

# ENERGY MANAGEMENT BLUEPRINT

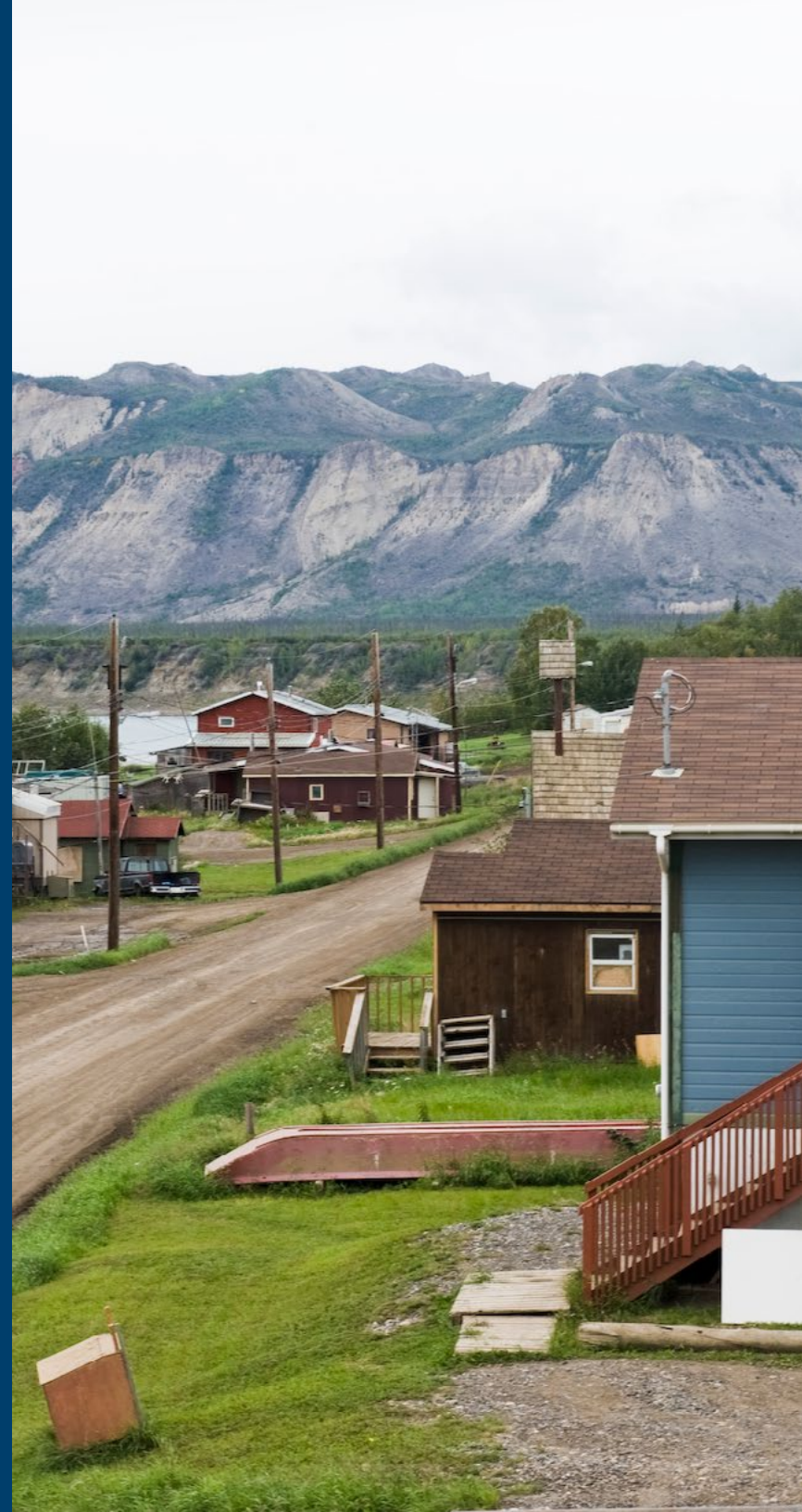
2023 - 2026

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# INTRODUCTION

In spring of 2022, Housing NWT initiated a renewed focus on achieving a more sustainable future for housing delivery in the NWT that is less dependent on the use of fossil fuels. To achieve this, two documents were developed: The **2030 Energy Management Strategy (Strategy)**, and its companion document the **Energy Blueprint (Blueprint)**. The **Strategy** sets out Housing NWT's broader Vision, Goals, and four Strategic Objectives, while this **Blueprint** details the planned actions and initiatives for the next three years to work towards the Strategy's 2030 targeted outcomes.



## Vision:

By 2030, Housing NWT will have a sustainable housing portfolio that is less dependent on fossil fuels and contributes to the economic, social, and environmental well-being of the Northwest Territories and its residents.



## Goals:

Reduce our energy consumption, increase the use of renewable energy for space heating, and reduce GHG emissions.



## Strategic Objectives:

1. Reduce the energy use intensity of our portfolio by 15% below 2016 levels;
2. Increase the use of renewable energy for space heating to 40% by 2030;
3. Increase capacity to manage and maintain energy solutions; and
4. Increase partnership opportunities in energy projects.

Although reducing GHG emissions is not a specific objective, achieving our Strategic Objectives will lead to a reduction in GHG emissions.

## Housing NWT's Housing Portfolio

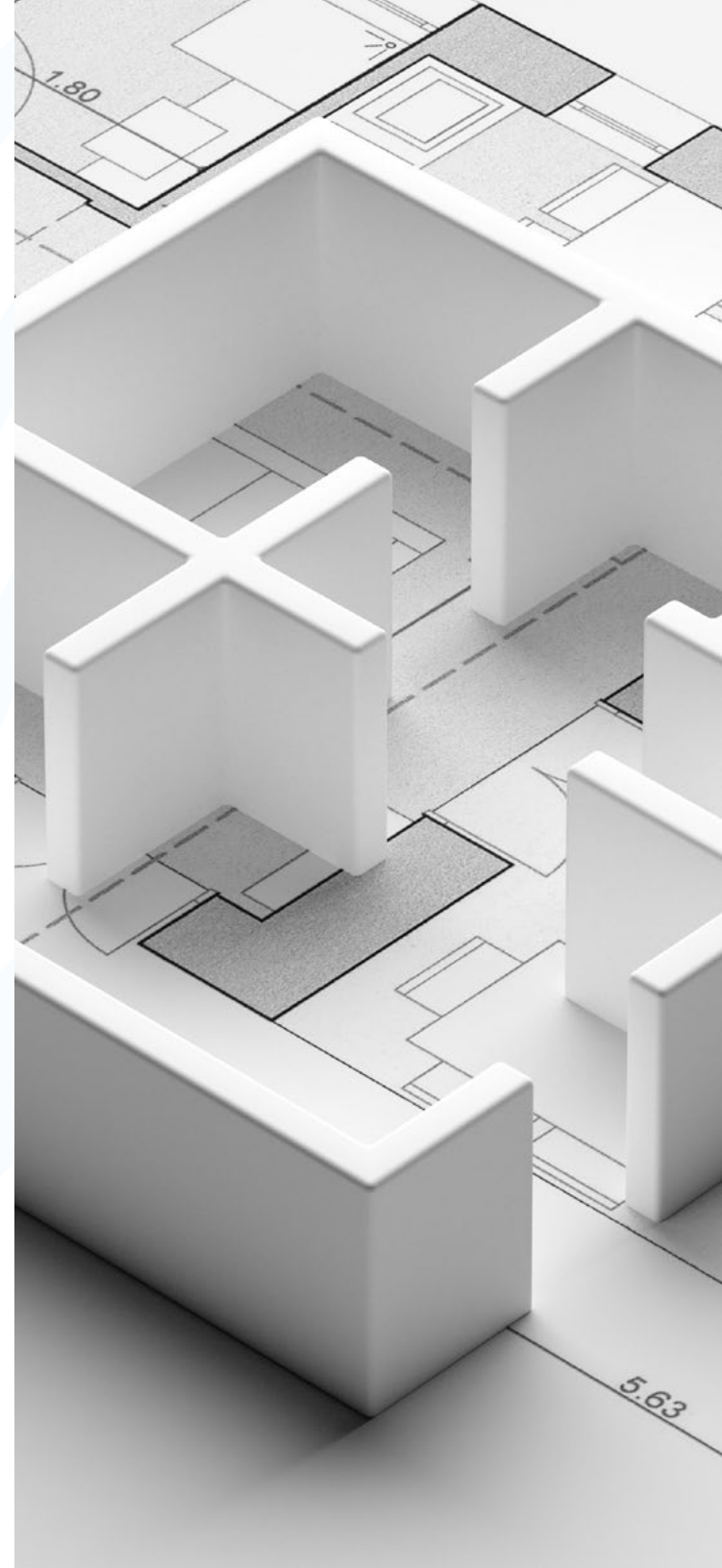
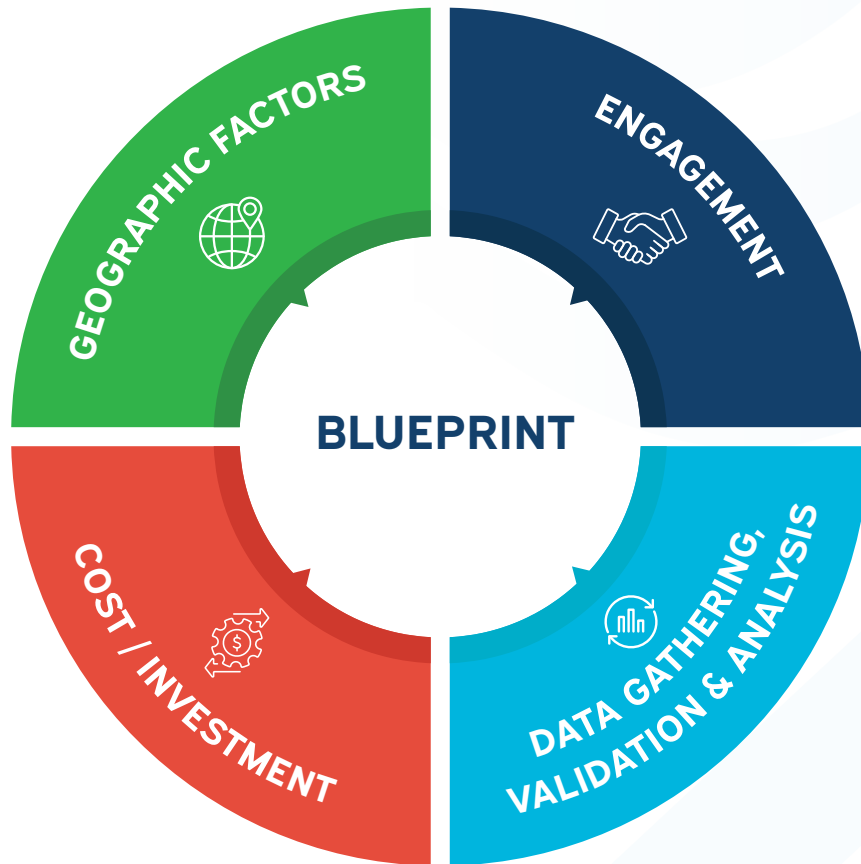
Under this Strategy, Housing NWT's housing portfolio includes residential units owned and operated by Housing NWT.



# HOW THE BLUEPRINT WAS DEVELOPED

Housing NWT's portfolio of over 2,700 housing units spans five regions and 32 communities in the NWT. The development of the Strategy and Blueprint was informed by geographic factors, an in-depth assessment of our entire housing portfolio's energy consumption and emissions, a series of engagements, and a technical assessment of potential actions and initiatives and their potential costs. This process allowed us to align with the energy priorities and technical capabilities of our communities, partners and stakeholders, while focusing our actions and initiatives to deliver the highest impact at the best value.

Figure 1: Blueprint Development



## OUR ADAPTIVE APPROACH

Recognizing that technology continues to improve, and costs for solutions change over time, we will maintain an adaptive approach to implementing our Strategic Objectives. Over the course of the Blueprint, we will continuously reassess and validate options and costs of solutions, adapting our approach to find the best and most economically viable solutions. Housing NWT will review and adjust our actions and initiatives annually as required. Every three years, we will issue an updated Blueprint, ensuring that it continues to align with our overarching Strategy.

## INVESTMENTS

The achievement of this Strategy's objectives will require sustained investment into the future, including lasting productive partnerships with Indigenous governments, community governments, and other housing partners. This current three-year Blueprint outlines a total estimated investment of approximately \$65M (See **Table 1**).

The proposed measures set out in this initial three-year Blueprint represent a significant commitment and substantial investment towards the reduction of our energy use intensity and increased use of renewable energy for space heating across our entire portfolio. However, its success depends on securing continued and increased funding from both internal and external sources.

*Table 1: Summary of Allocated Investment by Strategic Objectives (2023 to 2026)*

Strategic Objectives	Total Estimated Investments (1,000's)
1. Reduce the energy use intensity of our portfolio by 15% below 2016 levels by 2030.	\$50,350
2. Increase the use of renewable energy for space heating to 40% by 2030.	\$10,685
3. Increase capacity to manage and maintain energy solutions.	\$3,330
4. Increase partnership opportunities in energy projects.	\$900
<b>Total Targeted Annual Investment (*pending funding approvals)</b>	<b>\$65,265</b>

# STRATEGIC OBJECTIVES #1 & #2

## Strategic Objective #1: Reduce the energy use Intensity of our portfolio by 15% below 2016 levels by 2030

Housing NWT plans to invest in targeted energy efficiency improvement projects, along with replacing older and inefficient units. These measures aim to decrease Housing NWT's portfolio's energy use intensity to 350 kWh/m<sup>2</sup> by the end of 2030, indicating a 23% energy use reduction from 2016 levels. Additionally, to ensure the effective implementation of future projects and facilitate informed investment decisions, Housing NWT will prioritize the validation, design, and planning of additional energy efficiency improvement projects. This will include a highly efficient housing unit pilot project.

## Strategic Objective #2: Increase the use of renewable energy for space heating to 40% by 2030

To align with the broader GNWT's goal on space heating identified in the GNWT Energy Action Plan, the Strategy sets a target of increasing the share of space heating provided by renewable energy to 40% by 2030. While the focus of this Strategic Objective is to shift from fossil fuels to renewable energy (i.e., biomass, electrification, etc.), this goal will also reduce our annual GHG emissions by a targeted amount of about 5,500 tonnes. To reach this Strategic Objective by 2030, we have examined various renewable energy options across our portfolio, taking into consideration the unique challenges and opportunities for renewable energy in the North. From that analysis, specific actions and initiatives were selected for inclusion in this initial three-year Blueprint.

Table 2: Strategic Objectives #1 & #2 - Action and Initiatives (2023 to 2026)

Actions and Initiatives	Estimated Annual Investments (\$1,000's)			Total Estimated Investments (1,000's)
	2023-24	2024-25	2025-26	
New construction - Replacement of aged units including Net Zero Pilot Project	\$28,000	\$4,550*	\$5,800*	\$38,350
Modernization and Improvements – Energy Efficiency Projects	\$4,000*	\$4,000*	\$4,000*	\$12,000
Renewable Energy Solutions for Space heating (i.e., Biomass)	\$2,700	\$5,175*	\$2,000*	\$9,875
Energy audits and feasibility studies (Retrofits and Renewable Energy)	\$400	\$100	\$100	\$600
Testing, Evaluation, and Outreach	\$70	\$70	\$70	\$210
<b>Totals (* conditional on availability of funding)</b>	<b>\$35,170</b>	<b>\$13,895</b>	<b>\$11,970</b>	<b>\$61,035</b>

**kWh/m<sup>2</sup>** Kilowatt-hour per meter squared (kWh/m<sup>2</sup>) is also referred to as the EUI, where the unit is the amount of all energy sources in kWh expressed as a function of building area in square metres per year. It provides a standard way of comparing energy uses between various types of buildings or structures.

# STRATEGIC OBJECTIVES #3 & #4

## Strategic Objective #3: Increase capacity to manage and maintain energy solutions

In order to meet the goals laid out in the previous two objectives, we must ensure that we effectively manage and maintain our housing portfolio so that it continues to run efficiently. Ongoing monitoring and maintenance play an important role in ensuring the continued success of any of the actions or initiatives implemented from the objectives above. These efforts will also help to expand the energy efficiency of our housing portfolio and identify further actions for implementation. We will also invest in capacity building initiatives and provide tools to support the continued maintenance and monitoring of the solutions implemented through this Strategy.

## Strategic Objective #4: Increase partnership opportunities in energy projects

To achieve our objectives, we will need to remain vigilant in leveraging the numerous opportunities with our partners. This includes Indigenous governments and communities, the Federal government, local industry, and other stakeholders. These efforts will not only require that we maintain and foster existing relationships, but also that we seek out new and innovative partnership approaches wherever possible. These partnerships will focus on increasing the energy efficiency of our housing stock, expanding our use of renewable energy sources, and reducing GHG emissions.

Table 3: Strategic Objectives #3 & #4 - Action and Initiatives (2023 to 2026)

Actions and Initiatives	Estimated Annual Investments (\$1,000's)			Total Estimated Investments (1,000's)
	2023-24	2024-25	2025-26	
Resource up to 12 trades apprentices each year in Local Housing Organizations	\$860	\$860	\$860	\$2,580
Energy management position (initial 2-year term pilot)	\$150	\$150	\$150*	\$450
Operations and Maintenance Training and Support	\$100	\$100	\$100	\$300
Investing in and fostering partnerships through Community Energy Projects and Planning	\$280	\$280	\$280	\$840
Participation in Energy focused Boards, Committees, and Working Groups	\$20	\$20	\$20	\$60
<b>Totals (* conditional on availability of funding)</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$1,410</b>	<b>\$4,230</b>

## REPORTING ON OUR SUCCESS

Reports on the progress of the various Actions and Initiatives for each of our four Strategic Objectives from this and future Blueprints will be provided annually as data become available. Our annual reporting will also contain any Actions and Initiatives that were added or amended, along with the rationale for the revisions. As part of our annual reporting, Housing NWT will outline progress being made across each of this Strategy's Strategic Objectives as we progress towards our targeted 2030 outcomes.









**INCREASING THE  
WELLBEING OF INDIVIDUALS  
AND COMMUNITIES BY  
PROVIDING FAIR ACCESS TO  
QUALITY HOUSING SUPPORT  
FOR PEOPLE MOST IN NEED.**

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