

## **Bi-Pole -111 - Facts & Fiction.**

If the full potential of the Nelson River power generating capacity is the ultimate objective, than the transmission system design must meet the following criteria

- 1.) The transmission line design and routing must be compatible with existing and future HVDC transmission lines.
- 2.) For optimum performance and cost effectiveness, any new transmission lines ( Bi-Poles 3, 4 5) etc. must be;
  - a.) As short as possible.
  - b.) Have minimal impact on the environment.
  - c.) Have minimal impact on industries such as farming, commercial, institutional and municipal as well private entities.
  - d.) Effects on public health and safety must be a priority and must be kept to a minimum.
  - e.) Construction of multi-line single corridor HVDC transmission lines is practical and cost effective. Bi-Poles 1 & 2 are classic examples.
- 3.) Only the East side of Lake Winnipeg and the Interlake can meet these requirements. The east side of Lake Winnipeg is, by far, the preferred route. The proposed West of Lake Manitoba Bi-Pole 3 route is not acceptable for the following reasons;
  - a.) It will not meet the Manitoba Hydro requirements or intended purpose.
  - b.) It will not be compatible with the existing Bi-Poles 1 & 2. The 2007 consultants report, Page 5 para. 2.2.3, (commissioned by Manitoba Hydro) clearly states that the west side of Lake Manitoba Bi-Pole 3 line would not be compatible with Bi-Pole 1 & 2.
  - c.) It will be exposed to the most severe climatic conditions in Manitoba, as well as the flood plains of Manitoba.
  - d.) It will pose a potential safety and health hazards to all vehicles travelling on Manitoba's major and secondary roads and farm equipment operating or standing under the HVDC line. The published preferred west side Bi-Pole 3 route will cross all major highways and numerous secondary roads in Manitoba and the Trans-Canada highway twice. According to Manitoba Highways Department historic data, approximately 50,000 vehicles (all shapes and sizes) will be exposed to a potential high voltage charge. These issues are addressed and recognized by many experts globally. European countries such as Russia, Poland and others have very stringent regulations to minimize public health and safety issues for transmission line construction at road crossings and public access areas.
  - e.) The electro-chemical corrosion of subterranean and above ground infrastructures will be accelerated by stray DC ground currents. It is possible to mitigate or minimize the effects of stray ground current induced corrosion by providing a dedicated metallic ground return. This is not an option for the west side Bi-Pole route as it would be cost prohibitive due to the extra length
  - f.) A dedicated metallic ground return would be required, regardless where the lines are routed. However, a dedicated metallic ground return on the East side of Lake Winnipeg and/or Inter-Lake corridors would be economically

practical due to the shorter length and that a single dedicated metallic ground conductor could service more than one bi-pole line.

- g.) The arguments put forward by the Provincial Government against the East side of Lake Winnipeg routing of HVDC transmission lines are without substance or any legitimate foundation. Many world renowned experts as well as outside consultants hired by the Provincial Government as well as Manitoba Hydro Engineers agree that the west side of Lake Manitoba is a non-starter and that the east side of Lake Winnipeg is the most viable route from an engineering, economic and environmental perspective.
- h.) Routing additional bi-poles through the Inter-lake would also be cost effective and pose considerably less climatic risk to the lines than the proposed west side Bi-Pole 3 route.

In addition to the cost savings, overall transmission system performance, minimizing stray ground current corrosion and health and safety risks, the East side route would provide much needed economic boost for the east side communities. The needless extra cost of the west side route could be diverted to enhance the standards of living for the east side communities. If Bi-Pole 3 is routed on the east side of Lake Winnipeg as part of a much larger long term scheme to accommodate future multiple Bi-Poles, this could benefit the east side communities as an ongoing project for many years to come.

The reasons put forward by the Provincial Government why Bi-Pole 3 cannot be routed on the East side of Lake Manitoba are based more on myth than facts. It has been well documented by many knowledgeable experts that the east side route would not;

- a.) Interfere with the UNESCO designation of a portion of the east side boreal forest as a World Heritage Site.
- b.) Have a negative impact on woodland caribou or any other wildlife species.
- c.) Have a negative impact on potential sale of electric power to the USA. On the contrary, The USA importers of electric power from Canada are interested in getting it at the lowest price possible. There are those in the northern states, who want to replace the import of electric energy from Canada with their own coal burning and wind turbine power generation.
- d.) Have a negative impact on First Nations and other local communities. On the contrary, east side residence, and in particular the First Nations would realize a significant economic boost by partnering with Manitoba Hydro during construction and line and corridor maintenance.
- e.) The claim that the power line right-of-way would enable predators to take down woodland caribou and other wild life species more readily in the open areas as opposed to densely forested area is, if anything, a bit far fetched. A caribou with a six foot antler span could run faster in the open than in a thick forest. In the real world, power line right-of-ways and roadways are frequented by wildlife such as the caribou to rid themselves of predatory insects and to feed on the vegetation which is more prevalent in open areas then in dense conifer areas.

The Provincial Government's claims that the east side of Lake Winnipeg boreal forest is a "pristine" untouched wilderness is simply not true. The east side of Lake Winnipeg has;

- 1.) A multitude of drive to and fly-in tourist camps and lodges.
- 2.) Private cottages with road, fly-in and boat access.
- 3.) Mining operations, hundreds of mining claims are registered throughout the area.
- 4.) A number of active base and rare metals mines.
- 5.) Hundreds of Kilo-meters of high voltage AC power transmission lines.
- 6.) Countless number of trap lines. Few, if any use traditional trapping practices.  
Modern day trappers use power toboggans in the winter and all-terrain vehicles and motor boats during the summer.
- 7.) Daily air traffic in to and out of the various fishing and hunting lodges. The float and/or ski equipped aircraft are a horrendous source of noise and air pollution. However the woodland caribou and other wild life species do not appear to be adversely affected.
- 8.) Daily commercial air traffic to most east side communities alone is a source of noise levels significantly higher than that of a high voltage direct current power transmission line.

So much for the "pristine" Boreal forest.

There are a number of arguments put forward by various groups against the east side of Lake Winnipeg corridor that simply don't make any sense, for example;

- 1.) The bi-pole 3 corridor would have a negative impact on east side boreal forest and would jeopardise the UNESCO World Heritage Site designation. This is simply not true; a multi-bi-pole line corridor could be located on the east side without interfering with the UNESCO World Heritage Site designation. This has been reviewed by experts in this field such as Mr. Jim Collinson, a world renowned economist, environmentalist and past chairman of UNESCO World Heritage Site approval committee.
- 2.) The east side corridor will cross a number of caribou ranges that are far more threatened than the west side corridor. Again this is fiction not fact. Studies conducted on the effects of HVDC lines on caribou in the Inter-Lake, Bi-Pole 1 & 2 corridor did not find any evidence of adverse impact other than the caribou short term avoidance of the area during construction.
- 3.) The east side First Nations want the road, but not Bi-Pole 3. On the contrary the First Nations have stated that they would be prepared to build a HVDC line and lease it to Manitoba Hydro.
- 4.) Preserving the eastside of Lake Winnipeg by isolating it from the rest of the world would somehow more than offset the extra cost of the west side Bi-Pole 3.

## Summary

- 1.) Manitoba Hydro needs Bi-Pole 3 solely as a backup to the existing power transmission system.
- 2.) Bi-Pole 3 will be **new revenue neutral** until significant new generation is developed. I.e. Conowapa. From a practical perspective, Conowapa is not even on the drawing board. If the preliminary phase of the Conowapa started today, optimistically, Conowapa could be on stream by 2030. Until then, Bi-Pole 3 would be **new revenue neutral**. The Government's claim that we need to have Bi-Pole 3 completed by 2017 or we will lose 20 billion dollars in 20 years is ***pure unadulterated nonsense***
- 3.) Most, if not all of the power generation capacity of the projects currently under construction will be used to service the needs of the northern communities. Therefore, there will not be any impact on the existing north to south transmission systems.
- 4.) The west side Bi-Pole 3 will have a permanent negative impact on
  - A.) Public health and safety. The adverse effects of magnetic and electric fields and harmonics are real. Although, the impact on human and animal health has not been adequately studied and is not fully understood, there is sufficient evidence to be concerned. For example, numerous studies conducted globally, do not rule out the possibility of physical harm or fatal consequence under certain conditions in proximity to high voltage power transmission lines. This applies to alternating and direct current systems.
  - B.) Electro-corrosion of various metallic infrastructure caused by stray DC ground currents is a major concern. Stray current corrosion has caused premature failure of buried gas and oil pipelines, as well as storage tanks. Infrastructures such as structural steel and railroads are equally prone to accelerated stray current corrosion.
  - C.) Operations of equipment such as farm irrigation, aerial crop spraying, harvesters and land tillage are just a few issues that will have a direct economic impact not only on farm landowners but on all industries that directly and/or indirectly depend on the farming industry.
  - D.) Direct current magnetic fields will affect navigational compasses and other magnetic field sensitive devices.

In conclusion, Bi-Pole 3 cannot and should not be routed through densely populated and/or highly industrialized areas and in particular farmlands. The west side of Lake Manitoba Bi-Pole 3 corridor is not a viable option. The Provincial Government must revisit and reverse it's ill conceived decision and allow Manitoba Hydro to design and construct the next phase of the Nelson River power transmission system that would meet the present and future needs of Manitobans in a most cost effective and efficient manner. Again, this can only be achieved with an East side of Lake Winnipeg and the Inter-Lake corridors.

For the benefit of all Manitobans submitted by;

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