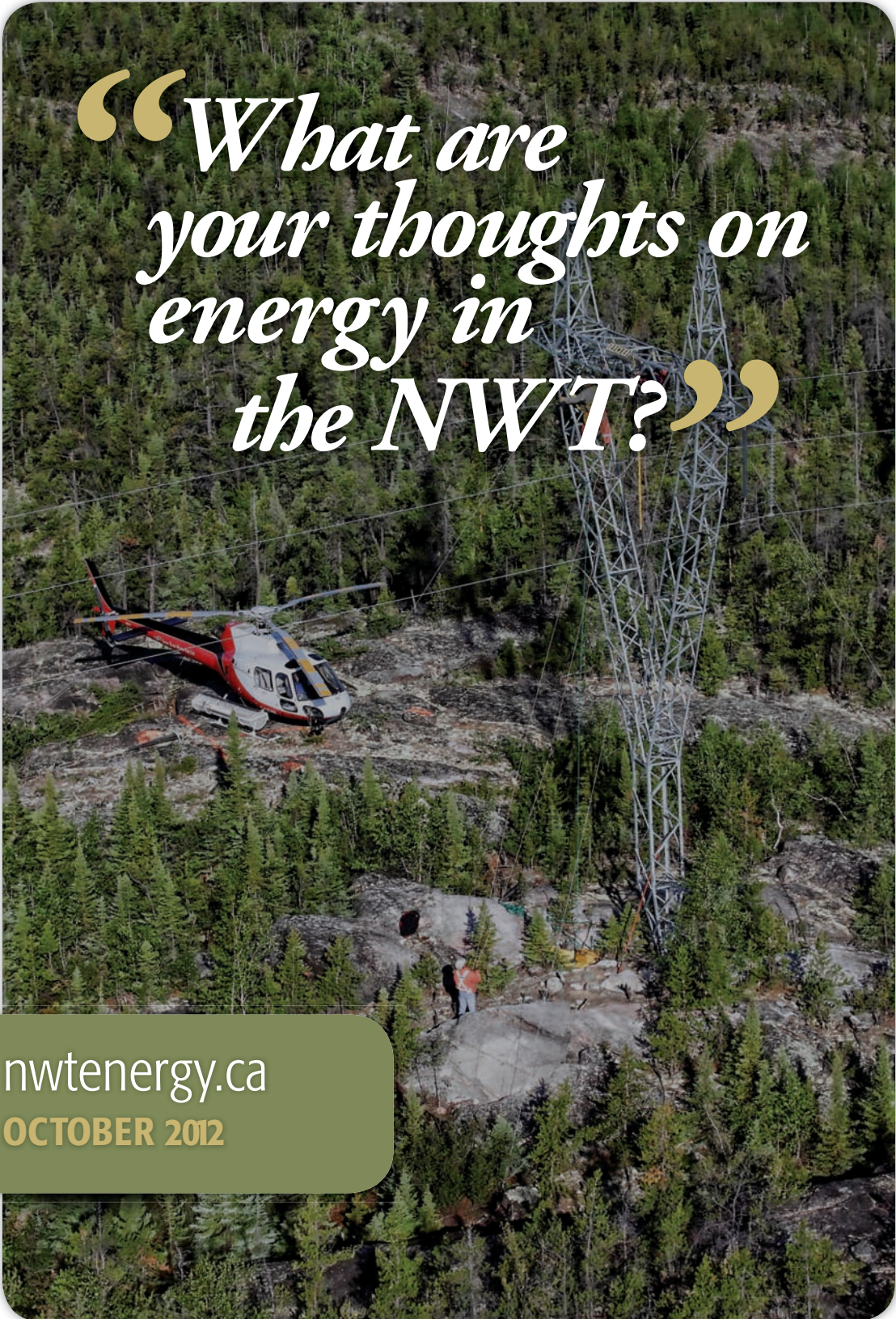


*A Vision for Energy in the
Northwest Territories*

**DEVELOPING THE 2013 NORTHWEST
TERRITORIES ENERGY PLAN**

OCTOBER 2012





*“What are
your thoughts on
energy in
the NWT?”*

nwtenergy.ca

OCTOBER 2012

Message from the Ministerial Energy Coordination and Climate Change Committee

A Vision for Energy Supply in the Northwest Territories

There is a great deal of consensus across the Northwest Territories (NWT) on the need to reduce our high cost of energy and the impacts of our energy use on the environment. During the 15th and 16th Legislative Assemblies, the GNWT outlined its commitment to action in these areas in the documents Energy for the Future (2007 Energy Plan) and the complementary NWT Greenhouse Gas Strategy, which was renewed in 2011.

It is time to build on earlier work and establish a vision for future energy supply and use in the NWT that reflects the goals and aspirations of residents, communities, and Aboriginal governments. The Government of the Northwest Territories (GNWT) believes that this vision needs to be founded upon the goal of reducing imported oil and greater utilization of local and renewable forms of energy. This vision needs to capture the opportunities before us:

- Our existing hydro grids in the NWT are the result, in part, of leveraging the power requirements of industry. The Snare and Bluefish facilities in the north were developed to serve Con and Giant gold mines in Yellowknife and the Taltson dam was built in part to serve the Pine Point lead and zinc mine. These mines are now closed, but the NWT was left with a lasting legacy of local, renewable energy. The NWT needs to build on this legacy and expand our hydro infrastructure.
- The high cost of energy can be an impediment to not only resource development in the NWT, but to the northern businesses vying to take a part in resource development through the provision of goods and services. The displacement of imported oil with reliable, stable-priced northern power needs to be a key objective.
- Expansion of the hydro grid, including a North-South Slave connection and over time, a link with the Alberta grid, could improve system reliability and reduce costs over the long term.
- There are energy solutions in every region of the NWT:
 - As demonstrated by the recent installation of wind turbines at the Diavik mine site, wind can work in the NWT. Communities in the T'licho and Beaufort regions are known to have good wind regimes. Wind energy needs to be included as a part of the solution to providing local and renewable energy in NWT communities.
 - Some parts of the NWT have more sunlight than Berlin, Tokyo, Paris, and many locations in southern Canada. Our current solar installation in Fort

Simpson is producing more power than expected. Through the NWT Solar Strategy, the GNWT will establish a target of displacing 10 per cent of diesel electricity generation in the Northwest Territories with solar energy.

- There is high geothermal potential in the southern part of the NWT. The GNWT is currently working with the community of Fort Liard to examine the potential for the first northern geothermal development in Canada to produce electricity as well as heat.
- Biomass could eventually be expanded to most communities in the NWT, as reflected in the renewed NWT Biomass Strategy. Wood pellets are currently being used in many buildings in the NWT to generate heat at a cost equivalent to about 60 cents per litre of oil. Through the Strategy, the GNWT will be promoting the development of locally sourced wood pellets and other biomass material.
- The GNWT recently installed a 60 kilowatt solar installation in Fort Simpson at a cost of \$12.50 per watt. The cost of solar continues to drop, demonstrated by a planned expansion of the system which is projected to cost \$9.00 per watt.
- To further support these actions, the GNWT will be releasing an updated Biomass Strategy and a new Solar Strategy.
- The GNWT has also invested \$9.1 million in energy efficiency and conservation for communities and residents since 2007, which includes the establishment of regional offices of the Arctic Energy Alliance in Inuvik, Norman Wells and Fort Simpson.
- A number of public buildings in Fort Smith have been converted to electric heat, using surplus hydro capacity from the Taltson hydro facility. As well, work has been done on expanding the hydro grid to communities such as Whati and Fort Providence, which currently rely on diesel generation.

The map on the following page reflects some of these opportunities. The GNWT has a great deal of work to build upon. Nearly \$50 million in investments in energy projects and programming have been made over the past four years. Achievements have included:

- The NWT is recognized as a national leader in the installation of commercial-sized wood pellet boilers - cumulative GNWT savings from these initiatives is valued today at \$7.1 million, resulting in GHG emissions reductions of 16,963 tonnes.

The GNWT has initiated a collaborative process for the development of a new 2013 Northwest Territories Energy Plan. This process will include an Energy Charrette, to be held November 21-23 in Yellowknife. The Charrette is a roundtable discussion centred on the questions raised in this discussion paper. It will include representatives of communities, Aboriginal governments, businesses, non-government organizations and other stakeholders. The results of the Energy Charrette will be used to inform the development of the 2013 Energy

Plan. Considering the role of energy in terms of resource development and our economy, this work will also be linked to the NWT Mineral Development Strategy and the NWT Economic Opportunities Strategy that are currently under development.

On behalf of the 17th Legislative Assembly, we would like to express our appreciation to all participants for their time and effort in reading this document and providing their ideas and comments.



Hon. Robert
(Bob) McLeod



Hon. David
Ramsay



Hon. Michael
Miltenberger



Hon. Glen
Abernethy

POTENTIAL GRID EXPANSION AND POWER SOLUTIONS IN THE NWT



Note: This map shows ultimate potential and is a vision that would require at least 20 to 30 years to fully achieve. NWT communities have very small power loads and new transmission links to most small communities would likely have to be facilitated through the existence of larger industrial loads and connections to the continental electricity grid.

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1 Introduction: A Vision for the Future

The Northwest Territories (NWT) continues to face significant challenges regarding the supply and use of energy. We largely rely on imported oil yet have an abundance of renewable resources including hydro, biomass (forests), solar, wind and geothermal power – all of which can play a role in our communities.

The Government of the Northwest Territories (GNWT) invested over \$50 million in energy programs and projects through the Energy Priorities Framework since 2008. The results of these investments are detailed in the 2010 NWT Energy Report, which can be downloaded from the following website: www.nwtenergy.ca

Some of the successes over the past four years are highlighted in the preceding message from the GNWT Ministerial Energy Coordinating and Climate Change Committee. Building upon earlier work to reduce our energy costs as well as the impact of our energy use on the environment is the challenge to be addressed. This work needs to be guided by a vision, and for the GNWT, that vision includes greater use of local and renewable energy sources for our communities.

The last Energy Plan was developed in 2007 and it is time to update it. This paper is intended to provide some background on key issues and poses a number of questions for communities, governments, Aboriginal organizations and NWT residents to review and comment upon.

The 2013 Energy Plan will focus on the future planning for the generation, transmission and use of energy in the NWT. This mainly means the heating fuel, electricity, and transportation

fuel sectors. Natural resource exploration and development are considered and included only where they can provide for domestic energy requirements. The development of oil and gas resources, and the benefits they bring to the economy, will be addressed through the NWT Economic Development Strategy (<http://www.iti.gov.nt.ca/business-economic-development/>).

Establishing our collective vision for the future should be a collaborative process. This is why the GNWT has taken a unique “collaborative policy development” approach to the development of the 2013 Energy Plan. Central to this approach will be the NWT Energy Charrette.

1.1 NWT Energy Charrette

What is an Energy Charrette? A Charrette is an event that brings together governments, citizens, non-government organizations, and businesses to develop policy from the ground up, where stakeholder engagement serves as a core focus from the outset. As such, this discussion paper was developed in collaboration with civil society representatives, community representatives and various departments and agencies of the GNWT.

The NWT Energy Charrette will bring together approximately 100 invited community government leaders, representatives from Aboriginal development corporations, involved citizens, federal government and GNWT personnel, as well as a number of experts in the field of energy. The participants will discuss key energy issues and potential actions that the GNWT can consider for inclusion in the 2013 Energy Plan.

Public input from this discussion paper will inform the discussion at the Charrette. Feedback can be submitted in a number of ways:

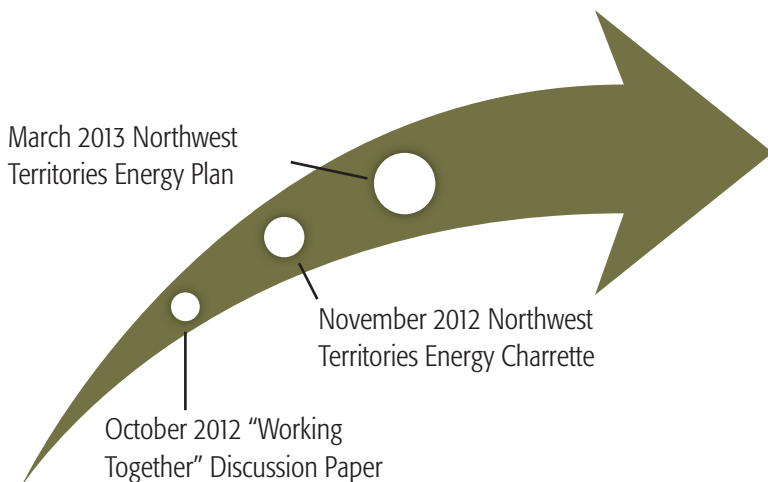
1. By telephone: call 1-867-873-7360 to voice your views;
2. By fax at: 1-867-873-0101;
3. By email: send your comments to nwtenergycharrette@gov.nt.ca;
4. By attending one of the public sessions during the Charrette. Visit www.nwtenergy.ca; in early November to learn more about public sessions being planned; or
5. By mail:

Energy Planning Division
Department of Industry, Tourism and Investment
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, NT X1A 2L9

Feedback can also be provided through the completion of a brief online survey that can be accessed via www.nwtenergy.ca.

The NWT Energy Charrette will be held November 21 – 23, 2012 in Yellowknife. A report on the results of the Charrette will be published in December. This report will then inform the development of the 2013 Energy Plan, which will be released in March 2013. The Energy Plan will articulate a vision for energy in the NWT, identify immediate actions the GNWT will undertake in support of this vision, and outline goals and anticipated results over the long term.

Further information, including Energy Fact Sheets, and the NWT Energy Report can be found at www.nwtenergy.ca.



2 Background

We use energy every day to light and heat our homes and businesses, to run equipment and to transport people and products to and from our communities. The cost of energy and utility services in our communities is very high compared to most other regions of Canada. These high costs negatively impact the NWT economy and drive up the cost of living in our communities. As a result of new or improved technologies, the NWT is making progress in developing local and renewable energy sources which will, over time, lead to lower energy costs and reduced impacts on our environment.



Diesel fuel storage tanks, Fort Simpson.

2.1 NWT Energy Picture - Overview

Fossil fuels provide the majority of energy used in the NWT. Energy supply in 2009/10 is shown in Figure 1. The use of natural gas is declining due to supply shortages in Norman Wells and Inuvik, while the use of wood pellets for space heating is increasing.

Figure 2 shows how much energy is used by various sectors in the NWT. The industrial sector includes energy use outside of communities by mines, exploration camps, and oil and gas development activities. The other categories of space heating and electricity generation are within communities. Transportation covers all on-road and off-road transportation as well as aviation fuel. Industry

consumes a very large portion of total energy use within the NWT (37%), while transportation uses 27% and space heating 26%. Community electricity generation only accounts for 10% of all energy consumption in the NWT.

Figure 1 Energy Supply in 2009/10 (18.7 million GJ)

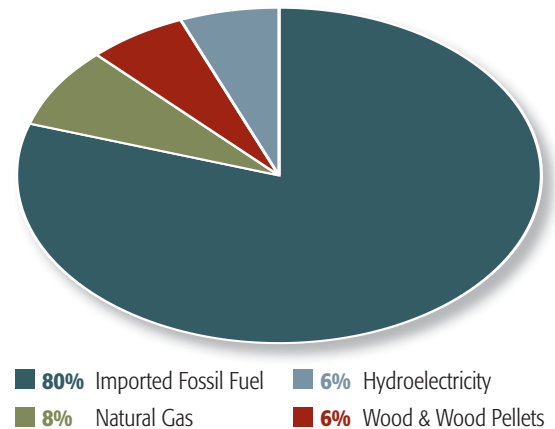
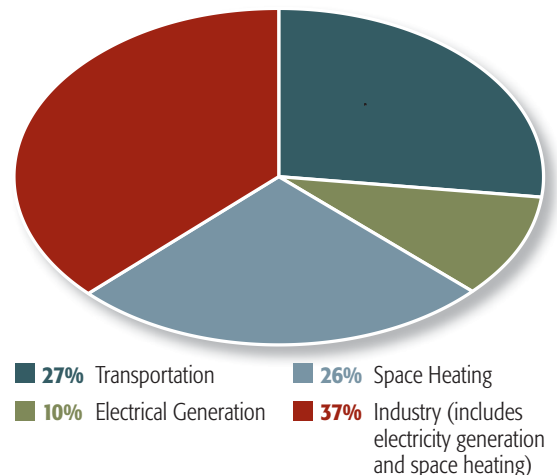
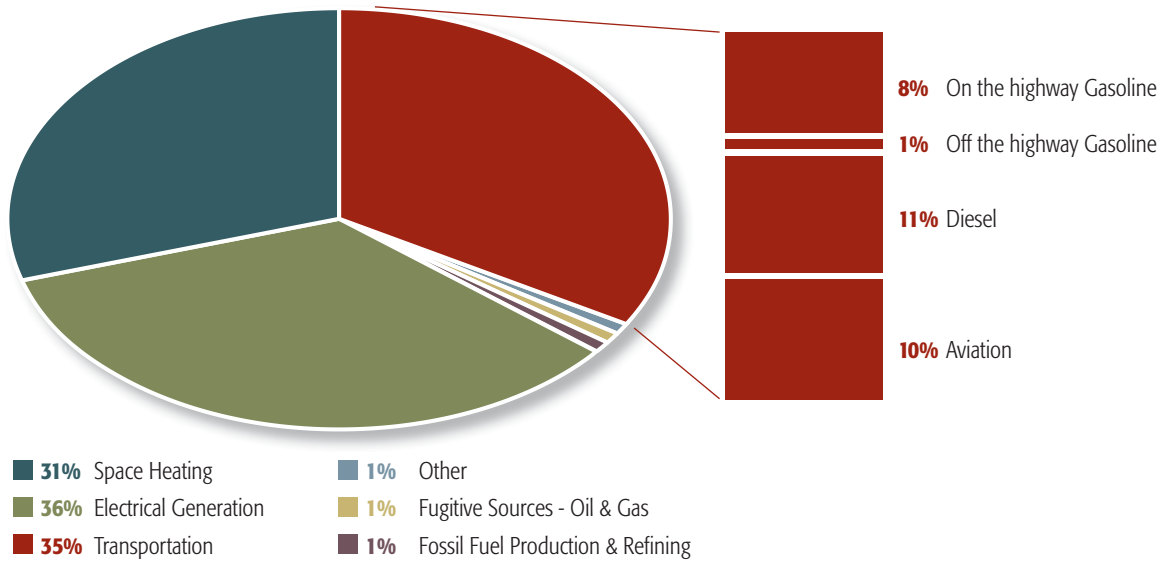


Figure 2 Energy Use in 2009/10 (18.7 million GJ)



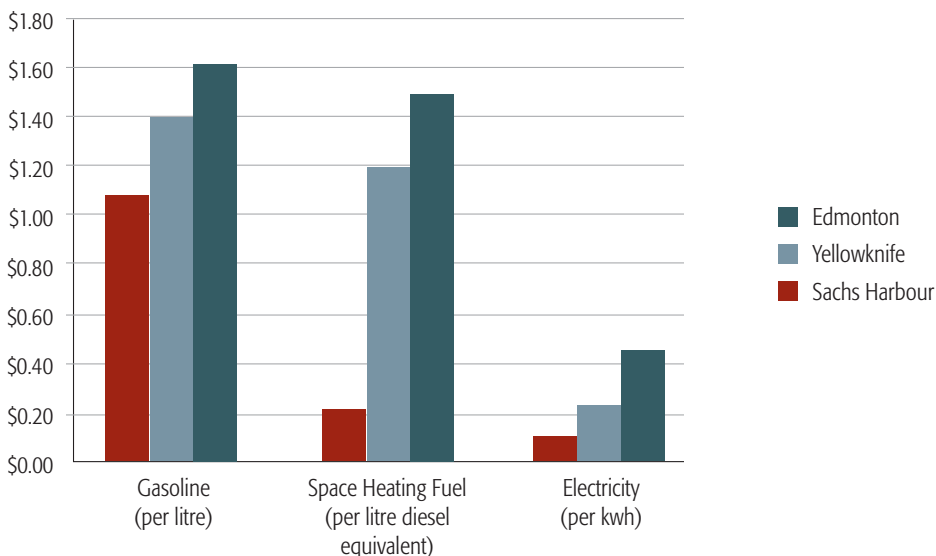
Greenhouse gas emissions (GHG) in 2010 were 1,325 kilotonnes (kT), which results almost entirely from electricity generation, space heating, and transportation. GHG emissions are shown in Figure 3.

Figure 3 Greenhouse gas emissions 2009/10



Energy costs in the NWT are substantially higher than in other parts of Canada. To demonstrate this, energy costs in Yellowknife, Sachs Harbour, and Edmonton are compared in Figure 7. Prices for heating fuel use heating oil in Yellowknife and Sachs Harbour, and natural gas in Edmonton.

Figure 4 Energy costs in Yellowknife and Sachs Harbour compared to Edmonton, AB



2.2 The Five Pillars of the 2007 Energy Plan

The 2007 Energy Plan, and the Energy Priorities Framework of 2008 contained action plans built around five key areas (known as 'The Five Pillars'):

- 1) Energy Conservation and Efficiency;
- 2) Research Emerging Technologies;
- 3) Policy and Planning;
- 4) Energy Development and Supply; and
- 5) Reduce GNWT Energy Use.

These five pillars, along with the vision and principles outlined in the 2007 Energy Plan make up the policy framework that guides GNWT investments in energy. As part of the Energy Plan renewal process, this policy framework needs to be reviewed.



2.2.1 Investments

A summary of the GNWT's energy-related investments by pillar, between 2008 and 2012, is provided in Figure 5, while spending by region is shown in Figure 6.

Figure 5 Division of GNWT expenditures by area or "pillar", 2008/09 to 2011/12 (\$50 million)

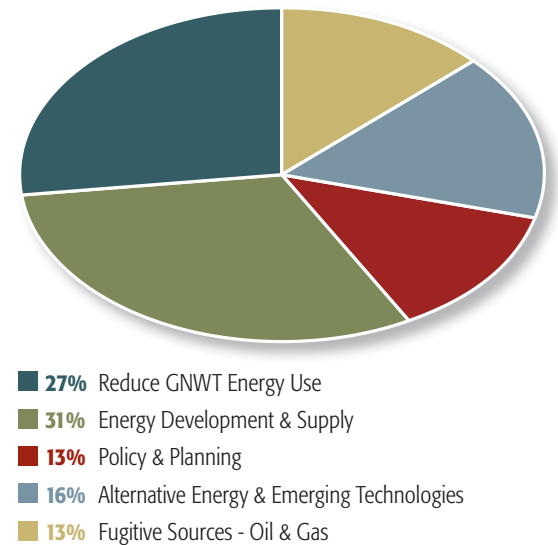
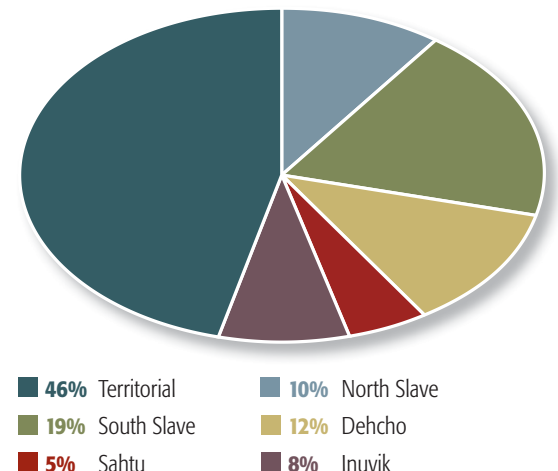


Figure 6 Division of GNWT expenditures by region, 2008/09 to 2011/12 (\$50 million)



While the chart above appears to show a “regional imbalance” with respect to GNWT expenditures, it should be noted that a number of territorial initiatives were community focused, including the Electricity Review which resulted in rationalized – and substantially reduced – electricity rates in many of the smaller NWT communities.

2.2.2 GNWT Strategies

A variety of GNWT strategies have flowed from the 2007 Energy Plan. The GNWT developed and released the NWT Greenhouse Gas Strategy (2007) as a companion document to the 2007 Energy Plan. This strategy established targets for reductions in GHG emissions by the GNWT and encouraged emissions management efforts in other sectors of the economy. More recently, A Greenhouse Gas Strategy for the NWT 2011-2015 was released to help refocus emissions reduction efforts. In addition, NT Energy released its Strategic Plan 2012-2014 earlier this year. The GNWT released the NWT Biomass Energy Strategy in 2010, and is currently updating that document. A Solar Strategy is being developed as well. These policy initiatives provide an indication of the scope that needs to be covered by a new 2013 Energy Plan.

2.3 Results - Successes and Challenges

Successes – There have been some key successes in recent years including a substantial increase in the use of wood pellets for heating, progress in advancing

potential hydro and transmission projects, and improved programs and actions on energy efficiency for government assets, businesses and residents. Wood pellets are now used for heating in almost all communities with all-season road access, and pellet supply chains are being established in some of the more remote communities. **The success of these initiatives can be measured in GHG reductions; the GNWT adopted a target to reduce its direct emissions by 10% below 2001 levels and by 2011 had achieved a 30% reduction.**

The GNWT also made significant progress in reducing the cost of living in many of our smaller communities through a re-structuring of electricity rates, making them more equitable across the NWT.

Challenges – Distance, isolation, and the small scale of our communities are primary challenges to implementing energy projects and programs in the NWT. Other challenges include the high cost of transporting people and goods, a harsh climate, a short construction season, and a lack of skilled tradespeople in small communities.

More specifically related to energy, recent challenges include diminishing natural gas resources in Inuvik and Norman Wells, slow progress in the development of new hydro resources, and the difficulty in supplying wood pellets to remote communities. All of these factors contribute to energy costs that remain relatively high.

Participating at the official commissioning of the 60 KW solar energy system in April 2012 are (from left) MLA Kevin Menicoche; NTPC Chair Brendan Bell; Michael Miltenberger, Minister Responsible for NTPC; Dave Ramsay, Minister of Industry, Tourism and Investment; Sean Whelly, Mayor of Fort Simpson; Premier Bob McLeod; and Emanuel DaRosa NTPC President and CEO.



3 Your Chance To Comment

Ensuring that NWT communities, businesses and residents have access to reliable and affordable energy services, while reducing impacts on the natural environment, is a priority for the GNWT. Given other priority areas and a tight fiscal situation, the GNWT needs to carefully consider which energy-related projects and programs to invest in over the next several years.

This section of the discussion paper provides some background on key energy issues and poses a series of questions for public comment on the issues of a) the GNWT's policy framework, b) energy supply, c) energy demand and d) developing criteria for investing in energy projects and programs.

3.1 Energy Planning

The GNWT's efforts and investments in energy have been guided by the following Vision and Principles that were established under the 2007 Plan. The Vision is intended to represent the long-term aspirations of residents and communities. The Principles are used to guide day-to-day and long-term decision-making.

Vision:

The GNWT encourages and supports development of NWT energy resources that contribute to a lasting legacy of affordable energy for all residents, generates resource revenues to northern governments and demonstrates a strong commitment to protecting the natural environment.

Principles:

- i. Reliable and affordable energy should be available in all NWT communities.

- ii. The use of northern renewable energy for industrial developments should be promoted in a manner that provides for a lasting legacy of affordable and sustainable energy for the benefit of all residents.
- iii. Energy development and management decisions should maintain the integrity of the natural environment and recognize the absolute importance of the long-term protection of these natural systems to the economic, social and cultural well-being of NWT residents.
- iv. Regulatory processes related to the development and provision of energy in the NWT should be simply structured and as efficient as possible, while maintaining transparency and accountability.
- v. Aboriginal equity positions in large-scale energy development projects on traditional Aboriginal lands should be encouraged and supported.
- vi. The NWT Power Corporation should remain in public control, recognizing the benefits of a public corporation in providing affordable power and promoting a lasting legacy of renewable energy in the NWT.
- vii. The GNWT should demonstrate leadership by diligently and responsibly taking actions to reduce its own consumption of energy.

There have been some noteworthy changes since the publishing of the 2007 Energy Plan. Oil prices have increased, thus raising the cost of living in the NWT. Many analysts believe the price will continue to go up, further impacting the cost of living in our communities. Natural gas prices in North America

have declined, while supply has substantially increased, leading many to believe that natural gas will play a significant role in the transition to a lower carbon economy. Internationally and between regional blocks of North American provinces and states, an increased focus on the impacts of climate change has led to assigning a cost to carbon emissions in a more concerted effort to reduce GHG emissions.

Question #1:

Are the Vision and Principles described above still relevant? Are there elements of this energy planning framework that you think should be re-examined or revised?

3.2 Energy Investment Criteria

The above section, including the Vision and Principles, speak to the values NWT residents want to see reflected in the GNWT approach to

energy. Taking this a step further, with limited funds, choices need to be made regarding many energy projects and programs. For example, what proportion of available funding should go towards rebate and incentive programs to promote energy efficiency? How much should be invested in local and renewable energy supply options? Emerging technology?

Some key factors or decision criteria are:

- Business case/life cycle cost analysis
- GHG emissions reduced
- Local economic development or Aboriginal partnership opportunities

Other decision criteria that could be considered include:

- Safety and reliability
- Financial risk including future fuel price risks



Snare Rapids.

- Community self-sufficiency
- Transferability and scalability with respect to other NWT communities
- Time required for project implementation.

Investments in energy programs and projects need to be made in all of the 'energy pillars' discussed above and across all of the communities in the NWT. Achieving the right balance is the key. Clear and concise evaluation criteria could help the GNWT to achieve that balance and make decisions regarding energy project and program funding more transparent and easily understood by NWT residents.

Reviewing some of the results of past investments in energy programs and projects can help inform this discussion. Further detail can be found in the NWT Energy Report at www.nwtenergy.ca.

Question #2:

What are the key decision criteria that the GNWT should use when deciding where to spend a limited budget for energy projects and programs?

3.3 Energy Supply

Examining energy supply options and moving towards greater use of local and renewable energy is a priority for the GNWT. Sections 3.3.1 and 3.3.3 below outline some of the issues involved related to the development of energy supply options for electricity generation and space heating.

3.3.1 Electricity Generation and Transmission

Providing electricity that is affordable, reliable, and which has minimal environmental impact is a challenge in our territory of small, remote communities. A harsh climate adds to the challenge of constructing and maintaining infrastructure.



Reservoir on Snare River.

As reflected in the preceding Ministers' Message the GNWT continues to investigate opportunities to expand the supply of hydroelectricity (further detail in the NWT Energy Report at www.nwtenergy.ca). The lowest cost electricity produced in the NWT is supplied by hydroelectric dams that were developed by industry to serve mines that no longer operate. Where hydroelectricity is not available, most communities rely on diesel generators. Norman Wells and Inuvik have used natural gas for heating and electricity generation, but the supply situation moving forward is not clear.

Displacing imported oil with local and renewable forms of energy is a key goal and this includes building upon our existing hydro legacy. Leveraging the power requirements of resource development could provide the impetus for larger hydro developments. If northern companies and Aboriginal governments could become the power providers of choice for resource development, the business opportunities from providing northern hydro power could provide significant local benefits from non-renewable resource development.

Replacing imported oil and other services with local supply and services is the foundation for any strong, sustainable economy. Keeping dollars inside the NWT is a key objective in the NWT Energy Plan, and has linkages to the NWT Economic Opportunities Strategy and the Mineral Development Strategy currently under development. These Strategies will be released in early-to-mid 2013.

Expanding our hydro capacity represents one opportunity, but it isn't the only one available. Expanding the hydro transmission grid to other communities is possible and work has been done to examine the feasibility of extending hydro transmission from the Snare hydro system to the



High-voltage substation.

community of Whati in the North Slave region and from the Taltson system to Fort Providence.

As well, intermittent sources such as solar and wind can play a role in our electricity generation. The recently completed Fort Simpson solar project has exceeded expectations and there are good wind regimes in a number of communities. As the technology for electricity storage improves, these sources could play a significant role in displacing diesel generation. For remote sites such as camps, lodges, park facilities and highway maintenance camps, solar and wind generated electricity have already proven to be competitive with or less expensive than diesel-fired generation. GNWT programs have supported the installation of many systems to help reduce diesel consumption, costs, and GHG emissions at these remote facilities.

The Alternative Energy Technologies Program provides partial project funding to assist communities, residents, organizations, and businesses to cover the cost of installing wind and solar photovoltaic systems, amongst other technologies. The aim of this program is enhance understanding and awareness of these technologies while achieving environmental benefits. As fossil

Blades for Diavik's wind farm were the longest loads ever transported over the ice roads: 33 meters. Fuel for transportation represents nearly 30% of all energy consumed in the NWT.

(Courtesy Diavik Diamond Mine.)



fuel prices continue to rise and the cost of system components become more affordable, these technologies will become more cost competitive.

3.3.2 Transportation

Fuel used for transportation purposes represents nearly 30% of all energy consumed in the NWT. As well, the high cost of transportation contributes to our high cost of living. That said, near term options for fuel switching in the NWT transportation sector are very limited. Natural gas may be a solution in the future. Compared to oil, natural gas creates less GHG emissions and is currently much less expensive. Some major petroleum producers are planning to develop liquefied natural gas (LNG) filling stations along major trucking corridors in Western Canada. The GNWT continues to monitor progress in this area.

Question #3:

What is your view on energy supply options in the

NWT? Which options should the GNWT prioritize and why?

3.3.3 Space Heating

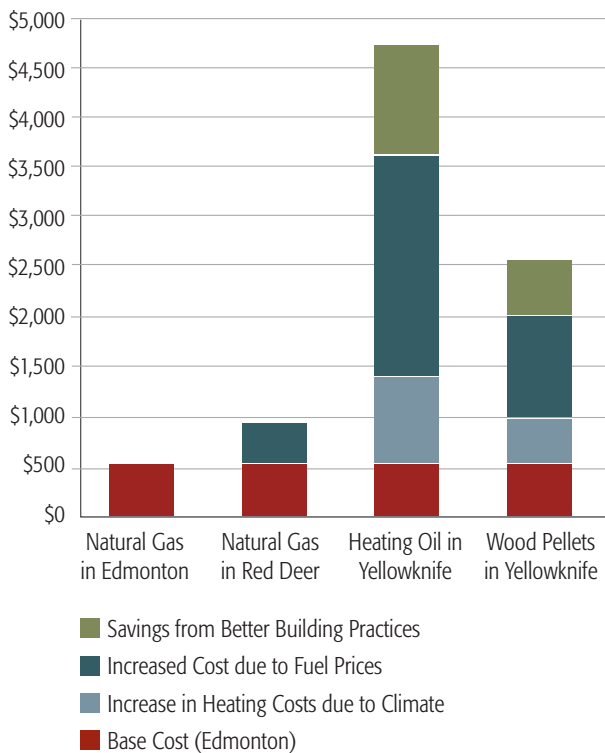
Due to our cold climate, the space heating of homes and buildings accounts for a large portion of the total energy used in the NWT each year. Oil-fired heating systems are most common in NWT communities, but natural gas, wood and propane are also used where available.

Our current reliance on fossil fuels for heating impacts the environment and our cost of living. Space heating with fossil fuels accounts for approximately 30% of the NWT's annual GHG emissions, and results in high heating bills for NWT homeowners and businesses. Figure 7 shows typical annual home heating costs in Edmonton, Red Deer, and Yellowknife. The price increase relative to Edmonton is broken down into portions due to higher fuel costs as well as the more

severe winter climate. The energy savings of better building practices in the NWT are also shown.

Figure 7 Heating cost comparison for a standard house based on 2012 fuel prices

Since 2006 the use of biomass, including wood pellets and firewood, has increased for space heating



of homes, businesses and government facilities. The combustion of biomass is considered GHG neutral, and wood pellets in the NWT are currently much less expensive than heating oil. As a result of this, and efforts resulting from the 2010 NWT Biomass Energy Strategy, the use of biomass is increasing in communities connected to the all-weather highway system and is being actively investigated and pursued in many off-road communities.

The NWT's current consumption of wood pellets is estimated to be in the range of 12,000 to 15,000 tonnes per year, all of which is imported from suppliers in British Columbia or Alberta. The NWT's forest resources, which cover about 33 million hectares, could support local production of wood pellets. This could provide much-needed economic activity and employment in NWT communities.

Natural gas shortages in Norman Wells and Inuvik have highlighted the need to consider alternative energy options for space heating as well as for electricity. Developing new local sources of natural gas, establishing a wood pellet supply chain, or importing liquefied natural gas are all options that are preferable to heating oil.

Question #4:

Should the GNWT continue to investigate and pursue new options for space heating in the NWT? What are your thoughts regarding potential options?

3.4 Energy Demand, Conservation and Efficiency

Conservation and efficiency can help reduce fossil fuel use and GHG emissions, and help offset rising energy costs. As a first step, focussing on conservation and efficiency is almost always the most effective option for reducing energy costs and GHG emissions.

The GNWT has invested heavily in energy efficiency and conservation through programs to upgrade residential housing and government buildings, to replace old appliances and equipment with more efficient models, to provide energy audits and funding to businesses, and to reduce energy use in assets owned by community governments and not-for-profit organizations. The Arctic Energy

Alliance – a not-for-profit organization with offices in 5 communities in the NWT – manages many of the energy conservation and efficiency programs funded by the GNWT.

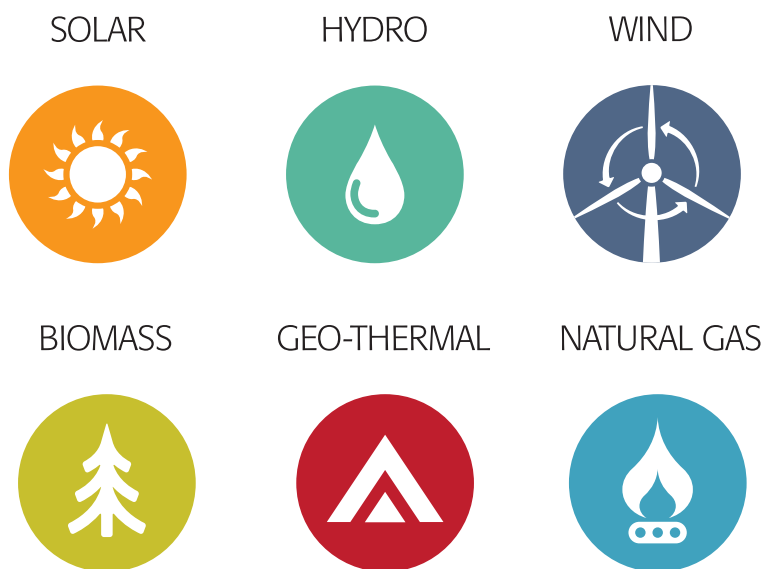
Most actions to promote energy efficiency and conservation are focused on the buildings sector. Transportation consumes a significant portion of energy used in the NWT, but as discussed earlier, the options to make a meaningful impact in transportation efficiency are limited. Regulations and standards related to vehicles and air travel are mostly implemented at a national level, while transportation within communities is largely controlled by municipalities.

Rebate and incentive programs currently funded by the GNWT are:

- EnerGuide for Houses Program: offers energy audits for residential buildings.

- Energy Efficiency Incentive Program: offers rebates for the purchase of new energy efficient appliances as well as building components for residential building upgrades.
- Commercial Energy Conservation and Efficiency Program: offers free energy audits to NWT businesses as well as partial project funding for recommended retrofits.
- Energy Conservation Program: provides partial funding for projects which reduce energy consumption in assets owned by communities and other organizations.

The level to which electricity is subsidized in the NWT is also an example of an incentive program. Residents of the NWT pay Yellowknife electricity rates if they consume less than 1000 kWh per month in winter, and less than 600 kWh per month in summer. The rise in cost after these limits



provides an incentive for residents to conserve and use their energy efficiently to stay under the subsidized limit.

To enhance energy efficiency and conservation, governments can also use standards and regulations, which can have more significant impacts than incentives because of higher adoption rates. Regulations and standards can cover appliance energy use, buildings, or vehicles. The province of British Columbia, for example, regulates various appliances and equipment through their provincial Energy Efficiency Act. Canada also has passenger vehicle and light duty truck emissions regulations for manufacturers and importers. The average emissions produced from a light duty vehicle sold in Canada in 2016 will be 25% lower than one sold in 2008.

Question #5:

What further steps could the GNWT take to promote efficiency and conservation for NWT residents, businesses, community governments, and organizations? Where is assistance most needed and most effective?

3.5 Other Issues

This discussion paper poses many questions, but does not cover all topics related to energy and energy policy in the NWT. Energy is a vast and complex sector, and it would be difficult to have an exhaustive coverage of the issues. If you have views or comments not covered by the questions in this document, please submit them.

Additional detail on the results of past GNWT energy projects and programs, as well as previous energy policy initiatives can be found as follows:

NWT Energy Report
2007 NWT energy Plan
NWT Electricity Review
NT Energy Corporation Strategic Plan
(www.nwtenergy.ca)

Energy Conservation Report 2011
Biomass heating Project Description
Biomass heating System performance Report
Energy Conservation Design in GNWT Buildings
(<http://www.pws.gov.nt.ca/publications/index.htm>)

NWT Greenhouse Gas Strategy
NWT Biomass Strategy
(<http://www.enr.gov.nt.ca>)

GNWT Energy Programs
(<http://www.enr.gov.nt.ca>) (<http://www.aea.nt.ca/>)

4 Submitting Your Comments



The GNWT wants to hear your views on energy in order to create the 2013 Energy Plan. Your comments will help shape the Energy Charrette/workshop to be held in late November and will be included in a final report that summarizes the Charrette and all feedback received. Ultimately, and most importantly, comments received will influence the new 2013 Energy Plan slated for release in March 2013.

Given that public input will be used to develop the Charrette and the final report following the Charrette, all feedback must be received by the GNWT before November 15, 2012.

Feedback can be submitted in a number of ways:

1. By telephone: call 1-867-873-7360 to voice your views;
2. By fax at: 1-867-873-0101;
3. By email: send your comments to nwtenergycharrette@gov.nt.ca;
4. By attending one of the public sessions during the Charrette. Visit www.nwtenergy.ca; in early November to learn more about public sessions being planned; or
5. By mail:

Energy Planning Division
Department of Industry,
Tourism and Investment
Government of the Northwest Territories
P.O. Box 1320
Yellowknife, NT X1A 2L9

Feedback can also be provided through the completion of a brief online survey that can be accessed via www.nwtenergy.ca.



Diavik Diamond Mine installed the NWT's first large-scale wind project in 2011. Four 2.3 megawatt turbines were constructed providing a capacity of 9.2 megawatts. The renewable energy generation displaces about 9% of Diavik's diesel generation.
(Courtesy Diavik Diamond Mine.)



www.nwtenergy.ca