Building
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des bâtiments

Pace of Progress

Achieving the Necessary Momentum to Meet Canada's 2050 Climate Goals in the Residential Building Sector

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About the Building Decarbonization Alliance:

An initiative of the Transition Accelerator, the **Building Decarbonization Alliance (BDA)** is a non-partisan cross-sectoral coalition that works to inspire and inform industry and government leadership, accelerate market transformation, and get the building sector on track to meet Canada's emission reduction goals. The BDA convenes conversations, conducts original analysis, and identifies structural barriers to building decarbonization—we then work with our partners to overcome them. Our vision is to create a future where electrified buildings are part of an affordable and resilient energy systems that contributes to a **prosperous, sustainable and decarbonized Canada**. One of the BDA's primary market transformation strategies is to enhance the analytical capacity of the building sector.

About The Transition Accelerator

The Transition Accelerator is a pan-Canadian organization that exists to support Canada's transition to a net-zero future while solving societal challenges. Using our four-step methodology, The Accelerator works with innovative groups to create visions of a socially and economically desirable net-zero future. We then work to build out credible, capable and compelling transition pathways to make these visions a reality. The Accelerator's role is that of an enabler, facilitator, and force multiplier that forms coalitions to take steps down these pathways and get change moving on the ground.

Acknowledgement

In June 2023, Rewiring America released their inaugural Pace of Progress report, mapping the current state of the United States' market against what needs to happen to meet their emissions targets by 2050. Their report focused on the adoption of several transformative technologies, namely: Heat pumps, heat pump water heaters, induction stoves, electric vehicles, and rooftop solar systems.

With the support of Rewiring America, the Building Decarbonization Alliance adapted this report to the Canadian context. We thank Rewiring America for their collaboration and review of this report.

Disclaimer: This report does not necessarily reflect the views of the reviewers. Any errors remain the sole responsibility of the authors.

Introduction

With 18% of Canada's GHG emissions flowing from the building sector, and more than 77% of building emissions coming from combusting fossil fuels for space and water heating,[1] a switch to non-emitting heating sources is needed to achieve the ambitious target of zero national greenhouse gas emissions by 2050. [2] As noted in The Transition Accelerator's Pathways to Net Zero report,[3] the replacement of fossil-fuel fired furnaces and boilers with electric heating equipment (electrification) is the most compelling pathway to widespread building decarbonization.

Two technologies that emerge as powerful tools to significantly reduce emissions in homes:[4]

- **Heat Pumps:** Space heating and cooling equipment that moves heat from one location to another using a refrigeration cycle. They are highly efficient, producing more heat energy than the electricity they consume, and can work either using outside air (as an air source heat pump), or the earth or groundwater (as a ground source heat pump).
- **Heat Pump Water Heaters:** Water heating equipment that efficiently moves heat from the surrounding air to create hot water.

> *Although Canadians' adoption of heat pumps is already increasing, Canadian households are not on track to electrify their space heating by 2100, let alone by 2050.*

Paired with a clean electricity grid, these technologies offer the most viable alternative to decarbonizing traditional heating and cooling methods. In the residential sector, more than six million or 40% of homes use electric heating, and more than 850,000 of those homes use heat pumps.[5] Although Canadians' adoption of heat pumps is already increasing, Canadian households are not on track to electrify their space heating by 2100, let alone by 2050.[6] In this context, this report:

- Serves as **a tool to understand the current state of adoption of heat pump technologies in the residential sector, and the rates of adoption that are needed to reach Canada's 2050 goals;**
- **Employs the non-linear S-curve model** to underline the disparity between historical rates of change and the accelerated rates needed for effective climate action, instead of relying on linear projections from current deployment levels to forecast sales and stocks projections; and
- Lays out that **the first years are critical to determining the pace for adoption for the next two decades** and underscores the urgency to harness the potential of heat pumps and heat pump water heaters to drive rapid, sustainable change.

The projections in this report do not reflect the impact of the current policy environment for building decarbonization. Instead, they show the rate of progress necessary to address the climate crisis. This assessment provides policy makers and advocates with a simple but powerful depiction of the rate of adoption required to achieve our climate targets, without prescribing specific policies to increase this adoption.

[1] Poirier, M. and Cameron, C. (2023). The Case for Building Electrification in Canada. The Transition Accelerator.

[2] Net-Zero Advisory Body (2023). 2022 Annual Report.

[3] Meadowcroft, J. and contributors (2021). Pathways to net zero: A decision support tool.

[4] This includes single detached and single attached homes, as well as apartments and mobile homes.

[5] Natural Resources Canada (2019). Comprehensive Energy Use Database, Residential Sector, Canada, Table 27: Heating System Stock by Building Type and Heating System Type.

[6] Haley, B., & Torrie, R. (2021). "Canada's Climate Retrofit Mission" Efficiency Canada, Carleton University.

Bridging the Gap: Accelerating Heat Pump Implementation in the US

While Canada has yet to achieve significant progress in heat pump adoption, the United States also faces a pronounced delay in adopting this technology. Noteworthy, the recent Nine States Pledge Joint Action underscores a pivotal initiative to accelerate the transition to clean buildings, setting a target for highly efficient heat pumps to constitute 65% of residential heating, cooling, and water heating equipment sales by 2030 across the nine participating states. The agreement emphasizes collaboration with key stakeholders, including heat pump manufacturers and heating, ventilation and air-conditioning (HVAC) installers, thus paving the way for widespread adoption to become a reality. This collaborative effort highlights the urgent need for concerted action to advance sustainable energy practices across North America.

Methodology

The S-curve adoption rates illustrated in this report for heat pumps and heat pump water heaters indicate that we are only at the beginning of the adoption of these technologies in the residential sector.

Technology adoption and diffusion does not usually progress along a straight and linear path. Instead, it typically follows an S-curve, with slower initial adoption rates, a period of exponential growth, and another slow tail as the last late-adopters come on board. The exact shape of the curve will vary based on a range of factors, such as consumer behavior and regulatory frameworks, but many innovative technologies have followed such S-curve models; the telephone, electricity, refrigerators, and cell phones are but a few examples of this pattern of growth (see Figure 1 for more examples).

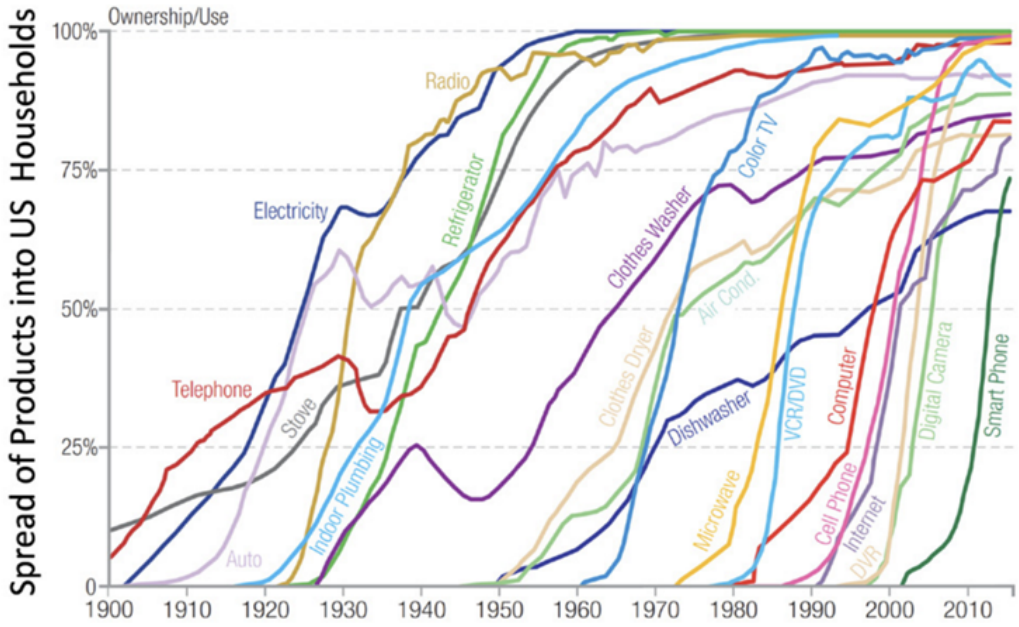

Figure 1: Historically, the adoption of new technologies that transformed their markets have followed an S-curve. [7]

There will also be an S-shaped adoption pattern for the technologies that will help decarbonize our homes. The S-curve adoption rates illustrated in this report for heat pumps and heat pump water heaters indicate that we are only at the beginning of the adoption of these technologies in the residential sector.

[7] Cox and Alm (2016). Onward and Upward. O'Neil Centre for Global Markets & Freedom, SMU

While there will be slow progress during the early years, signifying their gradual adoption, this will be followed by rapid increase in uptake, resulting in widespread mass-market adoption, and eventually reaching a saturation point as the market matures. There are three key curves that are used throughout this report:

- **Sales Curve:** The annual sales, as a percentage of all space and water heating equipment, required to achieve the climate goal.
- **Stock Curve:** The cumulative number of installed machines of each type, based on the sales curve.
- **Target Curve:** The deviation of the projected sales from the business-as-usual sales projections.

Most space heating equipment has a lifespan of approximately 15 years. As our objective is to demonstrate what it would take to enable a complete transition to heat pumps by 2050, this lifespan requires them to total 100 percent of all sales by 2035. [8] For equipment such as water heaters, with a relatively shorter lifespan of around 10 years, heat pump water heaters will have to cover 100 percent of sales by 2040.

We rely on public data sources to estimate current and projected adoption (i.e., the Comprehensive Energy Use Database [9] and the 2019 Survey of Household Energy Use [10]) from Natural Resources Canada (NRCan), as well as shipment data from the Heating, Refrigeration and Air Conditioning Institute of Canada.[11] The results are presented exclusively for the residential sector, at both the national and provincial levels.

In subsequent updates of this report, we intend to enhance the accuracy of the results by closely collaborating with various stakeholders and sources capable of supplying additional inputs, thereby refining the precision and depth of our analyses across various versions of the report.

[8] This report illustrates the required sales for a complete transition to electrified heating. The authors acknowledge that the energy transition may allow for some limited alternative solutions where regional conditions support them.

[9] Natural Resources Canada (2023). Comprehensive Energy Use Database.

[10] Natural Resources Canada (2023). 2019 Survey of Household Energy Use.

[11] Heating, Refrigeration and Air Conditioning Institute of Canada (2023). Residential central heat pumps annual sales from 2018–2022.

Canada-Wide Adoption

To be on track to reaching zero emissions by 2050, an additional 229,000 heat pumps and 82,600 heat pump water heaters must be installed between 2024 and 2026, compared to existing sales projections. Failing to reach these targets will require substantially greater efforts in the future to accelerate the transition. The sales and stock curves below illustrate the pace of adoption needed to reach the target of 100 percent of homes in Canada using heat pump technologies for space and water heating by 2050.

Space Heating

To determine the market acceleration necessary to meet the 2050 goal, we compare our modelling to existing sales trends. Most space heating systems have a lifespan of approximately 15 years, so this yields a sales curve comprising 100 percent of heat pumps sales by 2035 (see Figure 2). This means a change from having heat pumps in an estimated 1.05M homes in 2024 to 21.3M homes in 2050 (see Figure 3). [12]

> *The transition must accelerate to improve the chances of successfully meeting net-zero emissions by 2050.*

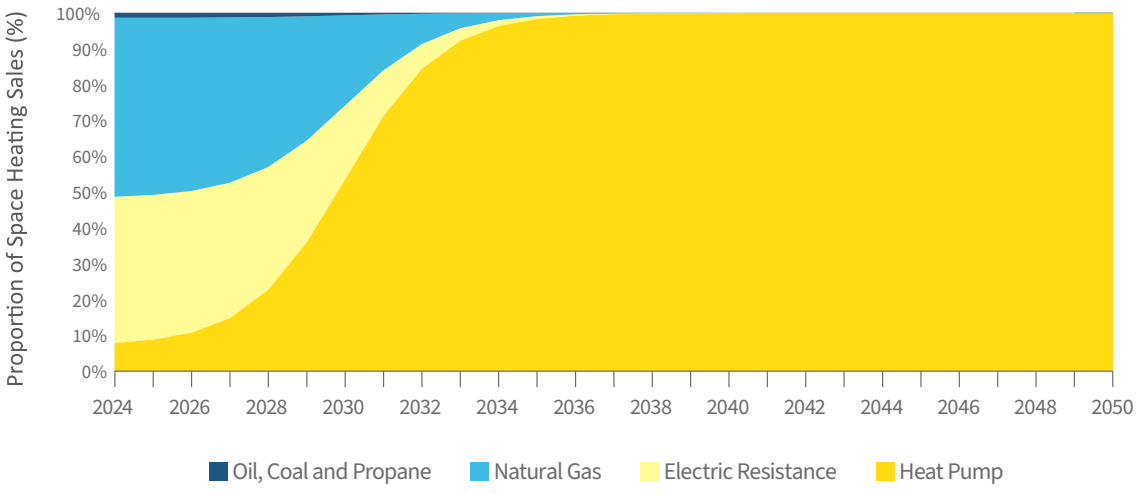

Figure 2: A significant market acceleration is necessary over the next decade to reach 100 percent of homes with heat pumps by 2050.

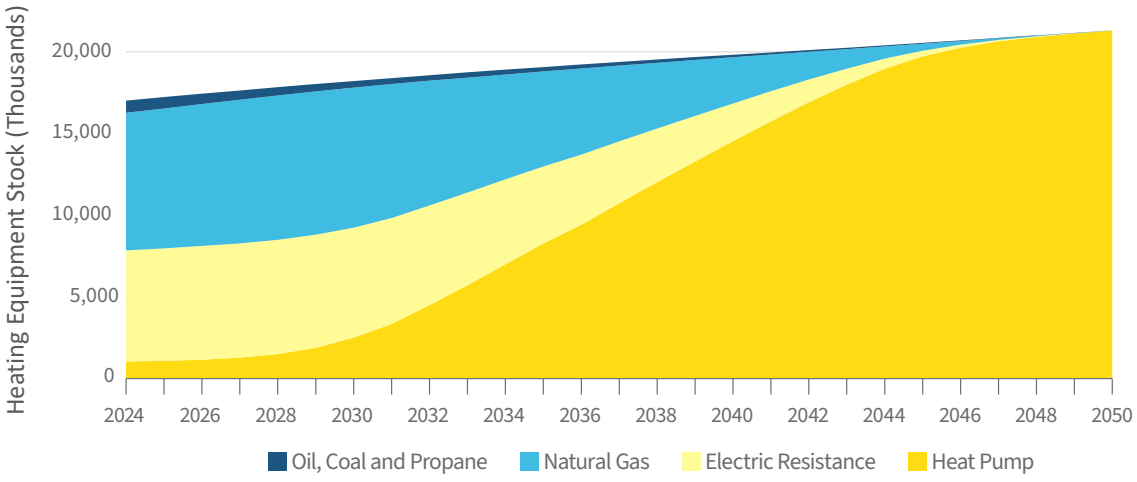

Figure 3: Reaching 100% adoption of heat pumps in Canada's residential sector will require a significant acceleration of uptake.

[12] Based on current equipment proportions extracted from the Comprehensive Energy Use Database (NRCan), we calculate the sales curve using a sales target of 100%, an inflection point set in 2030 and a rate of adoption (slope) of 0.8.

In 2024, only six percent of homes have heat pumps, reflecting a modest market share and a limited market penetration. By comparing the modelling of market acceleration to existing sales trends, we can weigh the required efforts and pace of progress to achieve the target of 100 percent adoption by 2050. These calculations outline the required number of units sold each year to meet Canada's climate targets. This comparison allows for strategy refinement, supply chain planning, and building towards a sustainable future with widespread adoption of heat pumps.

While sales are expected to increase in the coming years, current estimates project heat pump sales to reach 41,000 units by 2026, far short of the 137,000 needed to keep on track for our 2050 goals. In fact, to meet our 2050 target, **heat pumps sales will need to be three times higher than current projections by 2026** (see Figure 4). These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully reaching net-zero emissions by 2050.

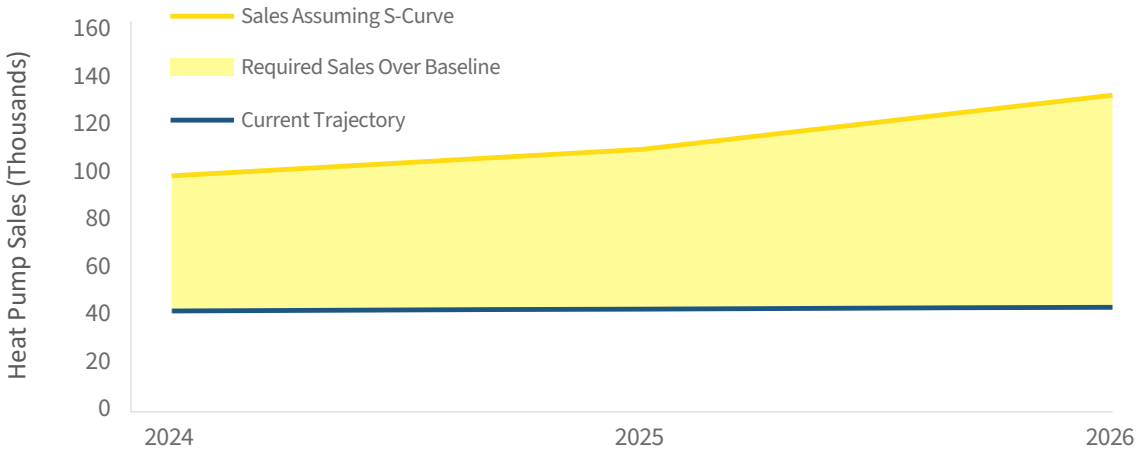

Figure 4: Cumulative heat pump sales will need to increase by 229,000 between 2024 and 2026 to stay on track to meet the 2050 emissions targets.

Water Heating

To determine the market acceleration necessary to meet the 2050 goals, we again compare our modelling to existing sales trends. Most water heating systems have a lifespan of approximately 10 years, so this yields a sales curve comprising 100 percent of heat pump water heaters sales by 2040 (see Figure 5). This means going from having heat pump water heaters in 68,000 Canadian homes in 2024 to 21.3M homes in 2050 (see Figure 6).

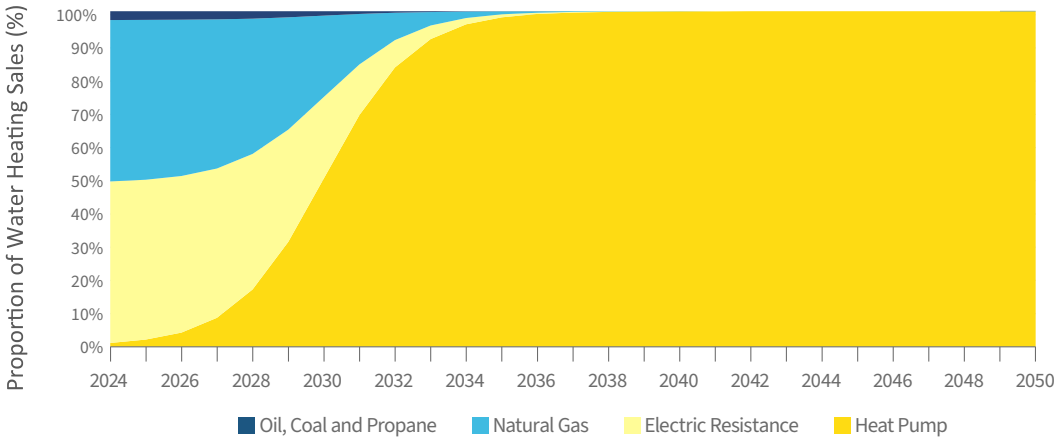

Figure 5: A significant market acceleration is necessary over the next decade to reach 100 percent of homes with heat pump water heaters by 2050.

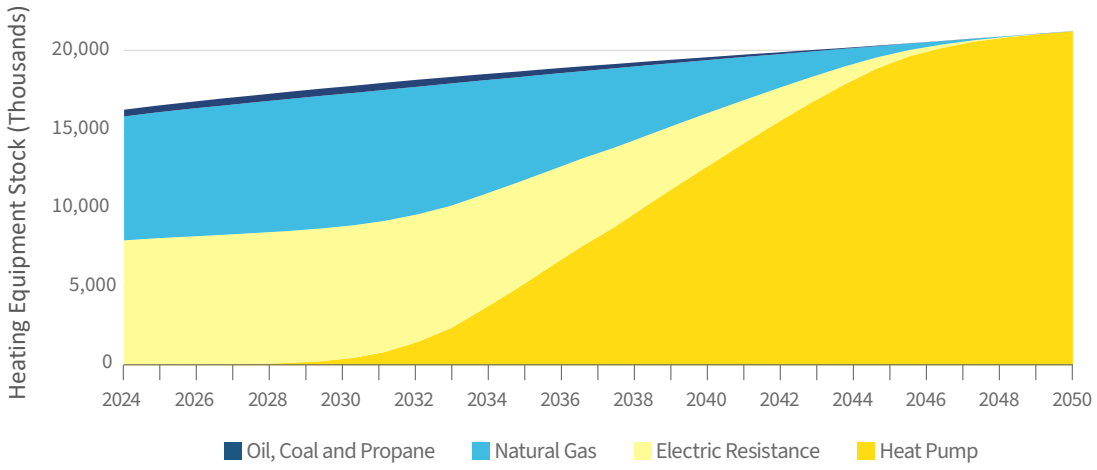

Figure 6: Reaching 100% adoption of heat pump hot water heaters in Canada's residential sector will require a significant acceleration of uptake.

In 2024, we estimate only 0.4% of homes in Canada have heat pump water heaters, signaling a small market share. By comparing the modelling of market acceleration to existing sales trends, we can weigh the required efforts and pace of progress to achieve the target of 100 percent adoption by 2050. These calculations outline the required number of units to be sold each year to meet Canada's climate targets. This comparison allows for strategy refinement, supply chain planning, and building towards a sustainable future with widespread adoption of heat pump water heaters.

While sales are expected to increase in the coming years, current estimates project heat pump water heaters sales to reach 3,700 by 2026, far short of the 53,200 needed to keep on track for our 2050 goals. In fact, to meet the Canada's 2050 emissions target, **heat pump water heaters sales will have to increase roughly 14 times faster than the anticipated sales trajectory between now and 2026** (see Figure 7).

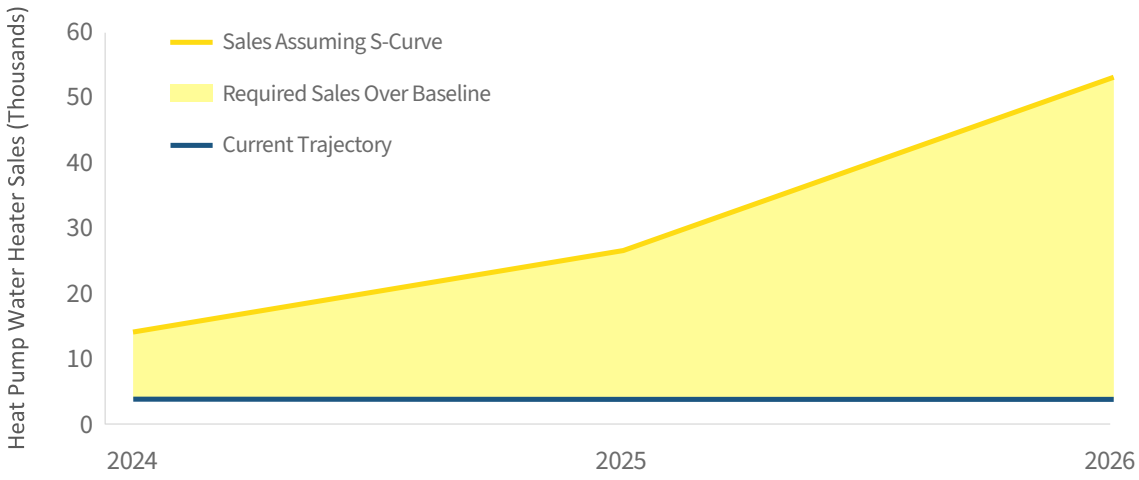

Figure 7: Cumulative heat pump water heater sales will need to increase by 82,600 between 2024–2026 to stay on track to meet the 2050 emissions targets.

Alberta

An additional 44,000 heat pumps and 43,300 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Alberta on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 3.1% of homes in Alberta have heat pumps. To meet the 2050 target, unit sales need to increase six times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 8).

These sales result in 100% adoption of heat pumps by 2050. This means going from units in 59,000 homes in Alberta in 2024 to 3.0M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 44,000 additional heat pumps must be sold cumulatively beyond the current path** (see Figure 9).

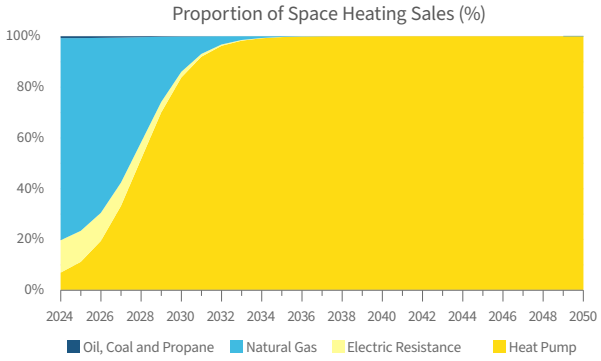

Figure 8: A significant market acceleration is necessary

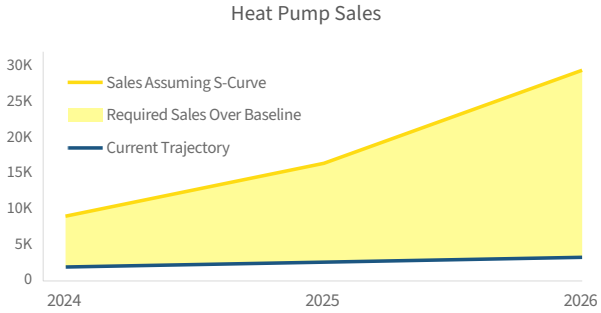

Figure 9: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Alberta have heat pump water heaters. To meet the 2050 target, unit sales need to increase 49 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 10).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 16,000 homes in Alberta in 2024 to 3.0M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 43,300 additional heat pump water heaters must be sold cumulatively beyond the current path** (see Figure 11).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

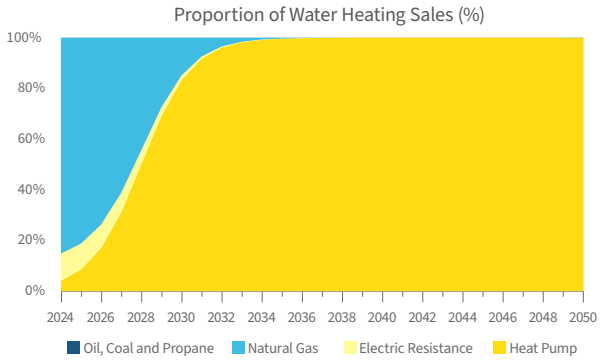

Figure 10: A substantial market acceleration is necessary.

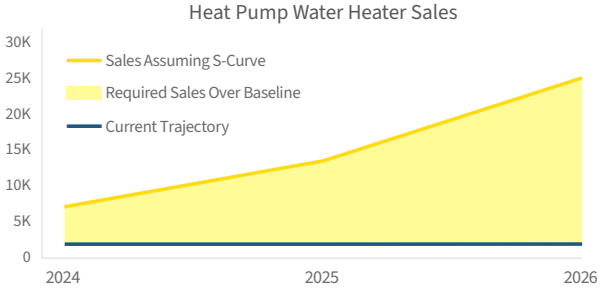

Figure 11: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

British Columbia

An additional 29,300 heat pumps and 51,200 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set British Columbia on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 4.6% of homes in British Columbia have heat pumps. To meet the 2050 target, unit sales need to increase two times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 12). These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 107,000 homes in British Columbia in 2024 to 2.9M homes in 2050.

Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 29,300 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 13).

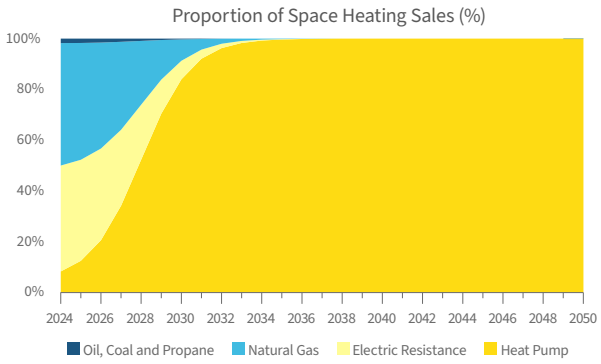

Figure 12: A significant market acceleration is necessary

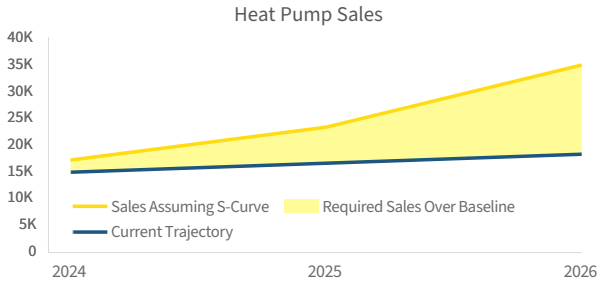

Figure 13: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in British Columbia have heat pump water heaters. To meet the 2050 target, unit sales need to increase 56 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 14).These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 20,000 homes in BC in 2024 to 2.9M homes in 2050.

Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 51,200 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 15).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

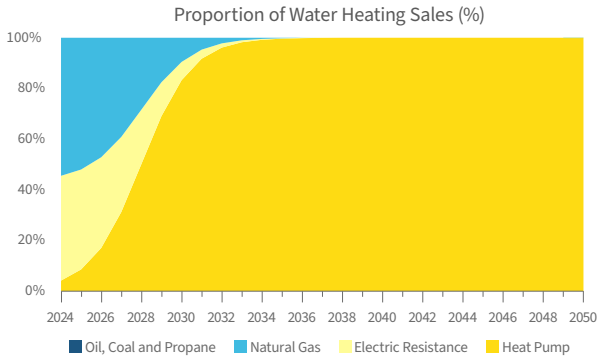

Figure 14: A substantial market acceleration is necessary.

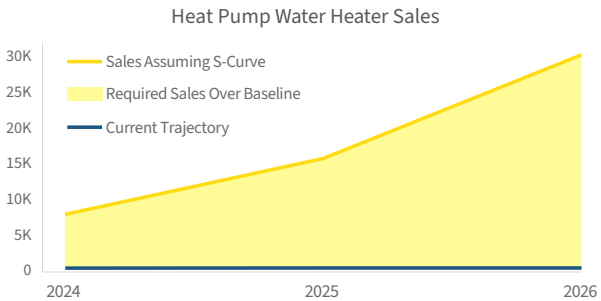

Figure 15: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Manitoba

An additional 16,600 heat pumps and 12,600 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Manitoba on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 4.5% of homes in Manitoba have heat pumps. To meet the 2050 target, unit sales need to increase 13 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 16).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 26,000 homes in Manitoba in 2024 to 0.7M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 16,600 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 17).

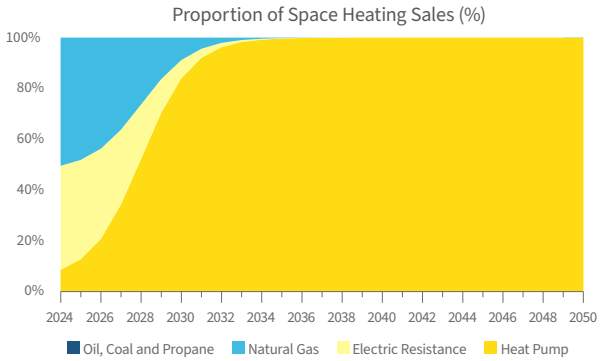

Figure 16: A significant market acceleration is necessary.

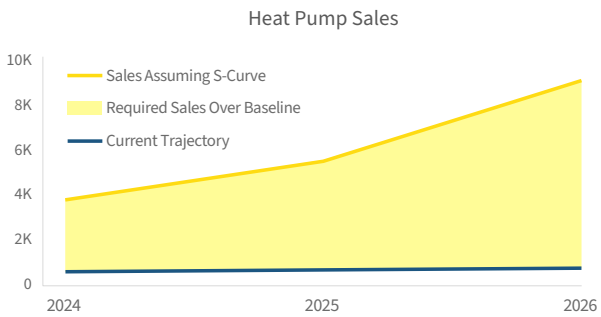

Figure 17: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Manitoba have heat pump water heaters. To meet the 2050 target, unit sales need to increase 75 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 18). These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 4,600 homes in Manitoba in 2024 to 0.7M homes in 2050.

Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 12,600 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 19).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

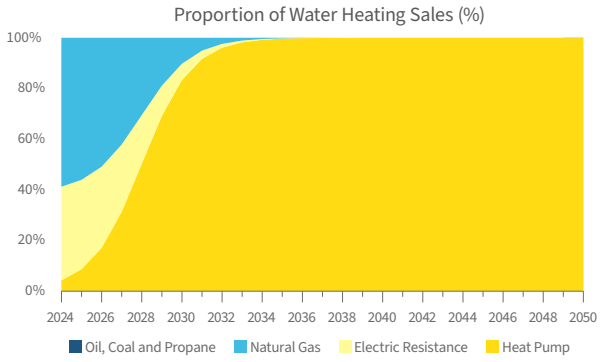

Figure 18: A substantial market acceleration is necessary.

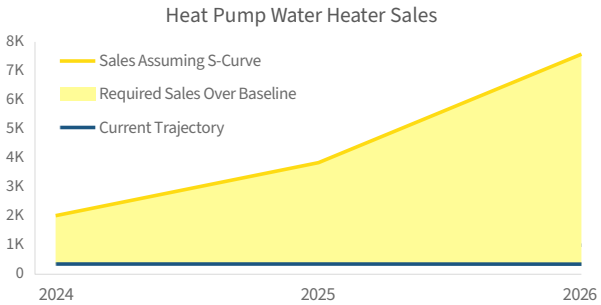

Figure 19: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

New Brunswick

An additional 7,400 heat pumps and 7,800 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set New Brunswick on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 5.2% of homes in New Brunswick have heat pumps. To meet the 2050 target, unit sales need to increase four times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 20).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 19,000 homes in New Brunswick in 2024 to 0.4M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 7,400 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 21).

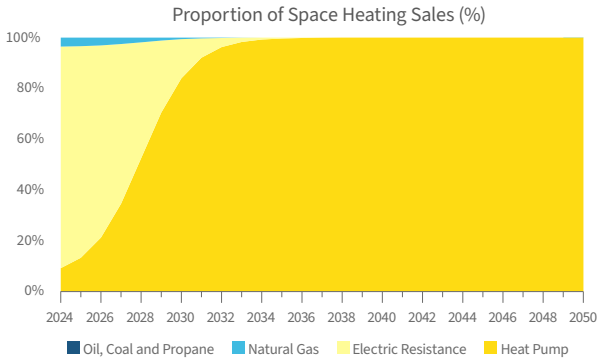

Figure 20: A significant market acceleration is necessary.

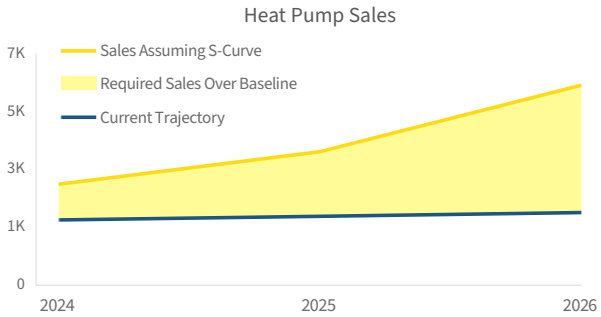

Figure 21: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in New Brunswick have heat pump water heaters. To meet the 2050 target, unit sales need to increase 53 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 22). These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 3,000 homes in New Brunswick in 2024 to 0.4M homes in 2050.

Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 7,800 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 23).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

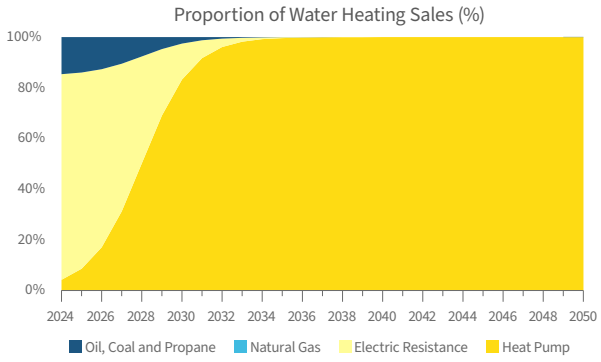

Figure 22: A substantial market acceleration is necessary.

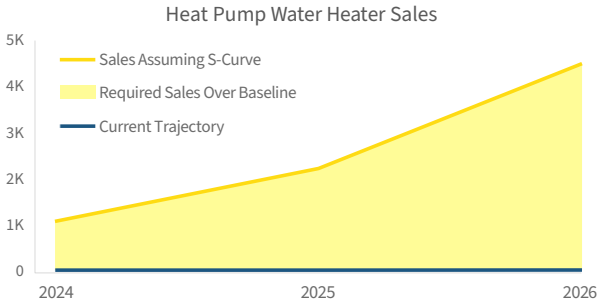

Figure 23: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Newfoundland and Labrador

An additional 4,800 heat pumps and 5,000 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Newfoundland and Labrador on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 2.0% of homes in Newfoundland and Labrador have heat pumps. To meet the 2050 target, unit sales need to increase eight times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 24).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 5,000 homes in Newfoundland and Labrador in 2024 to 0.2M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 4,800 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 25).

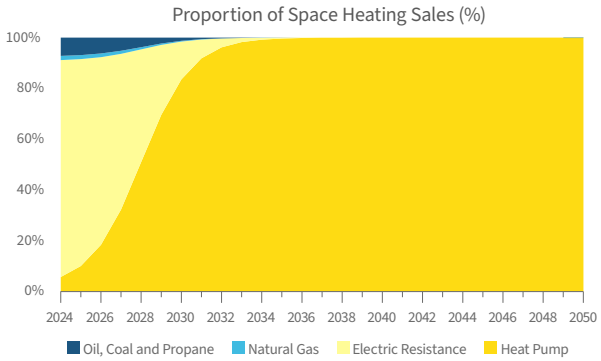

Figure 24: A significant market acceleration is necessary.

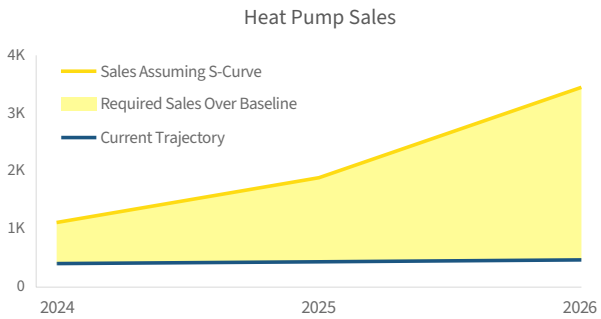

Figure 25: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Newfoundland and Labrador have heat pump water heaters. To meet the 2050 target, unit sales need to increase 47 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 26).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 1,900 homes in Newfoundland and Labrador in 2024 to 0.2M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 5,000 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 27).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

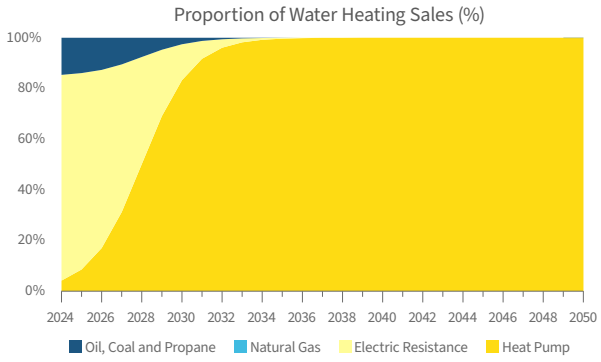

Figure 26: A substantial market acceleration is necessary.

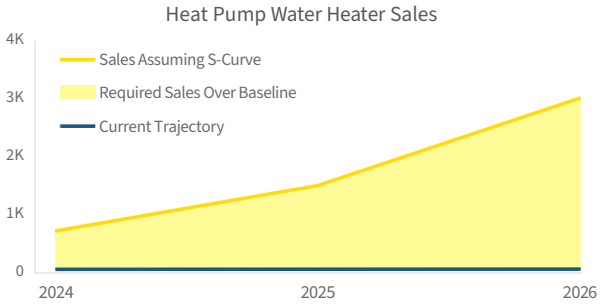

Figure 27: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Nova Scotia

An additional 9,700 heat pumps and 10,100 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Nova Scotia on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 6.4% of homes in Nova Scotia have heat pumps. To meet the 2050 target, unit sales need to increase three times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 28).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 31,000 homes in Nova Scotia in 2024 to 0.5M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 9,700 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 29).

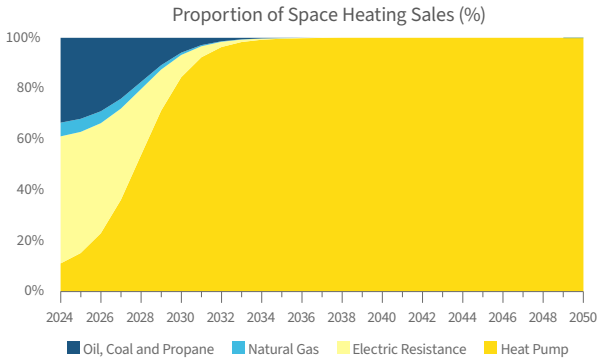

Figure 28: A significant market acceleration is necessary.

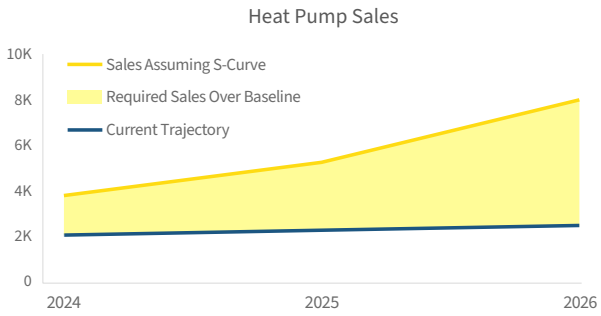

Figure 29: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Nova Scotia have heat pump water heaters. To meet the 2050 target, unit sales need to increase 55 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 30).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 3,900 homes in Nova Scotia in 2024 to 0.5M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 10,100 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 31).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

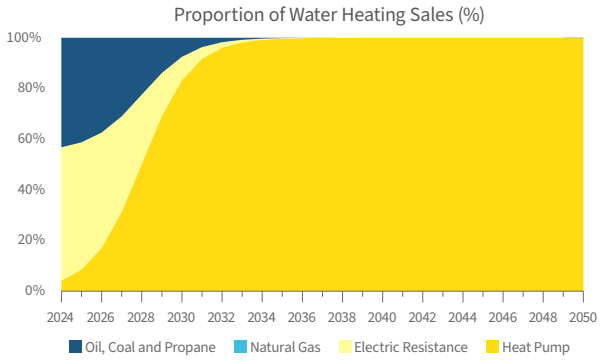

Figure 30: A substantial market acceleration is necessary.

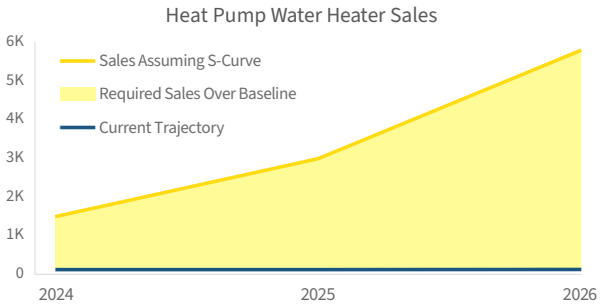

Figure 31: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Ontario

An additional 212,400 heat pumps and 136,200 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Ontario on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 7.9% of homes in Ontario have heat pumps. To meet the 2050 target, unit sales need to increase eight times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 32).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 498,000 homes in Ontario in 2024 to 8.2M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 212,400 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 33).

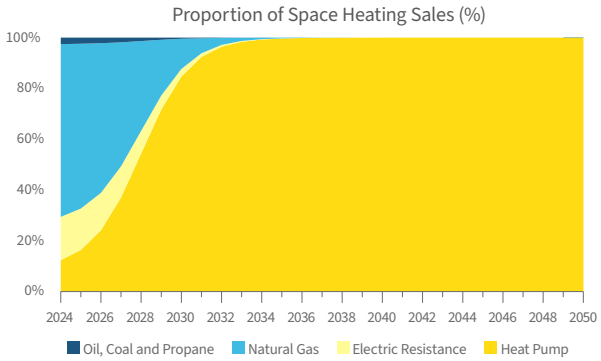

Figure 32: A significant market acceleration is necessary.

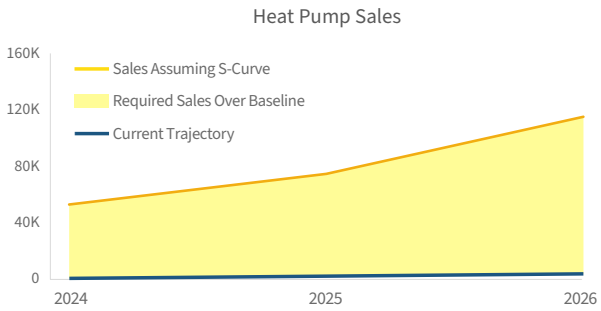

Figure 33: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Ontario have heat pump water heaters. To meet the 2050 target, unit sales need to increase 68 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 34).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 51,000 homes in Ontario in 2024 to 8.2M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 136,200 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 35).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

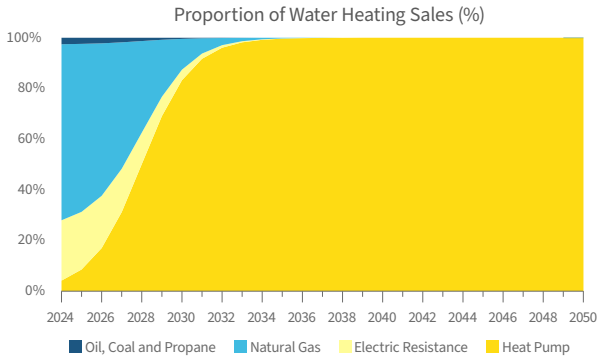

Figure 34: A substantial market acceleration is necessary.

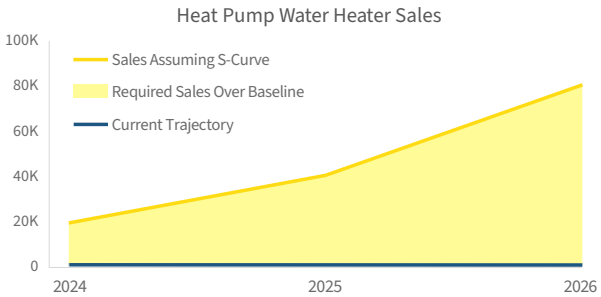

Figure 35: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Prince Edward Island

An additional 1,600 heat pumps and 2,000 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Prince Edward Island on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 3.5% of homes in Prince Edward Island have heat pumps. To meet the 2050 target, unit sales need to increase five times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 36).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 2,600 homes in Prince Edward Island in 2024 to 0.1M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 1,600 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 37).

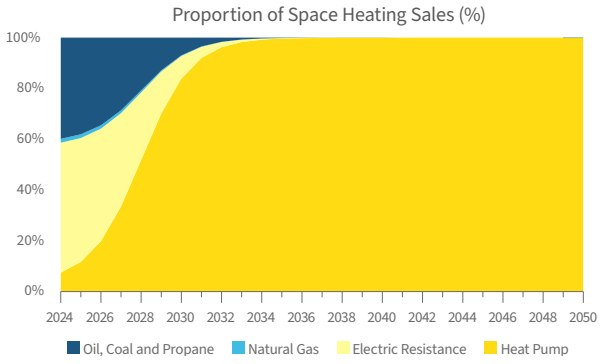

Figure 36: A significant market acceleration is necessary.

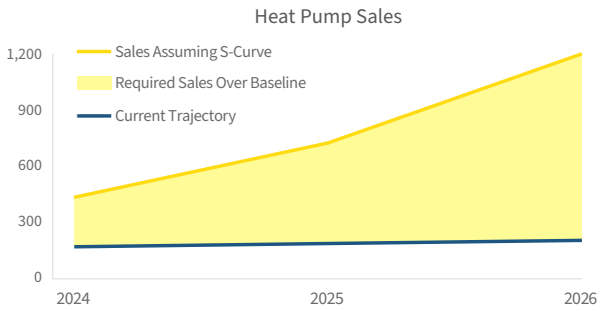

Figure 37: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.7% of homes in Prince Edward Island have heat pump water heaters. To meet the 2050 target, unit sales need to increase 36 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 38).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 700 homes in Prince Edward Island in 2024 to 0.1M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 2,000 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 39).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

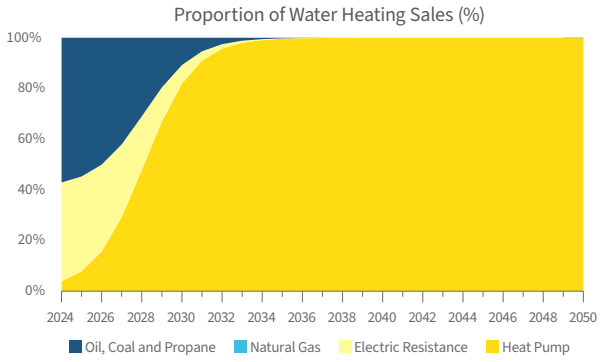

Figure 38: A substantial market acceleration is necessary.

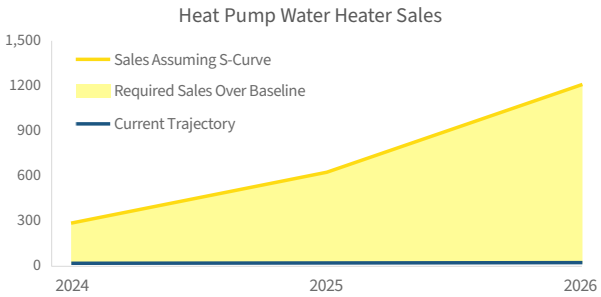

Figure 39: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Québec

An additional 116,800 heat pumps and 84,200 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Québec on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 8.6% of homes in Québec have heat pumps. To meet the 2050 target, unit sales need to increase five times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 40).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 353,000 homes in Québec in 2024 to 4.5M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 116,800 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 41).

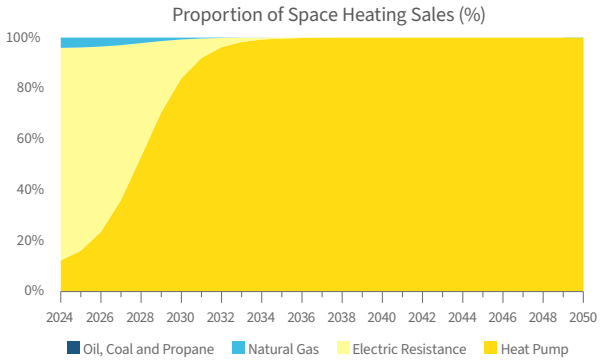

Figure 40: A significant market acceleration is necessary.

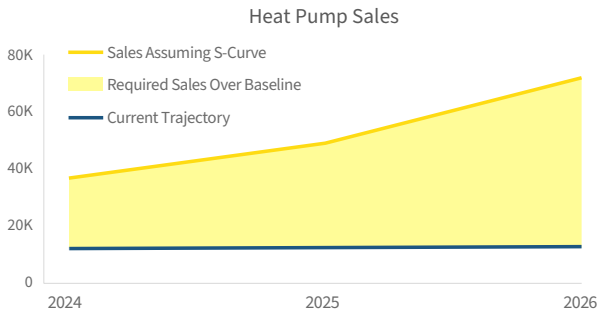

Figure 41: Heat pumps sales will need to increase to stay on track to meet the 2050 targets

Water Heating

As of 2024, we estimate only 0.8% of homes in Québec have heat pump water heaters. To meet the 2050 target, unit sales need to increase 50 times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 42).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 32,000 homes in Québec in 2024 to 4.5M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 84,200 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 43).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

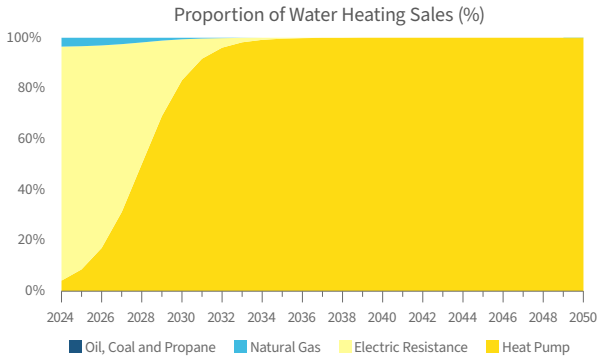

Figure 42: A substantial market acceleration is necessary.

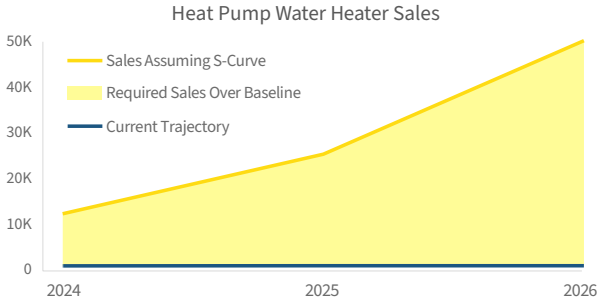

Figure 43: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Saskatchewan

An additional 13,300 heat pumps and 11,700 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set Saskatchewan on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 3.5% of homes in Saskatchewan have heat pumps. To meet the 2050 target, unit sales need to increase nine times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 44).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 18,000 homes in Saskatchewan in 2024 to 0.7M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 13,300 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 45).

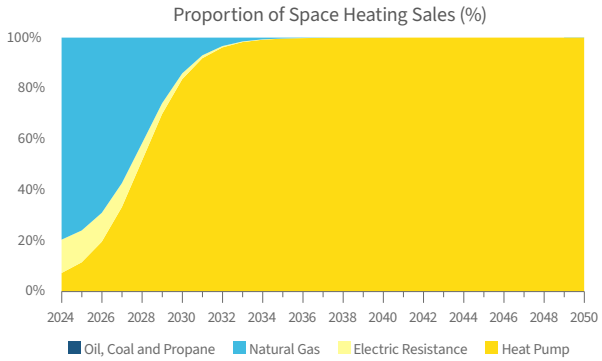

Figure 44: A significant market acceleration is necessary.

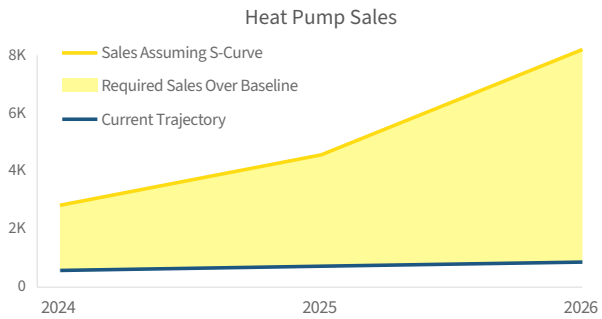

Figure 45: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.8% of homes in Saskatchewan have heat pump water heaters. To meet the 2050 target, unit sales need to increase more than hundred times faster than the anticipated trajectory by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 46).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having units in 4,100 homes in Saskatchewan in 2024 to 0.7M homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 11,700 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 47).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

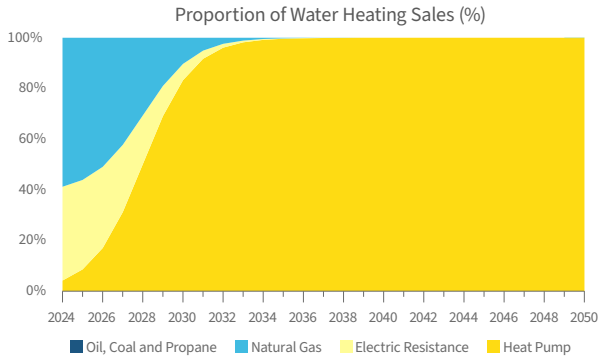

Figure 46: A substantial market acceleration is necessary.

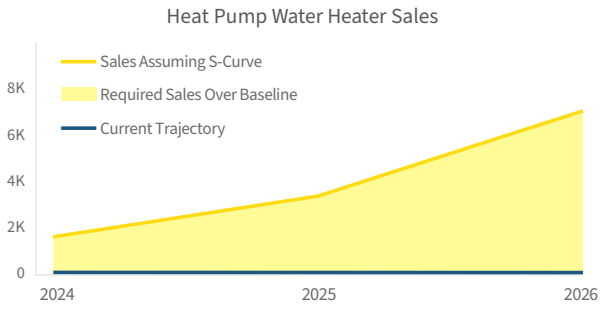

Figure 47: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.

Territories

An additional 1,100 heat pumps and 1,100 heat pump water heaters must be installed between 2024 and 2026 compared to existing sales projection, to set The Territories on track to zero emissions by 2050. Missing these targets will require more uptake and effort in the future to accelerate the transition.

Space Heating

As of 2024, we estimate only 0.4% of homes in The Territories have heat pumps. To meet the 2050 target, unit sales need to increase much faster by 2026. This estimate relies on projected sales that set market saturation as 2035 (see Figure 48).

These sales result in 100% adoption of heat pumps by 2050. This means going from having unit in 200 homes in The Territories in 2024 to 46,000 homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 1,100 additional heat pumps must be sold** cumulatively beyond the current path (see Figure 79).

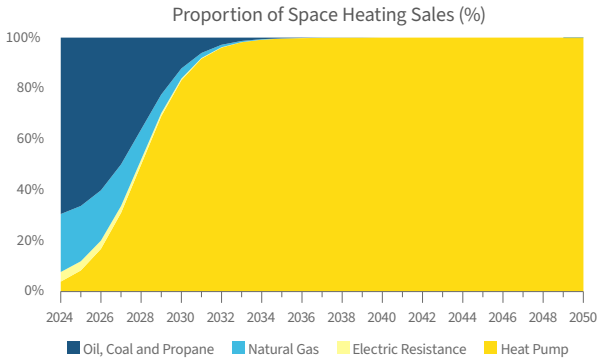

Figure 48: A significant market acceleration is necessary.

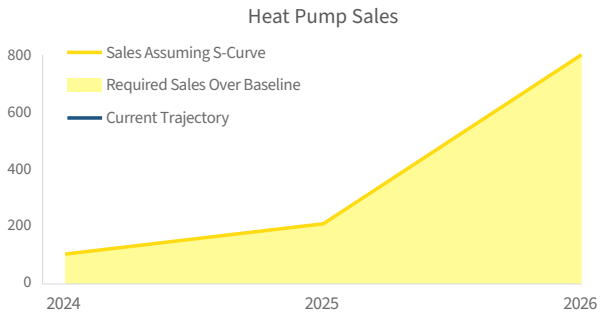

Figure 49: Heat pumps sales will need to increase to stay on track to meet the 2050 targets.

Water Heating

As of 2024, we estimate only 0.4% of homes in The Territories have heat pump water heaters. To meet the 2050 target, unit sales need to increase much faster by 2026. This estimate relies on projected sales that set market saturation as 2040 (see Figure 50).

These sales result in 100% adoption of heat pump water heaters by 2050. This means going from having 200 units in The Territories in 2024 to 46,000 homes in 2050. Comparing the modelling of market acceleration to existing sales trends, **over the next three years, 1,100 additional heat pump water heaters must be sold** cumulatively beyond the current path (see Figure 51).

These first years are critical as they will determine the pace for adoption for the next two decades. The transition must accelerate to improve the chances of successfully meeting net zero emissions by 2050.

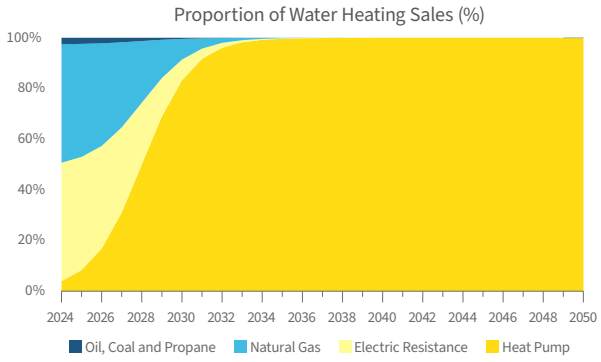

Figure 50: A substantial market acceleration is necessary.

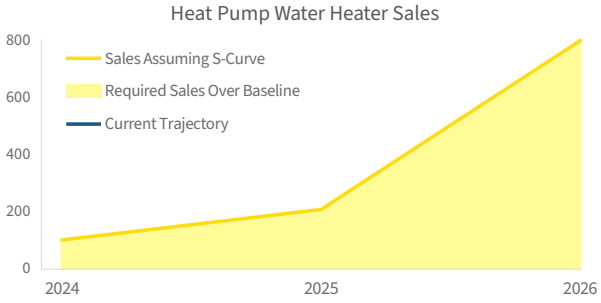

Figure 51: Heat pump water heater sales will need to increase to stay on track to meet the 2050 targets.