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# ENERGY PRIORITIES FRAMEWORK

Ministerial Energy Coordinating Committee



# Introduction

The Government of the Northwest Territories is committed to the directions established in its Energy Plan and Greenhouse Gas Strategy.

The Policy Framework developed in the 2007 NWT Energy Plan provides the foundation for advancing the goals and priorities of the 16th Legislative Assembly. Five key action areas have been identified:

- Energy Conservation & Efficiency
- Alternative Energy & Emerging Technologies
- Energy Policy and Planning
- Energy Development & Supply
- Reducing GNWT Energy Use

Key energy priorities have been identified in each of these areas. This document focuses on the key priorities and initiatives that can be achieved over the next four years. Others will likely be identified over the coming years. Comments, ideas and suggestions with regard to energy priorities are welcome and can be sent to:

## **Energy Planning**

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- 
- Energy Conservation & Efficiency • Alternative Energy & Emerging Technologies
  - Energy Policy and Planning • Energy Development & Supply
  - Reducing GNWT Energy Use

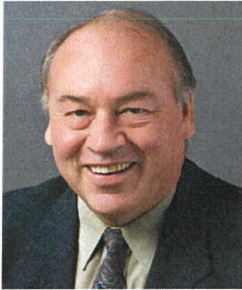


# Ministers' Message

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**The Honourable Bob McLeod**  
Minister of Industry, Tourism and  
Investment  
Minister Responsible for Energy  
Initiatives



**The Honourable Floyd Roland**  
Minister Responsible for the Northwest  
Territories Power Corporation



**The Honourable  
J. Michael Miltenberger**  
Minister of Environment and  
Natural Resources

Energy touches us all. Its use impacts our environment, the cost contributes significantly to our high cost of living, and the development of our energy resources will drive our economy for decades to come.

Energy, therefore, needs to be considered in the broadest possible context - the environment, the economy, and our communities and residents. It is for this reason we established our Ministerial Energy Coordinating Committee, ensuring that our priorities reflect a considered, balanced approach.

Members of the Legislative Assembly, and NWT residents have expressed frustration with the rising cost of energy, our reliance on imported fossil fuels, and our exposure to world oil prices. Many have stated that we need to change our fundamental approach to energy use and supply in the Northwest Territories. We agree. The energy priorities of the 16th Legislative Assembly reinforce this:

- *Pursue initiatives that reduce the cost of living, and in particular, energy costs;*
- *Work proactively with residents, communities and industry on mitigation of climate change; and*
- *Advance alternative energy initiatives.*

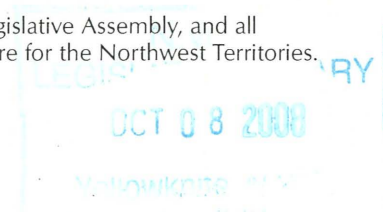
Energy conservation and efficiency is the immediate response to our challenges and we remain committed to providing communities and residents with the tools they require to manage their energy use.

In the long-term, we have also chosen to focus on reducing our dependence on imported diesel. To this end, there are alternative solutions to imported diesel for every community in the NWT.

Included in this document are a number of priority initiatives aimed at achieving this, including:

- *A long-term commitment to the development of our hydroelectric resources through a NWT Hydro Strategy;*
- *A commitment to expand the use of biomass, including for electricity generation, building upon the success already achieved through our use of wood pellet boilers;*
- *A commitment to develop our wind resources, beginning in our Beaufort communities;*
- *A commitment to continue to support communities as they pursue geothermal energy solutions; and,*
- *A commitment to pursue the use of cleaner-burning NWT natural gas to provide heat and generate electricity in some of our communities.*

We are prepared to make the commitment required and ask that all Members of the Legislative Assembly, and all communities and residents, join us and work together towards a sustainable energy future for the Northwest Territories.





# Energy Conservation and Efficiency

## Energy Information and Awareness

**PRIORITY** Increasing the amount of practical information available for communities and residents in managing their energy use and technical information to support the development of alternative energy supply options is a key priority.

An enhanced outreach program to our schools will engage our youth in understanding energy supply options for their future.

**OUTCOME** 2008 – 2011 Energy information, marketing efforts and public campaigns will continue.

## Increase Community Presence of Arctic Energy Alliance (AEA)

**PRIORITY** The AEA is making substantive strides in increasing their community presence and continued efforts and support is required. The development of Community Energy Plans is an important component.

**OUTCOME** 2008 – 2011 Increasing community presence and support is an ongoing priority. All NWT communities will have completed Community Energy Plans by 2011.

## Energy Conservation and Efficiency Programs

**PRIORITY** Substantial enhancements to programs have been made in the past year, including the Energy Efficiency Incentive Program, support for Home Energy Audits and the Energy Conservation Program. Energy Conservation and Efficiency Programs are funded by Environment and Natural Resources and largely delivered through the Arctic Energy Alliance. Reporting on program results and continual program renewal will ensure that NWT residents and communities are provided with the tools to manage their energy costs.

**OUTCOME** 2008 – 2011 Enhanced investments in this key priority area will continue, with results published in the NWT Energy Report.

## Expansion of Residual Heating Systems

**PRIORITY** Two-thirds of the energy input into thermal generators is lost in residual, or “waste”, heat. This heat can be utilized by adjacent buildings and with the rising costs of fossil fuels, new residual heat projects are becoming economic. Fort Simpson, Fort Liard, and Inuvik have been identified as potential locations to expand the use of residual heat for space and water heating.

**OUTCOME** 2008 – 2010 Detailed project plans will be developed by early 2009, with the development of at least one residual heat project by 2010. By 2011, at least three residual heat projects will be operational.



## Energy Priorities



# Alternative Energy and Emerging Technologies

## Wind Energy Development

**PRIORITY** Wind monitoring efforts in a number of NWT communities will continue. The development of a detailed business model for a wind development in Tuktoyaktuk is underway. This initial project will lead to development of additional installations

**OUTCOME** The first wind development in the community of Tuktoyaktuk will be operational by 2009/2010. By 2011, operating turbines will be expanded to at least two other communities.

## Biomass Energy

**PRIORITY** The use of wood pellet boilers in the North Slave Region has shown to be successful. This program will be expanded for other public facilities. An initial study will examine the feasibility of wood pellet boilers in Mackenzie Valley communities, opportunities for pellet manufacture, the availability of forest resources, as well as examine the potential to spur the residential/private wood pellet market in Yellowknife.

The potential to use biomass for electricity generation in NWT diesel communities will also be examined, with an initial pilot project targeted for 2011.

**OUTCOME** Two wood pellet boilers will be installed in Chief Jimmy Bruneau School and at least six public buildings will be outfitted with wood pellet boilers by 2010. A comprehensive Biofuels Strategy will be completed in early 2009 and a biomass electricity generation project will be initiated in 2011.

## Development of Core Expertise in Alternative Energy and Emerging Technology

**PRIORITY** Developing photovoltaic, solar and wind energy projects, and integrating them into existing diesel systems and adapting emerging technologies for northern applications requires core technical expertise.

**OUTCOME** 2008 - 2011 Enhancement of technical expertise in the NWT will continue to be a priority of the GNWT.

## Support for Communities in Development of Alternative Energy Solutions

**PRIORITY** The Alternative Energy Technology Program will be maintained to support communities and residents in applying alternative energy and emerging technologies in the NWT. An Alternative Energy mapping project will also be undertaken to identify potential community energy sources in all regions of the NWT.

**OUTCOME** 2008 - 2011 Continued financial and technical support for communities and residents.

## Support for Geothermal Technology

**PRIORITY** The GNWT supports the City of Yellowknife in investigating the potential to utilize geothermal energy for heating purposes. Fort Simpson and other communities in the Deh Cho region may also have significant geothermal potential. The GNWT will also examine other potential applications for geothermal energy.

**OUTCOME** 2008 - 2011 A pilot project utilizing geothermal ground-source heat pumps in Fort Smith will be completed in 2009. Support will continue for the Yellowknife project and geothermal opportunities in other regions of the NWT will be examined.



Energy Priorities



# Energy Policy and Planning

## **Review of Electricity Rates, Regulation and Subsidy Programs**

PRIORITY

A comprehensive Review will be undertaken to ensure electricity rates are rational, our subsidy programs are effective, and our regulatory system reflects current operating realities in the NWT and supports the priorities of the 16th Legislative Assembly.

OUTCOME

2009 Public discussions on the values and principles of the NWT Electricity System will be held in late 2008, a Draft Review tabled in June 2009, followed by a Legislative Proposal for change.

## **Investigate Assigning a Cost to Carbon Emissions**

PRIORITY

As part of an overall Review of Revenue Initiatives, the GNWT will examine the potential costs (higher energy costs in communities) and potential benefits (reduced GHG emissions) of implementing a carbon tax.

OUTCOME

2009 The Review of Revenue Initiatives will be completed in 2009.

## **NWT Energy Report and Renewal of NWT Energy Plan**

PRIORITY

Regular reporting on GNWT energy initiatives will help identify successes and point to areas where more effort is required. Four years from now, we will need to take the lessons learned and renew our Energy Plan. The new plan is envisioned as a comprehensive document, including many aspects of the NWT Greenhouse Gas Strategy.

OUTCOME

2008–2011 Development of a NWT Energy Report in 2008. Development of a renewed Energy Plan in 2011.

## **NWT Hydro Strategy**

PRIORITY

Energy projects take at least 10 years to develop and it is important the up-front economic planning and environmental and engineering work is undertaken to take advantage of emerging opportunities. A strategic long-term approach is required to develop hydro for the benefit of future generations.

OUTCOME

2009 A Draft Strategy will be released for public input in October 2008, with a final NWT Hydro Strategy released in early 2009.

## **Planning for Devolution**

PRIORITY

The GNWT will continue to work towards devolution, including the assumption of responsibilities for development and management of our energy resources. Based on progress, detailed planning will be required for the transition to northern control of NWT energy resources.

OUTCOME

2008–2011 Development of an Agreement-in Principle with the Federal government and participating Aboriginal parties.



Energy Priorities



# Energy Development and Supply

## **Progressively Promote and Support Development of NWT Oil and Gas Resources**

**PRIORITY** Oil and gas development will provide the foundation for the NWT economy for decades to come. Leveraging this development to expand our hydro, as well as take advantage of other economic diversification opportunities is a clear priority (see below).

**OUTCOME** 2008 – 2011 An ongoing priority and the development of the Mackenzie Gas Project should be well underway.

## **Induced Benefits from Oil and Gas Development**

**PRIORITY** Secondary industries and niche manufacturing opportunities must be explored for residents to benefit from value added opportunities related to the NWT oil and gas industry. Promotion of NWT industry support services related to exploration and development will also provide opportunities for NWT businesses.

**OUTCOME** 2008 – 2011 By early 2009 an initial report on opportunities will be developed. Detailed plans will then be developed for the most promising opportunities.

## **Position Communities for Conversion to Natural Gas**

**PRIORITY** The proposed Mackenzie Gas Project will provide an opportunity to convert 3 communities (Ft. Good Hope, Ft. Simpson and Tulita) to natural gas.

**OUTCOME** 2011 Existing pre-feasibility analysis will be further developed into detailed economic and engineering plans.

## **Taltson Expansion Project**

**PRIORITY** The project, currently in the environmental assessment phase, will remain a high priority of the GNWT to ensure that all of the costs and benefits are analyzed and a decision to construct can be made by late 2009.

**OUTCOME** If the schedule proceeds as envisioned, the Taltson expansion project will be fully operational by 2012.

## **Mini-Hydro Development**

**PRIORITY** Increasing hydro supply to NWT Communities will be a key objective of the NWT Hydro Strategy. To support the Hydro Strategy, the GNWT will develop at least one mini-hydro project. Three opportunities are currently being examined in Lutsel K'e, Whati and Deline.

**OUTCOME** 2008 – 3 projects analyzed  
2009 – Decision to proceed with at least one mini-hydro project  
2011 – Project Completed.



Energy Priorities



# Reducing GNWT Energy Use

**PRIORITY** **Capital Asset Retrofit Fund and Energy Audits on GNWT Facilities**  
Energy saving opportunities identified by infrared thermal scanning and detailed energy audits will reduce the GNWT's environmental footprint and result in financial savings over the long-term. Capital upgrades will be undertaken on a number of facilities, with savings continually reinvested into other opportunities.

**OUTCOME** 2008 - 2011 Investment with a demonstrated environmental and financial return will be made, with initial projects scheduled for 2009/2010.

**PRIORITY** **Measuring GNWT Energy Performance**  
Detailed and accurate data on GNWT energy use and GHG emissions is required to ensure the GNWT achieves its target of a 10% reduction in GHG emissions below 2001 levels by 2011.

**OUTCOME** 2008 - 2011 Ongoing reporting detailing GNWT energy use and GHG emissions.

**PRIORITY** **Energy Management of Public Housing**  
A comprehensive energy survey of public housing units is underway. Detailed energy audits need to be conducted to identify potential upgrades, and some projects that utilize renewable energy technologies will be initiated. For example, the NWT Housing Corporation has installed Solar Hot Water Preheating systems on retirement centres in Hay River and Fort Providence, providing a combined emission reduction of 15.8 tonnes per year.

**OUTCOME** 2008 - 2011 By early 2009, Solar Hot Water Preheating systems will be installed in Fort Smith and Fort Resolution, followed by additional projects in subsequent years.

**PRIORITY** **Planning Capital Projects**  
Buildings designed to meet the requirements of the Good Building Practice for Northern Facilities guidebook far exceed the requirements (25%) of the Model National Energy Code for Buildings (MNECB). The main benefit to the GNWT is the immediate reduction in fuel and electricity consumption, resulting in long-term operating cost savings. Greenhouse gas emissions are also reduced. Life-cycle cost analysis is used to ensure that the combined capital and energy costs for buildings are as low as possible.

**OUTCOME** 2008 - 2011 New buildings will continue to beat Model National Energy Code standards. Energy use in new buildings will be monitored to confirm performance expectations. The Good Building Practice of Northern Facilities standard design protocol will be applied to all major GNWT building projects.



Energy Priorities