



2030 ENERGY STRATEGY
ENERGY ACTION PLAN
2018-2021
MAY 2018

INTRODUCTION

This Northwest Territories 2030 Energy Strategy (Strategy) sets out the Government of the Northwest Territories' (GNWT) long-term approach to supporting secure, affordable and sustainable energy supply and use in the NWT. The goal of this Strategy is to guide the development of affordable, and sustainable energy for transportation, heat, and electricity, support energy efficiency and conservation, and promote renewable and alternative energy solutions for the NWT.

This three year Energy Action Plan (Plan) sets out the ongoing and yearly new **Actions and Initiatives** needed for the GNWT and its partners to achieve the **Strategic Objectives** set out in the Strategy. The six **Strategic Objectives** are:

1. **Work together to find solutions: community engagement, participation and empowerment.**
2. **Reduce GHG emissions from electricity generation in diesel powered communities by an average of 25%.**
3. **Reduce GHG emissions from transportation by 10% on a per person basis.**
4. **Increase the share of renewable energy used for space heating to 40%.**
5. **Increase residential, commercial, and government building energy efficiency by 15%.**
6. **A longer term vision: develop the NWT's energy potential, address industry emissions, and do our part to meet national climate change objectives.**

OUR ADAPTIVE APPROACH

The GNWT has set realistic and achievable **Strategic Objectives** and supporting Actions and Initiatives—based on current technology and costs—to achieve its Vision. Technologies improve and costs for energy solutions change over time. Because of this, the GNWT commits to flexible implementation of both the **Strategic Objectives** and **Actions and Initiatives**. Over the course of the 2030 Energy Strategy, the GNWT commits to continuously reassess and validate options and costs of solutions, and adapt the approach to find the best and most economical solutions. **The GNWT will update this three-year Plan every year detailing its investments in the Actions and Initiatives to meet the Strategy's Strategic Objectives.**

INVESTMENTS

The Government of the Northwest Territories, including its partners the federal government, NWT Housing Corporation (NTWHC), the Arctic Energy Alliance (AEA), the NWT Power Corporation (NTPC), as well as residents, business, communities, and industry will make significant investments to make this Energy Action Plan a reality. Table 1, provides a summary of government multi-year investments to implement this Plan. Many of the proposed **Actions and Initiatives** in this Plan are dependent on federal funding support under the Pan-Canadian Framework on Clean Growth and Climate Change. **Over the next three years the GNWT and its partners will spend approximately \$180 million to implement the Strategy.**

Table 1: Short Term Government Investments in the 2030 Energy Strategy

| (millions of \$) | 2018-19 | 2019-20 | 2020-21 | TOTAL |
|---------------------------------------|---------|---------|---------|---------|
| Capital Asset Retrofit Fund Ongoing | \$3.8 | \$3.8 | \$3.8 | \$11.4 |
| Arctic Energy Alliance Ongoing | \$2.7 | \$2.7 | \$2.7 | \$8.1 |
| GNWT Projects and Studies Ongoing | \$1.7 | \$1.7 | \$1.7 | \$5.0 |
| Federal Low Carbon Economy Fund (New) | \$8.3 | \$7.7 | \$7.6 | \$23.5 |
| Infrastructure Canada Funding (New) | \$17.3 | \$33.2 | \$40.8 | \$91.3 |
| Core GNWT funding (New) | \$- | \$0.3 | \$0.8 | \$1.1 |
| GNWT LCELF (New) | \$2.1 | \$1.9 | \$1.9 | \$5.8 |
| Matching GNWT/NTPC INFC Funding (New) | \$5.8 | \$11.1 | \$13.6 | \$30.5 |
| Total | \$41.6 | \$62.3 | \$72.8 | \$176.7 |

Table 2: Summary of Short Term Investments by 2030 Energy Strategy by Strategic Objective

| Strategic Objective | Yearly Investment | | | TOTAL |
|--|-------------------|---------|---------|---------|
| | 2018-19 | 2019-20 | 2020-21 | |
| 1. Working Together | \$2.5 | \$2.7 | \$2.8 | \$8.0 |
| 2. 25% Electricity | \$13.2 | \$37.1 | \$52.8 | \$103.2 |
| 3. 10% Transport | \$3.2 | \$1.5 | \$1.4 | \$6.1 |
| 4. & 5. 40% Heat & 15% Energy Efficiency | \$9.2 | \$10.1 | \$10.5 | \$29.9 |
| 6. Long-term Vision and Industry | \$13.4 | \$10.9 | \$5.3 | \$29.5 |
| Total | \$41.7 | \$62.3 | \$72.5 | \$176.7 |

STRATEGIC OBJECTIVE 1: WORK TOGETHER TO FIND SOLUTIONS: COMMUNITY ENGAGEMENT, PARTICIPATION AND EMPOWERMENT

During the public engagement we heard that communities want to be more engaged and to be part of the solution. This included a range of options including being partners in developing solutions, undertaking projects independently, to simply being kept updated on local solutions.

The GNWT agrees that our collective know-how and effort is needed, and will work to ensure better communication, engagement, and support communities.

The following **Actions and Initiatives** will be undertaken over the next three years to meet this **Strategic Objective**:

| ACTIONS AND INITIATIVES | Lead | Resources | | | Funding Source(s) |
|--|-----------|--------------------|--------------------|--------------------|-------------------|
| | | 2018-19 | 2019-20 | 2020-21 | |
| Continue to involve and engage communities on energy projects | GNWT/NTPC | Core | Core | Core | GNWT |
| Energy Mentorship for Community Reps | NTPC | Core | \$25,000 | \$25,000 | GNWT |
| Provide Community Renewable Electricity Framework | GNWT | Complete | - | - | GNWT |
| Undertake education, energy literacy, curriculum development and outreach initiatives | GNWT/AEA | \$25,000 | \$25,000 | \$25,000 | GNWT |
| Support community-based energy projects by providing technical support to help communities advance renewable energy and energy saving projects | GNWT/NTPC | Core | Core | Core | GNWT |
| Create partnership opportunities in local renewable energy projects for community and Aboriginal governments that support local capacity development | GNWT/NTPC | Core | Core | Core | GNWT |
| Support the development and implementation of community energy plans | GNWT/AEA | \$70,000 | \$200,000 | \$275,000 | GNWT/LCELF |
| Implement a new application based Government GHG Fund to support government energy efficiency, renewable and alternative energy projects | GNWT | \$2,440,000 | \$2,440,000 | \$2,440,000 | GNWT/LCELF |
| TOTAL | | \$2,535,000 | \$2,690,000 | \$2,765,000 | |

STRATEGIC OBJECTIVE 2: REDUCE GREENHOUSE GAS EMISSIONS FROM ELECTRICITY GENERATION IN DIESEL COMMUNITIES BY 25%

During the regional engagement sessions we heard that reducing reliance on diesel electricity generation in communities was a priority. Community diesel electricity generation produces on average 72 kt of GHG emissions, accounting for about 4% of the NWT's annual total. The

GNWT and partners will implement renewable and alternative energy solutions appropriate to each community and region to reduce GHGs from diesel electricity by 25% by 2030. A 25% reduction equates to a reduction of 18 kt tonnes by 2030 over average historical levels.

The following **Actions and Initiatives** will be undertaken over the next three years to meet this **Strategic Objective**:

| ACTIONS AND INITIATIVES | Lead | Resources | | | Funding Source(s) |
|--|-----------|---------------------|---------------------|---------------------|-------------------|
| | | 2018-19 | 2019-20 | 2020-21 | |
| Inuvik Wind Build | NTPC/GNWT | \$12,000,000 | \$18,000,000 | \$10,000,000 | GNWT/INFC |
| Community Wind/Diesel Hybrid | NTPC/GNWT | - | \$16,400,000 | \$16,600,000 | GNWT/INFC |
| Community LNG Projects | NTPC/GNWT | - | \$500,000 | \$7,000,000 | GNWT/INFC |
| Transmission | NTPC/GNWT | - | - | \$16,500,000 | GNWT/INFC |
| Various Community Solar | NTPC/GNWT | \$120,000 | \$1,000,000 | \$1,500,000 | GNWT/INFC |
| Continue to undertake research and feasibility | GNWT | \$1,200,000 | \$1,200,000 | \$1,200,000 | GNWT |
| TOTAL | | \$13,320,000 | \$37,100,000 | \$52,800,000 | |

STRATEGIC OBJECTIVE 3: THE GNWT WILL REDUCE EMISSIONS FROM TRANSPORTATION BY 10% ON A PER PERSON BASIS

During our public engagement sessions, we heard that, though it will be challenging in the NWT context, the GNWT should address emissions from the transportation sector. Large distances between communities, and the distance from southern markets, means that goods and people must travel

much farther than in most southern jurisdictions. Distances and cold weather are challenges for alternative fuel options such as electric vehicles and biofuels. In general, to reduce costs and emissions for transportation the following range of initiatives are possible: drive less, use alternative modes of

transportation such as cycling or public transit or less air transportation and more marine transportation, use smaller vehicles and more efficient electric or hybrid vehicles for commuting, and use less GHG-intensive fuel sources, such as renewable electricity or biofuels.

The following **Actions and Initiatives** will be undertaken over the next three years to meet this **Strategic Objective**:

| ACTIONS AND INITIATIVES | Lead | Resources | | | Funding Source(s) |
|---|----------|--------------------|--------------------|--------------------|-------------------|
| | | 2018-19 | 2019-20 | 2020-21 | |
| Implementing GNWT fleet management and efficiency improvements for vehicles, heavy equipment and marine fleet through the Government Energy Fund | GNWT | \$3,150,000 | \$1,275,000 | \$640,000 | GNWT/ LCELF |
| Initiate a rebate program for low or zero emissions vehicles and charging stations in hydro communities | GNWT/AEA | - | \$100,000 | \$100,000 | GNWT |
| Create program to support efficiency in long-haul trucks and the installation of in-line auxiliary heaters for fleet vehicles and heavy duty vehicles to reduce idling | GNWT/AEA | - | \$150,000 | \$150,000 | GNWT |
| Support community-based transportation initiatives through the Government Energy Fund that reduce emissions, such as active transport, public transportation, community fleet efficiency, and car sharing programs. | GNWT | - | - | - | GNWT/ LCELF |
| Undertake an education and awareness campaign to encourage efficient vehicle choice, "Smart Idling", efficient driving practices, and alternative transportation choices | GNWT | Core | Core | Core | GNWT |
| Assess the feasibility and complete Zero-Emission Vehicle Transport Corridor NWT Boarder to Yellowknife | GNWT | - | - | \$500,000 | GNWT |
| Assess the status of LNG and biofuels for transportation in the NWT context, including availability, price, long-term storage and cold weather stability | GNWT | Core | - | - | GNWT |
| Work at the national level to ensure that renewable fuel standards are applicable to the North | GNWT | Core | Core | Core | GNWT |
| Work at the national level to improve vehicle efficiency standards | GNWT | Core | Core | Core | GNWT |
| Support Industrial vehicle efficiency and retrofits through the Commercial and Industrial Energy Fund | GNWT | - | - | - | GNWT/LCELF |
| TOTAL | | \$3,150,000 | \$1,525,000 | \$1,390,000 | |

STRATEGIC OBJECTIVE 4 AND 5: INCREASE THE SHARE OF RENEWABLE ENERGY USED FOR COMMUNITY HEAT TO 40% BY 2030

INCREASE COMMERCIAL, RESIDENTIAL AND INSTITUTIONAL BUILDING ENERGY EFFICIENCY BY 15% OVER 2015 LEVELS BY 2030

During the regional public engagement we heard that supporting building energy efficiency is key in addressing energy affordability and reducing greenhouse gas emissions in the NWT. In fact, energy efficiency and conservation are often the least costly solution and the easiest to implement. For this reason energy efficiency is being pursued as an objective in this Strategy, and will help meet

the other Strategic Objectives. Energy efficiency—in heating and electricity in particular—will help the NWT reach its objectives and targets.

Community space heating is a significant contributor to the cost of living and GHG emissions in the NWT. Community heating with fossil fuels produces about 108 kt of GHG per year, or approximately

13% of total NWT emissions. Space heating in the NWT is primarily fueled by heating oil, propane and renewable biomass. We heard from the public that the GNWT should support the greater use of renewables for heating to make heating more affordable and sustainable

The following **Actions and Initiatives** will be undertaken over the next three years to meet this **Strategic Objective**:

| ACTIONS AND INITIATIVES | Lead | Resources | | | Funding Source(s) |
|---|------|-------------|-------------|-------------|-------------------|
| | | 2018-19 | 2019-20 | 2020-21 | |
| Enhancements to Energy Efficiency Rebate/Incentive Program | AEA | \$200,000 | \$275,000 | \$300,000 | GNWT/LCELF |
| Enhancement to the Alternative Energy Efficiency Technologies Program | AEA | \$250,000 | \$300,000 | \$350,000 | GNWT/LCELF |
| Enhancement to the Commercial Energy Conservation and Efficiency Program | AEA | \$300,000 | \$350,000 | \$350,000 | GNWT/LCELF |
| Deep Home Energy Retrofit Program (ERS Follow-up & Implementation Support) | AEA | \$160,000 | \$300,000 | \$400,000 | GNWT/LCELF |
| Low-Income Home Energy Assistance | AEA | \$90,000 | \$300,000 | \$275,000 | GNWT/LCELF |
| Energy Efficiency and Conservation Retrofits for Non-Government Organization (NGOs) | AEA | \$175,000 | \$350,000 | \$500,000 | GNWT/LCELF |
| Electric Heat Incentive South Slave (to Take Advantage of Reduced Electric Heat Rate) | AEA | \$75,000 | \$75,000 | \$75,000 | GNWT/LCELF |
| Continue Community Wood Stove Program | AEA | \$125,000 | \$200,000 | \$350,000 | GNWT/LCELF |
| Enhancements to Community Government Program | AEA | \$55,000 | \$150,000 | \$125,000 | GNWT/LCELF |
| Ongoing AEA Programs and Services | AEA | \$2,700,000 | \$2,700,000 | \$2,700,000 | GNWT |

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Strategic Objective 4 and 5: Increase the Share of renewable energy used for Community heat to 40% by 2030/ Increase commercial, residential and Institutional building energy efficiency by 15% over 2015 levels by 2030 (continued)

| | | | | | |
|--|-------|--------------------|---------------------|---------------------|------------|
| Continue the GNWT Capital Asset Retrofit Program | GNWT | \$3,800,000 | \$3,800,000 | \$3,800,000 | GNWT |
| NWT Housing Corporation Energy Efficiency and Heating Improvements | NWTHC | \$1,317,000 | \$1,317,000 | \$1,317,000 | GNWT/LCELF |
| TOTAL | | \$9,247,000 | \$10,117,000 | \$10,542,000 | |

STRATEGIC OBJECTIVE 6: A LONGER TERM VISION: DEVELOP THE NWT'S ENERGY POTENTIAL, ADDRESS INDUSTRY EMISSIONS, AND DO OUR PART TO MEET NATIONAL CLIMATE CHANGE OBJECTIVES.

The NWT has significant conventional, renewable and alternative energy potential. Developing this potential improves our economy, creates jobs, and ensures a more sustainable energy system for the NWT and Canada.

We heard consistently from the public that the GNWT must do more, be more innovative, and address industrial emissions. Connecting the NWT to the North American electrical grid, connecting the North and South Slave electrical systems, and connecting industry to

renewable energy, are initiatives that would significantly reduce GHG emissions, and reduce the cost of living and doing business in the NWT. Developing the Taltson hydroelectric system would enable the NWT to make a significant contribution to the national GHG reduction targets agreed under the Paris Agreement.

Achieving a transformative reduction in the NWT's GHG emission requires a transformative solution targeted at our largest emitting sector.

Bringing 60MW of renewable hydroelectricity from Taltson to industry will allow us to reduce industrial GHG emissions by about 224 kt. This is 44% of the required 517 kt required to meet our Pan-Canadian Framework target of 30% below 2005 levels by 2030. The Taltson development requires Government of Canada support to proceed. Without federal support for Taltson, the NWT will not be able to reach its target.

The following **Actions and Initiatives** will be undertaken over the next three years to meet this **Strategic Objective**:

| ACTIONS AND INITIATIVES | Lead | Resources | | | Funding Source(s) |
|---|-----------|---------------------|---------------------|--------------------|-------------------|
| | | 2018-19 | 2019-20 | 2020-21 | |
| Implement the Commercial and Industrial GHG Fund | GNWT | \$2,000,000 | \$2,000,000 | \$2,000,000 | LCELF |
| Exploring Partnership and Emerging Technologies | GNWT | \$470,000 | \$470,000 | \$470,000 | GNWT |
| Further the South Slave to North Slave Transmission Interconnect | GNWT/NTPC | Core | Core | Core | GNWT |
| NTPC Hydro Asset Overhauls | NTPC | \$10,700,000 | \$8,100,000 | \$2,300,000 | GNWT/INFC |
| Hydro and Transmission Development | GNWT/NTPC | \$200,000 | \$300,000 | \$500,000 | GNWT/INFC |
| Seek opportunities to replace diesel with liquefied natural gas for heating and electricity | GNWT | Core | Core | Core | GNWT |
| TOTAL | | \$13,370,000 | \$10,870,000 | \$5,270,000 | |

REPORTING ON OUR SUCCESS

The GNWT will prepare and publicly release annual reports to track and communicate its activities and progress towards its Strategic Goals.



