NORTHWEST TERRITORIES
POWER
CORPORATION

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January 20, 2010

Mr. Joe Acorn, Chairman
NWT Public Utilities Board
#203-62 Woodland Drive
Hay River NT X0E 1G1

Dear Mr. Acorn:

Re: Alternative Energy, Demand Side Management and Energy Efficiency Biannual Report – December 2010 Update

In accordance with Directive 51 of Decision 13-2007, NTPC submits its Alternative Energy, Demand Side Management and Energy Efficiency Biannual Report. This update covers the period up to December 31, 2009.

If you have any questions regarding the above, please call me at (867) 874-5325.

Regards,

Terence Courtoreille, Manager
Financial Planning & Coordination

cc: Judith Goucher, Director Finance & CFO

Attachment

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Alternative Energy, Demand Side Management and Energy Efficiency

Biannual Report, December 2009

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1.0 INTRODUCTION

In Decision 13-2007 with respect to the Northwest Territories Power Corporation's ("NTPC") 2006/07 and 2007/08 Phase I General Rate Application, the Public Utilities Board ("PUB") issued Directive 51 which stated:

The Board directs NTPC to provide the Board with biannual reports that discuss the following:

1. The efforts and progress of NTPC and its affiliates in pursuing alternative energy, demand side management and energy efficiency projects;
2. Justification for any projects being pursued by NTPC's affiliates rather than NTPC;
3. Funding programs that are, or will be, available and any efforts and progress by NTPC and its affiliates in obtaining funding.

This report has been prepared to comply with Directive 51 from Decision 13-2007. It is an update to the last report dated June 30, 2009 and covers the period from July 1, 2009 up to December 31, 2009.

1.1 OVERVIEW

The Corporation undertakes numerous activities related to alternative energy, demand side management and energy efficiency projects each year. In order to provide a comprehensive response to the Board's directive, this report is organized according to the following headings:

- **Alternative Energy Projects**: This section reviews all projects investigated or undertaken by NTPC or its affiliates related to alternative methods of generation.

- **Demand Side Management/Energy Efficiency Projects**: This section reviews all projects investigated by NTPC or its affiliates related to demand side management (DSM) or improving energy efficiency.

The alternative energy, DSM or energy efficiency projects outlined within this report are initiatives undertaken either solely by NTPC or its affiliates, or in partnership with other organizations. The factors that are taken into consideration when determining which business entity undertakes these projects include:

- If project risk is high and the potential for downside to regulated customers is significant, then the project may be undertaken by an affiliate so as not to expose the regulated customer to a liability or cost should the project be unsuccessful.
- Where a project will likely converge with operations that serve regulated customers, then that project may be undertaken by NTPC.
- Where a project diverges from or is unrelated to the current service to regulated customers, then such projects may be undertaken by an affiliate.
- Where NTPC does not have access to a particular business opportunity but an affiliate does, then that project may be undertaken by the affiliate. An example of this would be Federal Government funding for alternative energy projects where a Crown corporation is not eligible to participate.
- Where a project requires extensive third party equity, joint venture partners, or other forms of financing such that NTPC is not in a majority position, then the project may be undertaken by an affiliate.
- Legislative changes or executive order from the GNWT may also dictate which entity undertakes the project.

NTPC frequently liaises with the GNWT who has staff dedicated to developing funding programs targeted at alternative energy, DSM or energy efficiency projects. In addition to these efforts, the GNWT is also aware of other funding programs that may be available through other government agencies. In most cases, NTPC is not eligible for government funding or the tax credits offered through these programs because it is a Crown corporation. Regardless, this report identifies on a project-by-project basis where NTPC or its affiliates have applied for funding, received funding or assisted a third party in obtaining funding in support of an alternative energy, DSM or energy efficiency project.

2.0 ALTERNATIVE ENERGY PROJECTS

The Corporation's primary goal in pursuing alternative energy projects is to continue providing safe and reliable service at the least cost to regulated customers over the long-term. Many alternative energy applications are largely untested in the extreme operating environment faced by NTPC. As a result, NTPC often pursues small scale demonstration projects in order to test new technologies prior to implementing them on a larger scale. This practice ensures these technologies can be adequately serviced and operated in our environment without adverse effects to the Corporation's customers. NTPC's commitment to alternative energy includes the following activities:

- The Corporation will stay knowledgeable of new technologies that may benefit its core business. The Corporation will study these new technologies as they emerge and analyze their suitability to the North including technical feasibility, "green benefits", and economic costs and benefits.
- The Corporation will not act as a pure researcher of emerging technologies that are not already on the market with proven technological and economic performance. Rather, it will invest in demonstration projects to test how proven technologies work in the northern environment.

- The Corporation will not undertake alternative energy projects that do not lower its costs in the long term (as compared to the costs of diesel), unless it has guarantees of operational subsidies that make up the cost differential or PUB approval to recover these costs.
- The Corporation will seek external funding (from all levels of government) for testing, developing, implementing and maintaining ongoing operations for all alternative energy projects.
- The Corporation's preference is to encourage private developers, manufacturers or local interests to undertake and fund the projects and take the construction, technological and operational risk. In cases where the Corporation undertakes any projects directly it will seek approval from the PUB (i.e. a General Rate Application or a Major Project Permit Application).
- In order to maintain a safe, reliable source of generation, the Corporation will maintain existing or modified diesel plants as the main source of generation or as back up to new technologies.

The following sections outline the alternative energy projects currently being investigated or pursued by NTPC or its affiliates. It is important to note that not every alternative energy project investigated by the Corporation will proceed to a capital investment. Where capital projects are developed, these will be reviewed during future General Rate Applications or Major Capital Project Permit Applications as appropriate.

2.1 NWT Hydro Strategy

Efforts and Progress

The GNWT has approved funding for the implementation of the hydro strategy with NT Hydro as the lead organization. NT Hydro is in the process of hiring two additional staff members to assist the one current staff member with the implementation of the strategy. The Sahtu Hydro Symposium being held in Deline in early 2010 (see Section 2.14) will be an opportunity to begin the implementation of this strategy.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative that involves the participation of NT Hydro. NTPC will, as will other companies, benefit from the information obtained.

Funding

The GNWT's Energy Priorities Investment Plan has identified $1.5 million a year for the next three years to fund the implementation of the hydro strategy developed by NT Hydro for the GNWT.

2.2 Snare Hydro Development

Efforts and Progress

Any development of new hydro on the Snare system, which is in the Tli Cho land claims area, will require their participation and, as such, NTPC continues to work with the Tli Cho Investment Corporation (TIC) on identifying potential future hydro sites. TIC has completed some preliminary studies on Site 7 and two studies on the La Martre River (refer to Section 2.13). Preliminary talks have been held regarding which party will undertake this project. Currently, the La Martre River project is the more attractive of the two options.

Justification for Affiliates vs. NTPC Pursuing This Project

At this time, NTPC is pursuing this project as it converges with operations that serve its regulated customers. Depending on developments with the TIC, this may become a 100% aboriginal development with NTPC participating as a customer or a joint venture with an affiliate.

Funding

Funding for the original Site 7 feasibility studies was provided by NTPC. Further funding for regulatory approval or development of this project has not yet been secured

as it is unknown who will undertake this development. Once this is determined, the proponent responsible for the development of new hydro will be responsible for securing funding either from government or on its own merit.

TIC has funded its preliminary studies on Site 7 and the La Martre River with GNWT assistance. With NTPC support, TIC is seeking additional government funding for further feasibility studies on the La Martre River site.

2.3 In-stream Hydro Generation

Efforts and Progress

After negotiating a streamlined approach, regulatory approval was received from the Mackenzie Valley Land and Water Board and the Department of Fisheries and Oceans in Spring 2009. However, the Corporation did not receive approval from Navigable Waters Protection Program (Transport Canada) until November 2009. This regulatory delay was outside the control of NTPC and has caused the project to be delayed until the 2010/11 season. The turbine will be installed once the ice has left the river in 2010. NTPC continues to keep the Village of Fort Simpson and the Liidlii Kue First Nation, both of whom are supportive of the project despite the 1-year delay, abreast of the status of the project.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing this project. It converges with operations that serve its regulated customers.

Funding

The assessment was funded by the GNWT and NTPC. For 2009/10, NTPC received a GNWT contribution of $175,000 from the GNWT's Energy Priorities Investment Plan to fund the installation of the 25 kW turbine to be tested as a demonstration project in Fort Simpson. Additional funding is being discussed. Funding obtained in 2010/11 will be

used for hydrological assessments at other sites and to evaluate the demonstration project in Fort Simpson. If the demonstration project proves successful, funding for 2011/12 will be used to install an additional turbine at another appropriate site, based on the results of the hydrological assessments.

2.4 Wind Energy Deployment

Efforts and Progress

The GNWT demonstration project in Tuktoyaktuk, in partnership with the Tuktoyaktuk Power Corporation (TPC) - a joint venture between Tuktoyaktuk Development Corporation and Dowlands Construction - will provide operational and maintenance experience with wind-diesel systems. To date, an agreement with the GNWT for funding has been signed. NTPC is supporting this project by providing technical information to TPC to assist in the design of the project. Regarding a Power Purchase Agreement, NTPC has met with TPC to discuss principles and is currently reviewing a draft agreement.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is involved in this project because it converges with operations that serve its regulated customers. NTPC's role in this initiative will be to purchase the electricity from the wind generators (which will partially displace current thermal generation), to provide technical assistance and to perform the necessary interconnection to the Corporation's distribution system.

Funding

TPC and the GNWT are funding this project. NTPC's costs (to construct the distribution line and the control systems in the plant) will be borne by the project proponents.

2.5 Residual Heat Recovery

Efforts and Progress

The GNWT's Department of Public Works designed and installed a residual heat recovery system in Wha Ti for its school. All costs were borne by the GNWT. The school received the heat from NTPC at no charge. The customer's facilities related to this project have been inoperable in recent years. Public Works and Services completed some work in the summer of 2009 and the system was revisited by an NTPC representative in October 2009 for a preliminary assessment. At this point in time, the system is still inoperable and will remain so until funding can be secured to conduct an in-depth cost-benefit analysis of how best to proceed. Furthermore, if any of the three hydro options to serve the community of Wha Ti are successful, a residual heating system would not be possible since the diesel plant would become a stand-by plant.

In 1994 the community of Ulukhaktok, with assistance from the GNWT, built a system to provide heat from the NTPC power plant to three community buildings adjacent to the plant. The customer's facilities related to this project are now at the end of their useful life and are inoperable. In 2010, NTPC plans to undertake a study (funded by the GNWT) of its plant in Ulukhaktok and potential customers to estimate the cost of providing residual heat and the related revenues in doing so.

The Corporation also completed analyses of existing power generating infrastructure and potential heat loads that could be served by a residual heating system in the communities of Inuvik, Fort Liard and Fort Simpson. During 2009/10, the community of Fort Liard has been the focus for designing a residual heating system to provide heat to the Hamlet office, fire hall, garage, and school. To date, the system design is nearly complete and construction is expected to start in May or June of 2010, depending on the ground conditions. Draft heat agreements between NTPC and the Hamlet and Divisional Educational Council are also being reviewed. Contingent upon securing

GNWT financing, NTPC will proceed with Inuvik in 2010/11 and Fort Simpson or Ulukhaktok in 2011/12.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing this project. It converges with the existing business of NTPC and the regulated customer is protected from risk through the government contribution of project funding.

Funding

The Corporation has received a capital contribution for 2009/10 from the GNWT of $1.35 million that, coupled with a $100,000 corporate contribution, will fund the development of the residual heat system in Fort Liard and will fund a study of the NTPC plant in Ulukhaktok and potential customers to estimate the cost of providing residual heat in that community. $800,000 of this funding has been deferred to 2010/11 on account of the change in timing of the construction of the Fort Liard residual heating system.

2.6 Converting Residual Heat to Electricity

Efforts and Progress

Nothing new to report.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing this project.

Funding

None.

2.7 Wha Ti Transmission Line

Efforts and Progress

In October of 2009, a Light Detection and Ranging (LIDAR) survey was completed. The purpose of this survey was to map out the contours of the potential transmission line route from the NTPC Snare hydro facility to the community of Wha Ti via the potential La Martre Falls hydro site. As was mentioned in the December 2008 and June 2009 reports, the community of Wha Ti is also investigating the option of a mini-hydro plant and the Tli Cho Investment Corporation is investigating a larger hydro facility (see Section 2.13). The decision as to which option will be pursued rests with the community.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing the transmission line option as it converges with its existing business and power would be supplied from Snare hydro.

Funding

The GNWT has agreed to provide $10,000 from its Energy Priorities Investments Plan to fund the LIDAR survey for the transmission line.

2.8 Lutsel K’e Mini Hydro

Efforts and Progress

The background work described in the June 2009 update has been completed and a cost estimate and work plan to conclude detailed engineering design for the transmission line, access road and power plant was received in mid-December. Information gathering necessary to apply for regulatory applications and an economic analysis of the project were also completed at that time. Upcoming work includes a detailed economic analysis of the project and to work with the community of Lutsel K’e to determine the business case.

Justification for Affiliates vs. NTPC Pursuing This Project

This project is currently being led by NTEC (03) because of its work with the community on the Taltson Hydro Expansion Project. NTPC will be involved if the project proceeds either by way of a purchase power agreement, as a partner, or as the proponent.

Funding

At the end of the summer of 2009, it was recognized that the 2009/10 budget of $250,000 from GNWT's Energy Priorities Investments Plan would not be sufficient to conclude the detailed engineering and permitting aspects of the project. Working with the Department of Industry Tourism and Investment, additional funding of $500,000 was obtained in 2009/10 to conclude this work. Half of this funding has been applied for through the Federal Eco Energy Climate Change Fund and indications are positive that this funding will be approved in the near future. In the meantime, the GNWT has agreed to advance the federal portion until that funding is received.

2.9 Natural Gas Conversion

Efforts and Progress

Construction of the Mackenzie Gas Project would potentially result in access to natural gas for communities and industries throughout the Mackenzie Delta and Valley. This offers the NWT an opportunity to convert the power generation in some of these communities to this clean and potentially less costly fuel supply.

The overall objective of this initiative is to fully explore the potential for natural gas conversion in the NWT and provide the technical basis for a policy decision by the GNWT on the appropriate next steps in the initiative. Currently, the GNWT is also going through the Request for Proposal process to study the cost of converting the power plant in Fort Simpson to natural gas.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative in which NTPC is playing a supporting role.

Funding

This is a self-funded GNWT initiative.

2.10 Deep Geothermal Electricity Generation

Efforts and Progress

Because of high bottom hole temperature indications from historical gas wells in the Deh Cho area, a group of local businesses has expressed interest in developing geothermal capacity in the region. In response to community interest, the GNWT Department of Environment and Natural Resources organized a community workshop in September 2009 which was led by the Canadian Geothermal Energy Association (CanGEA) to help educate the community and facilitate discussion. NTPC continues to monitor this technology and support the GNWT in its efforts to study this potential; as such, it participated in this community workshop.

Also, NTPC has expressed its support for this technology by preparing a letter of support to Borealis GeoPower Inc., a geothermal power company investigating a project in Fort Liard with the Aco Dene Koe First Nation, so that the company can obtain funding through the Clean Energy Fund, a Federal funding initiative which focuses on the development of clean energy technologies. The purpose of this demonstration project is to investigate how a northern community can use a geothermal source to generate electricity and heat, thereby reducing the entire community's fossil fuel demand and energy costs.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative in which NTPC is playing a supporting role. The proposed demonstration project in Fort Liard is being led by Borealis GeoPower Inc. and the Aco Dene Koe First Nation. NTPC is playing a supporting role.

Funding

This is a self-funded GNWT initiative.

Regarding the demonstration project being initiated by Borealis GeoPower Inc. and the Aco Dene Koe First Nation, this project was one of 19 selected in December 2009 in a response to a call for proposals under the Renewable and Clean Energy portion of the Clean Energy Fund. The next step is for the proponents to begin negotiations with the federal government toward a formal contribution agreement to set the conditions under which funding will be delivered. Funding in the range of $10 - $20 million is expected.

2.11 Micro-Turbines in Inuvik

Efforts and Progress

NTPC continues to monitor the performance of the micro-turbines. As such, a life-cycle analysis of these two natural gas fired units was completed since the last update to determine their economic performance over the past seven years.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing this initiative as it converges with operations that serve its regulated customers.

Funding

This initiative is being funded by NTPC.

2.12 Taltson Hydro Expansion Project

Efforts and Progress

The proposed Taltson Hydro Expansion Project is a new 36 MW hydro plant located at Twin Gorges on the Taltson River. This project is being pursued by Dezé Energy Corporation (DEC), which is comprised of the NWT Energy Corporation (03) (NTEC(03)), the Akaitcho Energy Corporation, and the Métis Energy Company Limited.

Continuing from the June 2009 update, the Mackenzie Valley Environmental Impact Review Board (MVEIRB) is conducting its regulatory review of the Taltson Hydro Expansion Project. The deadline to receive Information Requests from interested parties was extended twice and was eventually replaced with a roundtable technical hearing on October 1, 2, and 5 of 2009 (four months after the initial deadline). A submission responding to the 69 commitments DEC was asked to address at that technical hearing was prepared and delivered to MVEIRB on October 30, 2009. Any outstanding concerns will be addressed during the MVEIRB public hearings which will be held in January 2010. Following the public hearings, MVEIRB is expected to issue a final report with recommendations to the Federal minister in April 2010. At that point, DEC will await a decision from the Federal minister on whether the project is approved.

Concurrent steps include the finalization of Project Development Agreements between project partners and the Power Purchase Agreements with the diamond mines. Discussions with prospective customers continue. Recent meetings signal growing interest in developing the project as quickly as possible, as fuel prices continue to demonstrate price volatility and operating mine life continues to erode.

An Expression of Interest for a qualified firm to act as Owners' Engineer for the project was issued on July 20, 2009 and closed on August 19, 2009. Seven firms responded to the call with detailed submissions. Three of these firms visited Yellowknife and met with the DEC team in September 2009. Two firms were short listed from this group and

given the opportunity to provide additional information, once they had learned more about the project and had visited the Twin Gorges site. In the end, MWH – the largest and most experienced provider of hydroelectric engineering services in the United States – was selected. It will provide a detailed cost estimate for engineering design components and include related feasibility work necessary to move towards the construction tendering phase. Provided that this work is carried out effectively, it is anticipated that a mutually agreeable contract can be drawn up so that MWH can perform the ongoing role of Owners' Engineer.

Justification for Affiliates vs. NTPC Pursuing This Project

This project is being pursued by Dezé Energy Corporation (DEC), which is comprised of the NWT Energy Corporation (03) (NTEC(03)), the Akaitcho Energy Corporation, and the Métis Energy Company Limited.

The DEC is pursuing this project due to the significant upfront speculative investment required, NTPC's lack of internal resources and DEC's ability to access government funding. Also, the proposed customers of the Taltson expansion (the diamond mines) are not regulated customers and are not seeking to be served by a regulated utility.

DEC's pursuit of the Taltson expansion ensures that regulated customers remain protected from the business risks associated with this large scale development. However, the regulated customer will still benefit from the substantial upgrades to the Taltson facility at considerable savings. NTPC's role will be through an operating agreement for the new hydro site, potential sale of surplus power, and capital upgrades funded by DEC.

Funding

To date, approximately $13 million (provided by the Federal government, Territorial government, and the project proponents) has been expended to bring the project to this

relatively advanced stage of development. The GNWT has allocated to DEC $2.5 million in funding for 2009/10 as part of its Energy Priorities Investments Plan.

Beyond that, several federal funding opportunities have been identified as a viable source of significant capital investment. Working with the GNWT, DEC has prepared and submitted two major applications for funding through the Federal government's Green Infrastructure Fund (GIF) and the P3 Canada Fund, totalling $160 million. Phase one applications for each of these funding sources have been submitted and a response as to whether a second phase application providing further information is needed is being awaited.

2.13 Wha Ti Mini Hydro and Larger-Scale Hydro

Efforts and Progress

This initiative is being studied in conjunction with two other options: a larger-scale hydro development on the same site and a transmission line to the Corporation's existing Snare Hydro facility (see Section 2.7). A recent study commissioned by the Tli Cho Investment Corporation (TIC) has identified considerable hydro potential in the range of 6-15 MW on the same river site. Although the smaller plant still remains viable, preliminary indications are that the larger site is a more favourable economic project with comparable environmental impact. For this reason, work that is complementary to any hydro development sized between 1 and 15 MW is being undertaken in 2009/10.

Since the June 2009 update, a phase two investigation of the site has been completed and was presented in December 2009. A NTPC representative attended this presentation. The results of the study were positive. As such, TIC is seeking to obtain funding to complete pre-feasibility work and to investigate different business case options. Work in the areas of community consultation and traditional knowledge investigation continues.

Justification for Affiliates vs. NTPC Pursuing This Project

The mini hydro project is being pursued by NT Hydro (assisted by its subsidiary NTEC(03)). As the controlling partner, the community of Wha Ti identified NT Hydro as its preferred partner. The GNWT agreed, and has allocated funding to NT Hydro. It is possible that TIC may decide to pursue the larger hydro project. Under any of these scenarios NTPC would still have a role through a purchase power agreement or partnership in the project.

Funding

$250,000 has been allocated by the GNWT in 2009/10 as part of its Energy Priorities Investment Plan to support hydro and transmission line project development in Wha Ti. As well, NT Hydro made a $40,000 contribution for the phase two investigation of the site which was presented in December 2009. This funding was from the GNWT as part of its 2009/10 allocation to fund the NWT Hydro Strategy (from the Energy Priorities Investment Plan).

2.14 Bear River Feasibility Study/Sahtu Regional Hydro Assessment

Efforts and Progress

Since the last update provided in June 2009, the Deline Land Corporation has agreed to hold a Sahtu Hydro Symposium in Deline, to be held in early 2010. The goal of the workshop is to re-engage communities of the Sahtu and attempt to get support for the creation of a regional body to examine energy solutions for the region. The Symposium will examine hydro potential as well as technology options.

Justification for Affiliates vs. NTPC Pursuing This Project

This project is being pursued by Sahdae Energy Limited. It is a project where partners will be required and the risk is considerable.

Funding

The GNWT has contributed $100,000 in 2009/10 as part of its Energy Priorities Investments Plan.

2.15 Net Metering

Efforts and Progress

Net metering involves system-connecting customers that have acceptable renewable energy generation in excess of their own needs and are interested in selling the excess energy into the grid. The Department of Environment and Natural Resources is leading this initiative with the cooperation of NTPC and NUL.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative in which NTPC is playing a supporting role.

Funding

This is a self-funded GNWT initiative.

2.16 Biomass Strategy Implementation

Efforts and Progress

The GNWT has identified the implementation of biomass energy as one of its energy investment priorities. As such, the Department of Environment and Natural Resources has formed a committee to further investigate this energy option and NTPC participates on this committee. The GNWT has also formed a “NWT Biomass Energy Strategy”, part of which includes a study of electrical generation using biomass heating.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative in which NTPC is playing a supporting role.

Funding

This is a self-funded GNWT initiative.

2.17 Photovoltaic-Diesel Hybrid System

Efforts and Progress

The Department of Environment and Natural Resources (ENR) of the GNWT is conducting a pre-feasibility study of a photovoltaic-diesel hybrid system in Jean Marie River. This analysis will be used to determine if photovoltaic technology can be used effectively to reduce fuel usage, emissions, and contribute to lower electrical generation costs in the long-term. NTPC has assisted with this analysis by providing ENR with historical operating information relating to NTPC power generation in this community.

Justification for Affiliates vs. NTPC Pursuing This Project

This is a GNWT initiative in which NTPC is playing a supporting role.

Funding

This is a self-funded GNWT initiative.

3.0 DEMAND SIDE MANAGEMENT (DSM) AND ENERGY EFFICIENCY PROJECTS

In addition to alternative energy projects, the Corporation investigates and pursues DSM and energy efficiency projects where these projects provide economic or other benefits to the Corporation and its customers. This section reviews those projects related to energy efficiency and DSM currently being investigated or implemented by the Corporation.

3.1 Light Emitting Diode (LED) Streetlights

Efforts and Progress

NTPC continues to monitor the performance of the six LED streetlights installed on a trial basis.

Justification for Affiliates vs. NTPC Pursuing This Project

This project was initiated and is being completed by NTPC. It is an energy-efficiency initiative that converges with its operations to serve regulated customers.

Funding

NTPC is funding this project.

3.2 Longer Life Batteries

Efforts and Progress

Nothing new to report. NTPC is awaiting a response from Natural Resources Canada.

Justification for Affiliates vs. NTPC Pursuing This Project

This project was initiated and is being completed by NTPC. It is an energy-efficiency initiative that converges with its operations to serve regulated customers.

Funding

NTPC is funding this project.

3.3 Diesel Fuel Catalysts and Fuel-Saving Devices

Efforts and Progress

Since the last update, NTPC completed baseline studies on two engines for a 1-month period and two “Etorus FE” devices were rented and tested. NTPC is planning to proceed by relocating the two devices to another location for further testing and renting

two more devices to be located in another community so that it may obtain further data on the fuel savings yielded.

Justification for Affiliates vs. NTPC Pursuing This Project

This project was initiated and is being completed by NTPC. It is an energy-efficiency initiative that converges with its operations to serve regulated customers and, if successful, will lower fuel expense.

Funding

NTPC is funding this project.

3.4 Fort Smith Electric Heat

Efforts and Progress

The GNWT has converted the heating system in several of its buildings in Fort Smith to one that uses electric boilers. This heating system avoids the use of heating oil and therefore reduces GHG emissions. All costs associated with this conversion including all upgrades to the Corporation's distribution system were funded by the GNWT. Recently, the Roman Catholic Cathedral obtained private funding to convert its heating system to electric boilers too. To support these efforts, NTPC is selling the electricity used for heating purposes to the GNWT at an interruptible rate in accordance with PUB Decision 19-2005.

Two of the GNWT buildings were converted and online in November 2008 and have now reached the 1-year anniversary mark. Calculations estimate that the GNWT has realized approximately $200,000 in savings of displaced heating oil as well as a reduction in GHG emissions of over 500 tonnes.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC partnered with the GNWT on this project.

Funding

All costs associated with this conversion including all upgrades to the Corporation's distribution system were funded by the GNWT.

3.5 Station Service Initiatives

Efforts and Progress

The Corporation has undertaken a number of measures to reduce its reliance on diesel fuel and to assist customers to conserve energy, thereby reducing diesel generation. These measures were identified and described in the December 2008 Report. The Corporation continues to implement those measures.

In the spring of 2009, an Energy Conservation Challenge was issued by NTPC Senior Management to all employees, requesting their ideas on how the Corporation could further reduce its energy usage. To date, 116 responses (albeit with numerous duplications) have been received. Senior Management has committed to review these suggestions on a regular and continuous basis. During the first of these reviews, a Top 10 list was chosen (based on a cost/benefit analysis) and these suggestions are in the process of being implemented. Recently, another five suggestions have been selected and are also in the process of being implemented.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC is pursuing this project. It is an energy-efficiency initiative that converges with its operations to serve regulated customers.

Funding

NTPC has funded and continues to fund this project.

3.6 Energy Audits

Efforts and Progress

Nothing new to report.

Justification for Affiliates vs. NTPC Pursuing This Project

NTPC pursued this project. It is an energy-efficiency initiative that converges with its operations to serve regulated customers.

Funding

To date, NTPC has been unable to secure funding to continue this program.

3.7 Energy Conservation Education

Efforts and Progress

NTPC continues to deliver its “School Safety Program” to Grade 5 students throughout the Northwest Territories.

Justification for Affiliates vs. NTPC Pursuing This Project

This project is an NTPC initiative.

Funding

NTPC funds this project.

4.0 CONCLUSION

This report has been prepared in compliance with Directive 51 from Decision 13-2007 and covers the period from July 1, 2009 up to December 31, 2009. Subsequent reports will be prepared to update this information and provide new information to be filed with the PUB on a biannual basis.