pump? Should I reduce the temperature at night or when the house is empty?)</p>

Barrier	Proposed Activity
<p>Lowest construction price imperative (new construction): To be competitive, new home builders must ensure they obtain the lowest price, which limits the investments made in energy efficiency. Building energy consumption is not quantified at the time of purchase, preventing consumers from realizing the long-term value of energy efficiency and factoring it into their purchasing decisions.</p>	<p>Studies on and lobbying for the advancement of a building code requiring heat pumps. Building codes are powerful tools for improving the energy efficiency of all new buildings. All properly designed heat pump market transformation activities increase the penetration of heat pumps and eventually make the inclusion of heat pump measures in the building code acceptable. Hydro-Québec can support the development of a code adapted to Québec realities, invest in code compliance (e.g. inspections), and make representations to the provincial government that has the power to adopt a new code.</p>

Heat pump costs were identified as the most predominant barriers in the market. Due to low electricity costs in Québec, the payback period for heat pump installations over the baseline technology of electric baseboards is long (10 years for efficient heat pumps and 11 years for high-efficiency heat pumps). Moreover, data-collection results demonstrate the importance of LogisVert incentives in the market. The current incentive reduces the payback by one year for efficient heat pumps and three years for high-efficiency heat pumps, lowering the payback period to nine and eight years respectively. Distributors noted that LogisVert incentives are key to the increased heat pump adoption rate in Québec.

The resulting logic model illustrated in Figure 1 below outlines the barriers identified as part of the research, proposed activities to address each barrier, as well as expected short, medium, and long-term outcomes. Econoler used a numbering system to identify which activities are linked to which outcomes. Activities in light teal indicate activities already part of Hydro-Québec’s current LogisVert program.

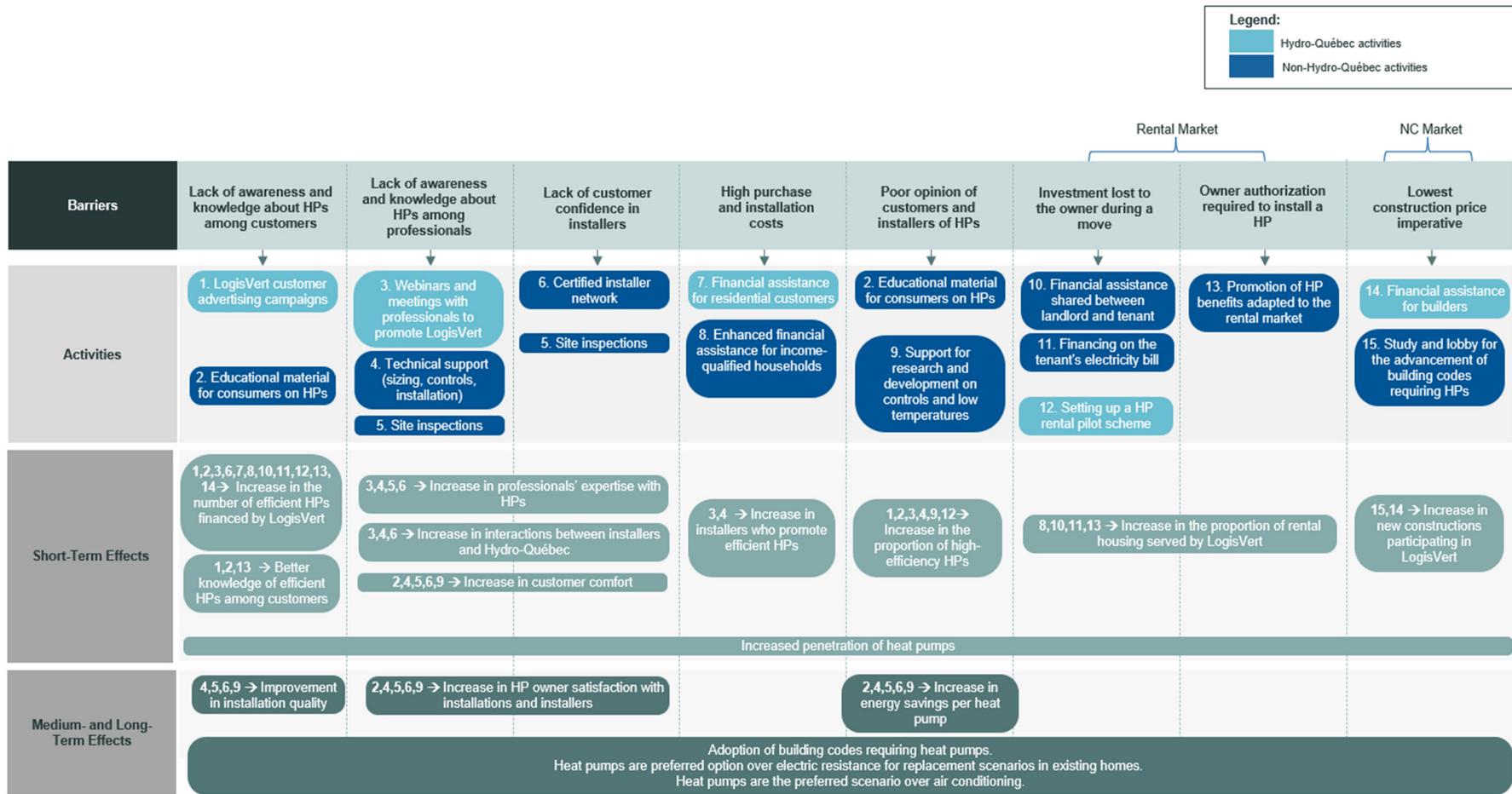


Figure 1. Market Transformation Logic Model

Market Progress Indicators

As part of developing the logic model, Econoler proposed an initial list of market progress indicators that would enable Hydro-Québec to assess the outcomes of the market transformation program, as presented in Table 4 below. Market progress indicators represent measurements of market changes that are the result of a given intervention or activity. Based on the evolution of market progress indicators, Hydro-Québec (and the evaluator) would be able to assess whether the market is evolving according to the program theory depicted in the logic model. The highlighted data include 2024 data for which information was collected as part of the market and process evaluation work. If Hydro-Québec adds additional market transformation interventions, Econoler would expect the indicators to move in the anticipated direction per the program theory over time.

Table 4. Proposed Market Progress Indicators

Activities	Outcomes	Market Progress Indicators	Sources	2024 Results
Short Term				
3, 4, 6	Increased interaction between installers and Hydro-Québec	Number of participants in training sessions or activities organized by Hydro-Québec	Hydro-Québec (HQ) tracking	TBD
3, 4, 5, 6	Increased expertise of heat pump (HP) professionals	Average onsite inspection score Number of certified installers	Site visits HQ tracking	TBD
1, 2, 3, 6, 7, 8, 10, 11, 12, 14	Increased number of efficient heat pumps subsidized by LogisVert	Number of heat pumps subsidized per year	HQ tracking	80,000 in 2024
3, 4	More installers promoting efficient heat pumps	Percentage of participating installers who always promote efficient heat pumps	Installer survey	Participating installers: 93% (efficient HPs) 86% (very-efficient HPs) Non-participant installers: TBD
1, 2, 12	Increased consumer awareness about efficient heat pumps	Percentage of the general population familiar with efficient heat pumps	Gen pop survey	80%
8, 10, 11, 12	Increased proportion of rental housing served by LogisVert	Number of rental units participating in LogisVert	HQ tracking	<1%
All	Increased penetration of heat pumps	Percentage of owner and renter households with a heat pump	Gen pop survey	44% owners, 9% renters
		Percentage of new homes with a heat pump	Gen pop survey	TBD
1, 2, 3, 4, 9	Increased proportion of very high-efficiency heat pumps	Percentage of annual sales of very high-efficiency heat pumps	Distributor interviews/Delphi panel	78%

Activities	Outcomes	Market Progress Indicators	Sources	2024 Results
13, 14	Increased new LogisVert constructions	Number of new buildings participating in LogisVert	Builder surveys	<1% (approx. 160 buildings)
2, 4, 5, 6, 9	Increased consumer comfort	Percentage satisfied with heating and cooling capacity	>Gen pop survey >Participant survey	Participants: 93% (heating capacity), 82% (cooling capacity)
Medium and Long Terms				
4, 5, 6, 9	Improved installation quality	Percentage of quality installations based on onsite inspections	Site visits	TBD
2, 4, 5, 6, 9	Increased satisfaction among heat pump owners	Percentage of population who say they are satisfied with their heat pumps	Gen pop survey	TBD
		Percentage of LogisVert participants who say they are satisfied with their heat pump	Participant survey	90%
2, 4, 5, 6, 9	Increased energy savings per heat pump	Percentage of population who use a heat pump for heating during cold spells	Gen pop survey	TBD
		Average savings per heat pump, established using measurement analysis	Impact evaluation	TBD
All	Adoption of building code requiring heat pumps	Code adopted for new buildings Code or standard adopted for existing buildings (longer term)	Code review	N/A

Given Hydro-Québec’s presence in the market through the LogisVert program, certain indicators presented in Table 4 above are relatively high. However, this should not be interpreted as meaning the market is already being transformed since market actors noted the importance of program incentives in driving their efficient heat pump recommendations and sales. This illustrates a disadvantage of beginning market transformation activities after a resource acquisition program is already in market; as it becomes complex to extract the precise influence of the program.

According to distributors, 78% of the heat pumps sold on the market are very high-efficient, 10% efficient, and 12% standard. Similarly, the proportion of very high-efficient heat pumps installed in LogisVert is 73%. For the majority of distributors, the LogisVert program incentives have had a significant impact on the efficiency of the models sold. In fact, the proportion of sales of high-efficiency heat pumps in 2021 ranged between 0% and 50% (approximately 36% on average) of total heat pumps sales. In 2024, distributors almost no longer sell standard models.

Satisfaction among participants who install a heat pump is currently high, the market transformation program should maintain heat pump satisfaction as penetration increases.

These results highlight the need to refine or collect additional data for some of the market indicators to ensure Hydro-Québec has the most robust measurements of market outcomes in the broader population (not just participants) and more refined indicators (e.g. delving deep to test consumer familiarity with heat pumps).

Natural Market Baseline

The market progress indicators presented above constitute key elements in demonstrating, in the future, that market changes are occurring and that the program is influential in said changes. In future evaluations, the natural market baseline will be used to estimate the energy-saving impacts of the market transformation program and to claim savings for market transformation. The natural market baseline is how the heat pump market would have evolved in the future without any Hydro-Québec intervention, and this means estimating the penetration of heat pumps if the LogisVert program were removed.

The natural market baseline is the comparison point with the actual penetration that will be measured in the coming years following the implementation of the various program market transformation activities. The difference between the natural market baseline and actual penetration will provide the net energy savings attributable to the market transformation program. This aspect of the assignment was the most challenging because Hydro-Québec (and prior to that the Government of Québec) has had a resource-acquisition program in the market for several years.

The natural market baseline was developed using five parameters and Econoler triangulated several data sources to establish these parameters. A Delphi panel, consisting of conducting a second round of interviews with distributors after the first round of primary data collection, served to confirm or consolidate results. The data collected in the first round was tested in the Delphi interviews and further refined as required. As part of the Delphi panel approach, Econoler developed and shared a figure outlining projected heat pump penetration and incremental households with heat pumps to help the panel project over 10 years how penetration may change in the absence of Hydro-Québec interventions. The natural market baseline parameters were then further validated using interviews with market experts. The natural market baseline parameters, their sources, and reliability are provided in Table 5 below.

Table 5. Heat Pump Natural Market Baseline Parameters

Parameter	Unit	Value	Source	Reliability
2024 penetration rate (stock)	Percent of households with a heat pump (all types)	31%	Triangulated using general population survey, distributor and expert interviews	Good
2024 sales	Number of heat pumps sold per year in the Québec residential market	150,000	Calculation based on number of heat pumps incented by the program divided by the proportion of heat pumps incented by Hydro-Québec (from general population survey), validated by distributor and expert interviews	Good
Percent of sales that are new installations of heat pumps	Percent of heat pumps sold per year	70%	Participant survey, validated with the similar percentage obtained from general population survey	Good
Reduction in sales in the absence of Hydro-Québec interventions – short term	Percentage	43%	First round of distributor interviews, validated and refined in second round of distributor interviews and expert interviews	Moderate
Reduction in sales in the absence of Hydro-Québec interventions – medium to long terms	Percentage	43%	Distributor and expert interviews	Weak

Using these parameters, two scenarios were developed, notably (1) a baseline with the program status quo and (2) the natural market baseline if current program interventions were removed, as outlined in Figure 2 further below. The program status quo scenario assumes that the number of new heat pump installations per year will persist (i.e. 150,000 sold per year * 70% new installations = 105,000 per year).

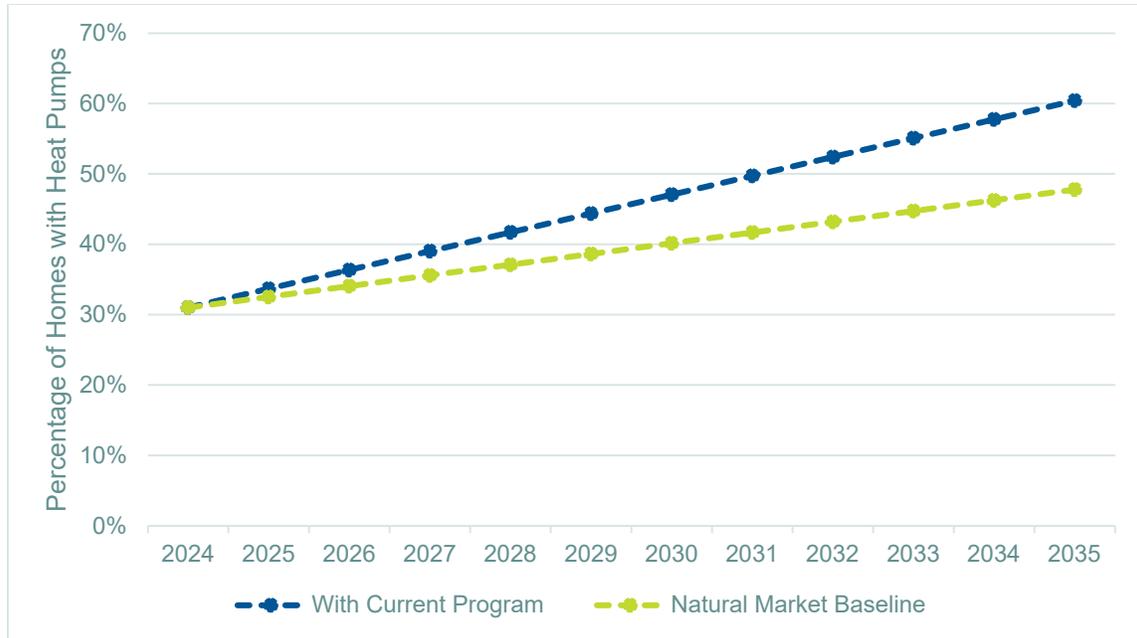


Figure 2. Number of Homes with Heat Pumps with and Without Current Hydro-Québec Program

The natural market baseline depicted in Figure 2 indicates a 43% reduction in the total new installations per year, which is the estimated reduction in near-term sales extrapolated over the baseline period in the absence of Hydro-Québec interventions. The natural market baseline for the first years after the hypothetical cessation of the Hydro-Québec program can be estimated with relatively good confidence; however, the long-term trend could not be reliably estimated since there was a lack of consensus among distributors and experts on what would occur long term in the market. However, both groups believed that there would be a much higher proportion of standard heat pumps in the market and that market growth would gradually continue after a few years but at a much slower rate than at first.

While predicting a natural market baseline always brings uncertainty, Econoler found it to be more uncertain under this assignment given the Québec heat pump market is already advanced. Econoler recommends carefully monitoring the market for signs that it is time to update the natural market baseline, notably signs that external factors outside of Hydro-Québec’s purview are having an impact on the market. Future refinements or updates to the long-term natural market baseline should consider the following:

- With distributors and experts, examining the impacts of several factors external to the program on heat pump penetration, such as rising electricity rates, falling heat pump prices, the availability of more efficient models capable of operating efficiently at very low temperatures, or changes in the income levels of households that do not yet have a heat pump.
- Analyzing the natural market baseline by market segment, notably for the renter market that has specific market barriers that have been difficult to overcome through the current LogisVert program.

Conclusion

The case study outlined herein provides a model for program administrators to take steps in transitioning their heat pump resource acquisition programs toward market transformation programs. Furthermore, the case study explains how many of the elements required to shift to a market transformation framework can be established incrementally in the context of market and process evaluations of resource acquisition programs. Through this assignment, Econoler identified market barriers to heat pumps in Québec and activities to address those barriers and their expected outcomes, as documented in a logic model. Econoler highlighted activities currently part of Hydro-Québec's current resource acquisition activities as well as additional activities needed to transform the market. Market progress indicators were identified, and Econoler collected data for a portion of these indicators through the market and process evaluation activities.

The study served to develop a natural market baseline that Hydro-Québec could use to estimate energy savings generated from market transformation activities. The market transformation potential for Hydro-Québec is to increase the penetration of heat pumps in both replacement scenarios as well as new construction and to ensure that market progress persists if Hydro-Québec eventually lowers or removes incentives. Econoler established a robust natural market baseline for the early years. These combined elements provide a strong starting point for Hydro-Québec to refine a market transformation program design, establish a robust long-term natural market baseline, and engage with stakeholders and the regulator to build support for a market transformation program.

Based on the results of this research, Hydro-Québec is planning to move forward with a market transformation program for residential heat pumps for both space heating and cooling needs in the province. Hydro-Québec is developing a market transformation implementation plan using the recommendations and logic model developed as part of the case study, and some preliminary actions targeted at market actors are already underway.

Lessons Learned

Econoler identified three lessons learned as part of this study.

The lack of heat pump sales data is a challenge that requires an iterative approach. The Econoler team attempted multiple data-collection approaches and found that the most reliable was using the number of units sold through the program divided by the percentage of general population customers who received an incentive for their heat pump, all validated by market actors and experts.

Incorporating a market transformation framework study into broader market and process evaluations brings efficiencies, but it should not be viewed as side of desk activity. Many of the primary data-collection activities can be used across both evaluation and market transformation studies; however, attention must be paid to prioritizing key research objectives in scoping all of these to keep data collection at a reasonable length and in the sequencing of various evaluation activities. In the case study, process and market evaluation results were considered paramount, which meant some trade-offs were required in planning the data collection schedule and developing the data-collection instruments.

Establishing a natural market baseline in an already advanced market is challenging. The more the program is entrenched in the market, the more difficult it is to predict a natural market baseline. Experts disagreed about the natural market baseline in the long term as it was very difficult to hypothesize on what would occur in the absence of the in-market program. There is no silver bullet to this challenge. If historical data exist, they should be leveraged. Additionally, expert interviews should be used to dive into the factors external of the program that could influence the market to monitor these aspects over time.

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