

April 16, 2004

Vern Christensen, Executive Director  
Mackenzie Valley Environmental Impact Review Board  
Box 938, 200 Scotia Centre, (5102-50th Avenue),  
Yellowknife, NT, X1A 2N7

Dear Vern;

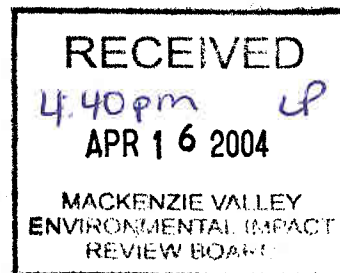
Thank you for accepting our application for Directly Affected Party Status in the case of the Mackenzie Gas Project.

As promised in our application form, we are providing a summary on the use of alternative energy for the proposed compressor stations. In particular, this document focuses on the potential for enabling this opportunity by developing hydro-electric power; an alternative that would not hinder the advancement of the pipeline.

Yours truly,

Dan Grabke

For:  
Deline Land Corporation,  
Tulita Yamouria Secretariat  
NWT Energy Corporation



## **Powering the Pipeline: A Northern Solution**

### **1.0 Introduction**

In December 2002, the Northwest Territories Power Corporation (NTPC) submitted an Expression of Interest outlining electrical generation and supply options for the Mackenzie Gas Project. The supply options outlined included thermal options as well as a number of hydro generation and transmission options.

The hydro generation option with the most promise is a development on the Great Bear River. The St Charles Rapids site is ideally sized and located to meet the power requirements of the pipeline while at the same time providing tremendous benefits to the north.

In May 2003 the Northwest Territories Energy Corporation (NTEC), the Deline Land Corporation (Deline) and the Tulita Yamouria Secretariat (Tulita), met with Imperial Oil to present the concept of providing hydroelectric power to meet the requirements of the Mackenzie Valley Pipeline. The response from Imperial highlighted a number of issues and concerns with such a proposal. Specifically, the response recommended that investments might be better placed into designing a phased approach, focusing on future infill compression stations for the pipeline.

Acting on those recommendations, Deline, Tulita, and the NTEC have developed a proposal that attempts to address all of the issues and concerns that were raised with the original proposal. It should be noted that this work is still at the "pre-feasibility stage" and firming up the case for a hydroelectric development would necessarily require a working relationship with the Mackenzie Valley Producers (Producers).

Below is a summary of the key issues and a proposed approach that could provide the basis for moving forward in developing a northern solution to the power requirements of the Mackenzie Valley Pipeline.

### **2.0 Northern Benefits of Hydro**

The utilization of hydropower for the pipeline would provide tremendous benefits for the north in terms of:

- **Environment** - The pipeline will have a dramatic effect on the amount of greenhouse gasses produced in the NWT. Currently the NWT produces approximately 1 megaton of emissions. The pipeline and its associated support infrastructure will increase that number substantially. Opportunities to eliminate and/or reduce these emissions can be achieved through the utilization of renewable energy such as hydro.
- **Communities** - With up to 200 MW in power requirements for the pipeline, the energy load in the NWT will at least double. Such a huge increase in power requirements in the NWT must be planned in a way that opportunities for northerners and communities are maximized. Reducing the NWT's reliance on expensive diesel generation would provide substantial quality-of-life benefits for northern communities.

- **Ongoing Benefits** – A hydro development can provide a legacy for the north and opportunities for the future long after the natural gas resources are gone. As well, the opportunity to provide power to the pipeline over the next 25 years or more may be the best ongoing business opportunity for northerners after construction of the pipeline is completed.

*The tremendous northern benefits of utilizing NWT hydro resources are obvious. It is expected that any development proposal that maximizes such benefits, including a hydroelectric development as well as the pipeline, will garner widespread northern support.*

### **3.0 Aboriginal Partnerships and Support**

The proposed hydro site on the Great Bear River is situated approximately half way between the communities of Deline and Tulita. The NTEC has signed an Memorandum of Understanding (MOU) with these communities and expects to sign a Memorandum of Intent in 2004. A great deal of consultation and education with respect to hydro development has taken place and there is every indication that the communities will support a hydro development on their traditional lands. While the agreements allow for the inclusion of the rest of the communities in the Sahtu, Deline and Tulita are leading the way.

Options to include other Aboriginal groups, including the Aboriginal Pipeline Group, in developing a power solution to the pipeline have been discussed.

### **4.0 Feasibility and Proposed Approach to a Hydroelectric Development on the Great Bear River**

Developing a renewable energy solution to the power requirements of the pipeline that addresses the issues and concerns of the Producers requires a creative approach utilizing the Best Available Technology. As an alternative to the producer's current plan, Deline, Tulita and NTEC propose to utilize a combination of gas-fired generators and hydroelectricity to power electric compressors. All compressor stations and the gas separation plant could utilize gas generators for the first period of production and then switch over to hydroelectric power once it is available. The gas generators would provide a reliable back-up system and could be transferred to future infill compression stations. The long-term economics of utilizing NWT hydroelectricity and electric compressors will support an adequate amount of redundancy in the system.

This option appears to offer the Producers the most flexibility and control, is economic, and represents the approach that best manages risk over the lifetime of the pipeline. Logistical challenges would be mitigated by phasing-in hydro at a later date. This may also provide longer term employment for many employees – a seamless transition.

## **5.0 Advantages of Utilizing Electric Compression**

The NTEC has undertaken some high-level analysis on the potential economics and operational benefits of utilizing electric power for the pipeline compressor stations. While a number of assumptions had to be made, there is every indication that electricity is the most effective, economic, and environmentally friendly approach for powering the pipeline.

Experts in the industry have described the use of electric compressors for pipelines as “the wave of the future”. Technological and reliability issues that were the case in previous decades are no longer concerns. The Pipeline Research Council International (PRCI) states that electric compression is expected to become much more widely used in the coming years. In fact, in some areas of the United States, electrically powered compressors are already the only viable option in terms of regulatory compliance.

## **6.0 Conclusion**

While work will need to continue the focus on project economics and technical feasibility, the potential benefits to the north can not be stressed enough. The development of a renewable energy source for industrial developments and communities and the establishment of an energy transportation corridor down the Mackenzie Valley will provide benefits to northerners long after the natural gas, oil, and mineral deposits are depleted.

With our long history of providing secure, reliable power in the north, the NTEC and the Northwest Territories Power Corporation, in partnership with Deline, Tulita and potentially other Aboriginal organizations, is best-positioned to meet the power requirements of the Mackenzie Gas Project. We are confident that the eventual power solution, developed in close collaboration with the Mackenzie Valley Producers, will be seen as balancing the impacts to the environment while maximizing the benefits to northerners, and will garner widespread public support.