



**ONTARIO
RIVERS
ALLIANCE**

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14 March 2014

The Honourable Minister Jim Bradley
Minister of the Environment
77 Wellesley Street West
11th Floor, Ferguson Block
Toronto, ON
M7A 2T5
Email: Minister.moe@ontario.ca

**Re: Marter Township GS Environmental Report, Blanche River
Part II Order Request**

Dear Minister Bradley:

Ontario Rivers Alliance (ORA) is a Not-for-Profit grassroots organization acting as a voice for the French River Delta Association, CPAWS-OV, Council of Canadians, Kiishik Community Association, Food & Water First, Whitewater Ontario, Vermilion River Stewardship, Mississippi Riverwatchers, French River Stewardship, as well as many other stewardships, associations, and private and First Nations citizens who have come together to protect, conserve and restore healthy river ecosystems all across Ontario.

ORA was very pleased that Xeneca provided a fully searchable and user friendly Environmental Report (ER) and supporting documentation. This was very refreshing and helpful, and we appreciate this big step towards accommodation and cooperation. However, even with this significant advancement, it has been impossible to fully review the entire ER and all its supporting documentation to provide meaningful and thorough input within the limited comment period. ORA requests that in future a minimum of 60 days be provided for public comment.

Xeneca Power Development Inc. (Xeneca) is proposing to construct a 2.1 MW hydroelectric generating station (GS) on the Blanche River in Marter Township. The project site is located on the Blanche River at the Krugerdorf Chutes, approximately 9 km north of the Town of Englehart, upstream of the Misema and Englehart Rivers. An important set of rapids, known as Stuart's Rapids, is located approximately 3.7 km downstream of the proposed dam site, as it contains one of the few gravel/sandbar habitats in this portion of the Blanche River, and downstream of the rapids is a confirmed spawning habitat for Lake Sturgeon and possibly Walleye.

The Marter Township GS ER continually minimizes, confuses, and glosses over the facts to provide the reader with the desired impression that amounts to more of a sales pitch than a relaying of the facts contained in the supporting documentation. The general public are not normally versed in the technical aspects of a waterpower project, and would heavily rely on what is said in the main document – the ER. To rely on the ER for the facts would provide an unrealistic impression of the proposal because it is riddled with inconsistencies and inaccuracies in its translation of the supporting documentation.



Summary of Recommendations

Recommendation 1:

ORA has carefully reviewed the Marter Township Generating Station Environmental Report and its supporting documentation, and for the many reasons noted herein, ORA submits that this Environmental Report (ER) falls far short of meeting all of the requirements of the Class EA for Waterpower. ORA therefore requests that the Minister issue a Part II Order to elevate this Environmental Assessment to an Individual Environmental Assessment. This would instill more confidence in the process, strengthen the project by ensuring a more thorough and rigorous environmental assessment, and would result in a much more environmentally, socially and economically sustainable project.

Recommendation 2:

The ER must be clear, concise, consistent, and reflect only the facts - not an inaccurate summary of the facts.

Recommendation 3:

Minimum environmental flow should be increased to maintain the continuity of the natural functions of the river, and reflect the existing hourly natural hydrological regime..

Recommendation 4:

Xeneca provide sufficient minimum compensatory flow in the bypass reach to sustain life and natural functions throughout all seasons.

Recommendation 5:

The assessment of potential impacts must take into account the flows and levels of the natural resting environment and act in the best interests of the ecosystem.

Recommendation 6:

Xeneca be required to confirm gradient and feasibility of harmonizing and/or linking hydraulically with the Misema operation.

Recommendation 7:

That the geomorphic study include the entire upstream and downstream zone of influence, all the way out to the general location where the effects of the proposed project are indiscernible from the existing condition.

Recommendation 8:

Xeneca further evaluate, and undertake a geotechnical investigation, to determine the stability of natural clay and sand soils, and the impacts of the modified peaking operation upon the entire ZOI.

Recommendation 9:

Xeneca be required to complete a comprehensive methylmercury study that will examine all of the above identified factors existing within the proposed headpond area, including soil and sediment, to provide a quantitative analysis and a projected post-construction estimate of increased mercury levels in fish tissue.



Recommendation 10:

The ZOI be defined as between the upstream limit of the headpond, all the way downstream to the Englehart confluence with the Blanche River and downstream on the Blanche River at Highway 624 (an approximate distance of 1.5 km) on the understanding that Xeneca's current proposal is to operate in a way that coordinates their operation with the operation of the Misema Generating Station (referred to as the "work around" approach) to address potential cumulative effects in relation to downstream flows and water levels.

Recommendation 11:

Lake Sturgeon, their spawning area and habitat must be protected and accommodated in any approved operating strategy to ensure their population flourishes.

Recommendation 12:

Xeneca must be required to complete a full cost/benefit analysis to determine the net value of what this project would be contributing to Ontario economy for 1 MW of power, vs what the fisheries on the Blanche and Englehart Rivers contribute to Ontario's economy.

Recommendation 13:

Xeneca be compelled to complete a full cumulative effects assessment report which includes consideration of the upstream wastewater treatment facilities releasing raw sewage into the Blanche River system.

Recommendation 14:

A formal agreement on flows, levels and timing of operations must be in place between Xeneca and Trans Alta before any approvals are granted.

Recommendation 15:

Decommissioning provisions be required up-front in the event the facility is no longer socially, environmentally or economically sustainable and needs to be removed.

Submission

Please note that all underlined text contained in this letter is ORA's emphasis, used strictly to draw the reader's attention.

ORA offers its comments and recommendations below.

1. Operating Strategy

a. Minimizing Impacts of Modified Run-of-River

The ER states, "*modified run-of-river projects typically have less environmental impact than such peaking hydroelectric projects.*"¹ This is a judgment that is misleading and has no scientific basis or merit.

The ER minimizes the amount of time intermittent operation would occur when it states, "*intermittent operation would only occur during low flows*"², when in actual

¹ Marter Final ER, Table 25, Identified Issues and Management Strategies, P171

² Annex 1, Part 1 of 4, 5.3 Public Safety and Civil Structures, P13



fact it would occur 37% of the year, as well as the Modified run-of-river which would occur 42% of the year – making a total of 79%³ of the time where flows would be held back from downstream flow.

The statement that, "*most of the year, the facility will operate continuously; however, when natural flows fall below the minimum turbine capacity, operation becomes intermittent.*"⁴ Xeneca's use of the description of "modified run-of-river" as 'continuous' is in itself very deceiving because it is not continuous when it is holding back water, and it gives the impression to the public of more of a run-of-river operation – which is also described as 'continuous' in this ER.

Recommendation 2:

The ER must be clear, concise, consistent, and reflect only the facts - not an inaccurate summary of the facts.

b. Environmental Flow

It was very disturbing to read the HEC-RAS Environmental Flow Comparison⁵ which was focused on setting an "appropriate Environmental Flow", and compared (QEA) of 1.0 cms to 0.5 cms. It is a stretch to refer to this as "appropriate", when certainly it is not appropriate or adequate for the riverine ecosystem. This was merely an exercise to see how low the operation could go to best advantage their project – and ultimately profits, and had nothing to do with environmental integrity of the riverine ecosystem. It is important to look at what it will cost to generate only 2.1 MW (Installed Capacity) of power, which, if very fortunate, might generate 1 MW of actual power for approximately 1,000 people. It's rather ironic that it is referred to as 'clean', 'green' and 'renewable' energy.

When Marter is holding back water during intermittent operation it would create a significant decrease in flow and levels downstream of the Blanche/Misema confluence, especially if both facilities are only releasing their minimum flows at the same time. This is totally unacceptable, especially since Xeneca also reports it would be prolonging the low flow conditions in their attempts to be in harmony with the Misema site. One has to wonder how aquatic life in the Blanche River could be adequately sustained on 2.3 cms of flow over any prolonged length of time.

Recommendation 3:

Minimum environmental flow should be increased to maintain the continuity of the natural functions of the river, and reflect the existing hourly natural hydrological regime.

c. Compensatory Flow

The ER states that, "*due to the general lack of suitable habitat within the bedrock-dominated bypass reach, no compensatory flow releases (QCOMP) were previously proposed in the Draft ER. To facilitate larval drift for sturgeon larvae in the pool at the confluence between the Marter Township GS tailrace and the bypass reach, a QCOMP of 0.5 m³/s is now proposed to be released during the spring...*"⁶ There is

³ Annex 1, Part 1 of 4, Table 3 Operating Mode Occurrence by Season, P17

⁴ Annex 1, Part 1 of 4, Section 8, Summary Discussion on Operations, P28

⁵ Annex 1, Part 1 of 4, 28 November 2013, Canadian Projects Limited to Xeneca – P325 (pdf)

⁶ Marter Twp. GS ER, P204



no compensatory flow allowed for summer, fall and winter, and ORA submits that this "bedrock dominated" reach is home to many forms of aquatic life. Xeneca must provide sufficient minimum flow to sustain this life throughout all seasons.

Recommendation 4:

Xeneca provide sufficient minimum compensatory flow in the bypass reach to sustain life and natural functions throughout all seasons.

d. Flows and Levels

When considering the current operations at the Misema, the ER concludes that "*the potential impacts must be identified on the basis of changes that may occur to the current, existing environment, the currently fluctuating flows in the Blanche River (downstream of its confluence with the Misema River) are assumed to represent baseline conditions. Therefore, flows and levels in the Blanche River prior to the Misema GS operating as a modified run-of-river are not considered*".⁷

It is not surprising that the proponent would interpret it this way, but surely this self-serving logic cannot be allowed. There must be some hope for the Blanche River at some point in time during daily operation for water levels and flows to return to a natural functioning regime – there must be a time of rest and recovery for the aquatic ecosystem.

The impacts of the Misema River GS where it meets the Blanche River provides an extremely graphic view of how barren this stretch of the Blanche and beyond could be if and when both operations are in full modified-peaking mode.⁸

Recommendation 5:

The assessment of potential impacts must take into account the flows and levels of the natural resting environment and act in the best interests of the ecosystem.

e. Headponds

MNR inquired as to whether "*the headponds of Misema and Marter [were] similar and if drainage, snowmelt, rain events etc. could leave one headpond full while the other is dry.*" Xeneca avoided answering this question when it responded, "*Xeneca has committed that over a 24 hour period the total volume of water entering the headpond will be equal to the total quantity of water leaving the facility. The headponds of the two facilities are not hydrologically linked.*"⁹ However, Xeneca has proposed to link the two facilities through a 'harmonized' operating strategy, so understanding the Misema operation and its hydrology, headponds, flow and other capacities are key considerations.

MNR also expressed concern in another key area, "*do not agree there is only a 20 cm difference in head from Krugerdorf to Misema - 60 cm alteration due to Misema? Want to put transducer in to see what actual change is over time. Need to be sure as entire OP is based on this small area. Need to confirm gradient.*" Again, Xeneca avoided the question when it responded, "*Xeneca believes that the model results are accurate and defensible. The reach between the Marter and Misema confluence was*

⁷ Marter Township GS ER, P21

⁸ Annex 1, Part 1 of 4, Headpond Inundation Mapping, Station 0=497 to -2+081, P215 (pdf)

⁹ Appendix C, Part 3 of 3, P116 pdf



assessed for both level fluctuations and geomorphology (see Annex I for related reports.) Xeneca has placed additional water level monitors between the Marter site and Englehart. Data will be collected in an ongoing basis and if any discrepancy is found between the monitored data and the model outputs, the data will be used to refine operations to stay within projected and proposed operating levels."¹⁰ When reviewing the Agency Consultation documentation, it was fraught with struggles between the best advice and facilitation efforts of Agency staff and the proponent's constant justification of the status quo and resistance to that advice.

Recommendation 6:

Xeneca be required to confirm gradient and feasibility of harmonizing and/or linking hydraulically with the Misema operation.

2. Erosion & Sedimentation

a. Parish Geomorphic Study – Assessment Area

There is a fundamental problem with the Parish Geomorphic Study in that the field assessment only included, "approximately 3.2 km of the Blanche River, from a short set of rapids 1.4 km upstream of the proposed dam site (Reach 5, R5) to the confluence of the Misema River (Reach 8, R8), 1.8 km downstream."¹¹ However, the ER reports "the affected area is known as the inundation area; the High Dam Option would result in upstream inundation extending approximately 2.4 km upstream of the dam; the Low Dam Option would result in upstream inundation extending approximately 1.7 km from the water control structure."¹² This geomorphic study only assessed 3.2 km of the ZOI, although it has been established to be at least 16.2 km from the upper end of the headpond to the Blanche/Englehart confluence. It is unacceptable that the entire ZOI was not studied, especially since the Blanche has a strong history of erosion and bank instability.

The Executive Summary reports that "*very few signs of channel instability were observed during the field reconnaissance...*", and yet MNR rebutted that observation many times, indicating "*some very large scale channel and valley instability within this 1.7 km stretch*"¹³. Again the facts are not accurately represented. ORA submits that modified peaking operations have a high probability of inducing erosion, therefore, the entire ZOI should have been included in the geomorphic study.

Xeneca divides the DZOI into 3 segments, i) Marter to Misema confluence, ii) Misema confluence to Englehart confluence, and iii) downstream of the Englehart confluence. Xeneca reports that "*the area between the Misema confluence and Englehart confluence will largely operate within existing conditions except for a marginal increase in the number of operational days*", and that "*this marginal increase in operational days is not expected to impact sediment transport; hence no further study is required in this reach*".¹⁴ Xeneca presents no clear and traceable scientific basis here for its decision to do no further study in this reach.

¹⁰ Appendix C, Part 3 of 3, P118 pdf

¹¹ Annex 1 – Part 4 of 4, Parish Geomorphic Assessment, P129 (pdf)

¹² Marter GS ER, Summary, Pvi

¹³ Appendix C, Part 3 of 3, P111

¹⁴ Appendix C, Part 3 of 3, P111



Xeneca proposes "to operate the Marter project around Misema GS operations. The proposed Marter project will operate within existing conditions downstream of the Misema confluence. Consequently, additional sediment study is not required downstream of the Misema confluence. The reach between the proposed Marter site and the Misema confluence has been assessed as part of the geomorphology report in Annex 1".¹⁵ Consequently Xeneca neglected to ensure erosion studies were completed within the entire ZOI. Additionally, the study ended at the end of Reach 8, just above the Blanche/Misema confluence, where the map indicates an "area of concern" because of "primarily high, steep banks situated in bends and confined channel sections".¹⁶ Therefore the study should have at least extended beyond this point.

Reach 8 – Valley wall contact along near mid-reach along west bank.



Recommendation 7:

That the geomorphic study include the entire upstream and downstream zone of influence, all the way out to the general location where the effects of the proposed project are indiscernible from the existing condition.

b. Erosion and Slope Failure

The Parish study reported that "fluctuation in daily water levels upstream can increase the amount of shoreline erosion that would occur without modified operation", and that "continual wetting and drying of the clays in the banks, as well as an elevated water table upstream of the proposed dam, could break down some of the clay structure, allowing for more bank erosion, and further possible

¹⁵ Appendix C, Part 3 of 3, P110

¹⁶ Annex 1 – Part 4 of 4, Parish Geomorphologic Assessment, P153 pdf



*destabilization of slopes. The clay content in river banks complicates bank erosion analyses.*¹⁷

MNR expressed concern that dams are built with a 50 to 100 year lifespan in mind and that Xeneca should think in those timescales when cautioning that *"large scale failures are likely to happen somewhere in this vicinity of the Blanche River every 30 to 40 years at least."* Xeneca responded that air photos from 1959 displayed a locally braided form, suggesting a slump and the river re-working the sediment.¹⁸ Whereas the Parish study reported in Reach 7, *"the valley walls feature prominent slope failure scars"*; Reach 8, *"a few erosion scars and active slumping were observed along the valley walls"*; and that the *"existing conditions model indicates that if erosion is going to occur, it will occur primarily in reaches R1, R3, R6 and R8, and subsequent deposition will occur in R4, R5, and R7."*¹⁹

MNR also commented on the obvious, that *"the high amount of fallen trees and LWD in the channel are likely due to saturation of the high clay and silt content in the river banks which cannot support trees leading to eventual failure into the channel."*²⁰

The Parish study also reported that *"constructing the Marter Township Hydroelectric Generation Station along the Blanche River will likely only exacerbate what already occurs in the study reaches."* In addition, *"some bank locations might be destabilized when the dam is operating"* and *"the slope failures observed along the channel should be evaluated in more detail; and "a geotechnical investigation may be warranted to better understand this activity."*²¹

MNR asked, *"what would happen if there was a large-scale slope failure at the GS site"*, and Xeneca's response was, *"...operation of the project is not expected to exacerbate the existing slope failure risk in the area."*²² However, as noted above, the study reflects much uncertainty, both in the stability of natural clay and sand soils, and in the impacts of the modified peaking operation, and recommends *"further evaluation and a geotechnical investigation"*.

MNR commented that, *"Section 5 analyses describes the erosion of bed material (both sand and clay). Fairly low discharges are able to erode the fine and medium sized sand material (0.2 mm). Given this, we do not agree with the statement "so while lesser flows may push the sands around, the overall channel shouldn't experience much change with the proposed change in the hydrograph". With the proposed daily peaking cycles, this sand erosion threshold will be exceeded on a daily basis, providing a daily opportunity to move this material downstream, especially in Reaches 7 & 8, and downstream of the confluence with the Misema River. It looks like the depositional fate of this sediment is questionable and the magnitude, frequency, and timing of this transport could use further thought."*²³

¹⁷ Annex 1 – Part 4 of 4, Parish Geomorphic Assessment, P150 pdf

¹⁸ Appendix C, Part 3 of 3 – P-114

¹⁹ Annex 1 – Part 4 of 4 – Parish Geomorphic Assessment, P30 (P147 pdf)

²⁰ Appendix C, Part 3 of 3, P114 pdf

²¹ Annex 1 – Part 4 of 4, Parish Geomorphic Assessment, P37 (pdf 154)

²² Appendix C, Part 3 of 3, P119 pdf

²³ Appendix C, Part 3 of 3, P115 pdf



MNR also reports, *"in Section 5.3 Bank Erosion... in the 5th paragraph there again is a statement that "most of the banks in the study reach appeared to be very stable", when much erosion and instability is noticed, especially in R8."*²⁴ This is yet another example of inaccuracy and downplaying the facts in the ER.

The ER glosses over it with this, *"assessment of geomorphology did not identify significant erosion or sediment issues in the most affected reach (Krugerdorf to Misema) and hence no concern downstream of Misema where the proposed operation is largely within existing conditions. Flow fluctuations associated with dam operations will have only minor impacts downstream, where, because of the presence of valley wall slope failures in areas of predominantly clay substrate, and because of complications involved with cohesive banks, post-construction erosion monitoring has been recommended."*²⁵ Again, the proponent dismisses the facts and relies on post-construction erosion monitoring, which is far too late.

The proponent has omitted Reaches 1 to 4 in this study, even though it is within the headpond and ZOI and will experience daily water level fluctuations. The fact that the ER glosses over and ignores many of the obvious signs of slope failure has undermined any confidence or trust in its contents. This lack of complete and accurate reporting was also displayed in the proposed Wabagishik Rapids GS.

ORA places much more trust and confidence in the opinion of an MNR staff person who has nothing to gain from the project, than it does in consultants who are retained by the proponent to complete multiple proposals and have much to gain by ensuring the viability of the proponent.

Recommendation 8:

Xeneca further evaluate, and undertake a geotechnical investigation, to determine the stability of natural clay and sand soils, and the impacts of the modified peaking operation upon the entire ZOI.

3. Water Quality & Methylmercury

a. Water Quality Impacts

Hutchinson Environmental Solutions Limited (HESL) reported that *"concentrations of total aluminum, chromium, cobalt, copper, iron and vanadium exceeded Ontario Provincial Water Quality Objectives (PWQOs), the regulatory surface water quality objectives that apply to water at the proposed facility."*²⁶

Also, *"pre-development sampling results indicate that the Blanche River in the project area has water quality typical of a Canadian river overlying a clay plain; the river contains elevated concentrations of metals, total phosphorus, turbidity and total suspended solids (TSS) in the spring, with metals and nutrient concentrations increasing during times of increased river flow and suspended sediment load. The concentrations of these parameters is due in large part to the prevalence of clay in the study area but other sources may include stormwater inputs from Kirkland Lake*

²⁴ Appendix C, Part 3 of 3, P115 pdf

²⁵ Marter Township GS, P157

²⁶ Annex IV – Part 2 of 3, Hutchinson Report, P8 pdf



and Swastika, agricultural runoff, and wastewater treatment plant effluent from the Kirkland Lake Wastewater Treatment Plant. Methyl mercury concentrations were relatively constant through the year with a slight increase during the summer, which may be a result of greater methylating bacterial production in the summer."

Hutchinson also reports that Round Lake, approximately 20 km upstream, is "eutrophic" because of untreated sewage inputs from Swastika and Kirkland Lake.²⁷

So water quality at the project site is heavily impacted from many sources, with a high nutrient and metals content.

b. Methylmercury

Hutchinson cautioned that sediment accumulating in the impoundment area "*could increase during peak flows, and concentrations of metals and nutrients absorbed to sediment would also increase...*"; and "*mercury concentrations could increase independently of suspended sediment as a result of water impoundment alone but mercury transport out of the impoundment would be markedly higher with increased suspended sediment, as mercury – like other metals – absorbs to sediment; and water temperature in the impoundment will warm from increased surface area which may result in lower dissolved oxygen....*"²⁸

Hutchinson also reported that "*mercury in most large fish did not exceed the majority of the MOE and Health Canada fish consumption guidelines....*", however, "*three White Sucker did contain mercury concentrations that exceeded the most stringent MOE fish consumption guidelines, and all fish contained total mercury concentrations greater than CCME's guidelines for the protection of wildlife that consume aquatic biota.*"

Yet, the ER downplayed all of the above when reporting, "*assessment of water quality did not identify significant changes except a possible transient effect on methyl mercury common to all new inundations.*"²⁹

The size of the headpond would be 13.1 hectares with the preferred option, and the production of methyl mercury in reservoir systems is largely governed by the amount and type of organic matter inundated. The ultimate concentration of mercury in aquatic organisms within these environments depends on a number of factors including biological and chemical characteristics of the water body and sediment-water interface, including pH, dissolved oxygen, oxidation-redox potential, sulphate concentrations, etc., which affect the potential for and rate of bacterial decomposition and methylmercury generation and transfer from sediments to the overlying water. All these factors must be taken into account within a study.

A report resulting from the Experimental Lakes Area Reservoir Project (ELARP), entitled "*Impacts of Reservoir Flooding 1991 to Present, reports dramatic increases (10X to 20X) in both methyl mercury and greenhouse gases (carbon dioxide and methane) production in response to flooding of wetland vegetation. Clearly, the microbial breakdown of dead plants and organic soils resulted in the methylation of*

²⁷ Annex IV – Part 2 of 3, Hutchinson Report, P109 pdf

²⁸ Annex IV – Part 2 of 3, Hutchinson Report, P79 pdf

²⁹ Marter GS ER, P139



mercury already present in the system, and the production of significant quantities of carbon dioxide and methane."

Another ELA study titled "FLUEX" showed very similar results in flooded boreal upland forests, "Despite the ELARP wetland reservoir having 26 times more OC stores than the FLUDEX upland reservoirs, the rate of MeHg production in the wetland reservoir in the first two years of flooding (2700 mg ha⁻¹ y⁻¹) was only 1.7 times higher than the rate in the High C reservoir (1580 mg ha⁻¹ y⁻¹)."³⁰

The potential for methylmercury production in the headpond, and any resulting elevations of mercury levels in fish tissue, or increased fish consumption restrictions, has not been properly assessed in this ER. Xeneca's approach is pre and post construction monitoring; however this would be too late. Since mercury levels in fish tissue are already elevated, it is imperative that a full mercury projection study be performed.

Xeneca provides no clear and transparent connection to how it came to the conclusion that "*mercury methylation can be minimized by limiting the amount of flow manipulation. For the Marter Township GS, holdbacks of water are proposed to be relatively small and of short duration (< 24 hours), which will restrict the conditions under which methyl mercury formation generally occurs*".

Recommendation 9:

Xeneca be required to complete a comprehensive methylmercury study that will examine all of the above identified factors existing within the proposed headpond area, including soil and sediment, to provide a quantitative analysis and a projected post-construction estimate of increased mercury levels in fish tissue.

4. Downstream Zone of Influence (DZOI)

In a letter which was not included in the ER documentation, but at ORA's request was provided on 13 March 2014, MOE revealed that "*the documentation from Xeneca identifies the current proposed hydrologic zone of influence to be at Englehart confluence with the Blanche River where water level fluctuations are +/- 10cm.... MOE is satisfied that the location on the hydrologic DSZOI could be characterized as being between the Englehart confluence with the Blanche River and downstream on the Blanche River at Highway 624 (an approximate distance of 1.5 km) on the understanding that Xeneca's current proposal is to operate in a way that coordinates their operation with the operation of the Misema Generating Station (referred to as the "work around" approach) to address potential cumulative effects in relation to downstream flows and water levels.*"³¹

The ER is very conflicting and inconsistent as it oscillates back and forth - at one time recognizing the area of flow alterations to the Englehart River confluence and beyond, and in the next sentence "the end of the downstream ZOI was determined to be the confluence zone with the Englehart River".³² Then again, the ER mentions an August 7, 2013 letter

³⁰ Impacts of Reservoir Creation on the Biogeochemical Cycling of Methyl Mercury and Total Mercury in Boreal Upland Forests, B.D. Hall, V.L. St. Louis, K.R. Rolffhus, R.A. Bodaly, K.G. Beaty, M.J. Paterson, and K.A. Cherewyk

³¹ MOE letter to Xeneca dated 29 January 2014

³² Marter Township GS ER, P137



from Xeneca to MNR, indicating that a consensus seemed to be reached regarding the extent of impact to the downstream, that it would be divided into three main zones, the last one being "the area of river downstream of the Englehart River confluence"³³. However, when detailing the DSZOI in the main part of the ER it clearly does not reflect the area below the Blanche/Englehart confluence as part of the DSZOI. So which is it – it is all very confusing to the reader.

The fluvial geomorphic work should have taken in all of the defined Zone of Influence both upstream and downstream of the proposed Marter GS. The proponent seems to arbitrarily makes up its own rules as it goes along, deciding which part of the Zone of Influence warrants proper studies, and which doesn't. Again, Xeneca has fallen short of due diligence in studying the full impacts of their proposals. After the fact monitoring and adaptive management plans seem to be the most frequent and advantageous decision made by the proponent; however, it definitely is not the key to protecting and maintaining a healthy riverine ecosystem.

Recommendation 10:

The ZOI be defined as between the upstream limit of the headpond, all the way downstream to the Englehart confluence with the Blanche River and downstream on the Blanche River at Highway 624 (an approximate distance of 1.5 km) on the understanding that Xeneca's current proposal is to operate in a way that coordinates their operation with the operation of the Misema Generating Station (referred to as the "work around" approach) to address potential cumulative effects in relation to downstream flows and water levels.

5. Lake Sturgeon & Walleye

The ER reports that MNR has documented that Lake Sturgeon "*are present in the Blanche River approximately 2.5 km downriver from the proposed dam location. This population of Lake Sturgeon is listed as Threatened under the ESA and by the Committee on the Status of Endangered Wildlife in Canada. It is not yet listed on any of the schedules of the federal SARA, and therefore does not have federal protection under this Act.*"³⁴ The ER also indicates that there is a Lake Sturgeon and Walleye spawning area below Stuart's Rapids, and they could potentially be spawning at the base of 80 Foot Falls on the Misema River – which is within the ZOI. "*Lake Sturgeon were not detected by any surveys on the Blanche River during the current study.*"³⁵ The MNR Site Information Package cautioned that "*Walleye and Lake Sturgeon (Section 4.14) are confirmed to utilize the spawning site at Stuart's Rapids, and care must be taken to provide natural conditions for species present at this site post-construction.*"³⁶ Also, approximately 18.5 km downstream of the proposed dam location is a potentially significant habitat for Lake Sturgeon. The ER also reports that Krugerdorf Chutes is a probable barrier to upriver sturgeon migration; however, there was no indication of how the proponent came to this conclusion. In regards to Lake Sturgeon, fish spawning, and habitat impacts, Xeneca states that the precautionary approach will be applied.

³³ Marter Township GS ER, P93

³⁴ Marter Township GS ER, P29

³⁵ Marter Township GS ER, P30

³⁶ Annex III – Part 3 of 3, P216 pdf



Lake Sturgeon are protected under Ontario's Endangered Species Act, even if they have not yet been listed in the official SARA schedules. The intent must be to protect this population of Lake Sturgeon that has been confirmed by MNR to exist within the ZOI.

According to the ER, "*Walleye populations on the Blanche River are identified as a Valued Ecosystem Component, as it is one of the most sought after species in the sport fishery.*"

Under Residual Adverse Effects, the ER indicated, "*negative residual effects are anticipated for habitats (terrestrial and aquatic) that will be inundated as a result of the creation of the headpond*" and "*significant negative residual effects are anticipated for fish and benthic habitat within the upper extent of the inundation area as a result of the project.*"³⁷

The 2012-2013 Environmental Characteristics Report indicates "*alteration to flows and volumes as a result of the proposed Marter Project could have adverse impacts upon spawning and other life cycle stages of species which utilize the habitat within the Krugerdorf Chutes pool.*"³⁸ This report went on to describe fish and fish habitat downstream, at the confluence of the Blanche with the Misema, Stuart's Rapids (which is a confirmed spawning area for Walleye and Lake Sturgeon within the ZOI), all the way out to James Rapids. The Conclusion and Recommended Mitigation was, "*no alteration of flow levels within the Misema River is anticipated as a result of the current proposal. With the hydro dam at Misema currently operational under a Run of River Operating Plan, it is presumed that flows at this site during the spawning season replicate natural conditions, and that there is no impact to fisheries values at this location.*"³⁹ This of course was incorrect, as the Misema River GS is a modified peaking facility.

"*Ontario's fisheries contribute substantially to Ontario's economy, with recreational and commercial fishing valued at more than \$2.5 billion; 41,000 person years of employment; an 1.2 million residents and non-resident anglers contributing \$2.2 billion annually to the Ontario economy; a driving force for Ontario's tourism industry and a key economic component in many communities, particularly in Northern Ontario with 1600 licensed tourist operators generating hundreds of millions of dollars in revenues annually; more than 1200 commercial bait fishing licenses are issued annually, with \$17 million in direct sales of live bait.*"⁴⁰ This waterpower proposal places Lake Sturgeon and Walleye populations and habitat at risk.

Residual Environmental Effects and Significance listed the loss of fish habitat, potential impacts to Walleye and Lake Sturgeon spawning habitat as "Not Significant". The loss of spawning habitat should have read significant, but instead it said, "*It is expected that offsetting measures will reduce the significance of this residual effect to "Not Significant"*"⁴¹

Recommendation 11:

Lake Sturgeon, their spawning area and habitat must be protected and accommodated in any approved operating strategy to ensure their population flourishes.

³⁷ Marter Township GS ER, Pix

³⁸ Annex III, Part 3 of 3 - 2012-2013 Environmental Characteristic Report, P218 pdf

³⁹ Annex III, Part 3 of 3 - 2012-2013 Environmental Characteristic Report, P222 pdf

⁴⁰ Draft – Ontario's Provincial Fish Strategy, MNR – P3

⁴¹ Marter Township GS ER, Table 29: P-191



Recommendation 12:

Xeneca must be required to complete a full cost/benefit analysis to determine the net value of what this project would be contributing to Ontario economy for 1 MW of power, vs what the fisheries on the Blanche and Englehart Rivers contribute to Ontario's economy.

6. Cumulative Effects

Cumulative effects are defined as changes to the environment that are caused by an action in combination with other past, present and future human actions.⁴² As noted in 3 (a) above, water quality at the project site area is heavily impacted from many sources, with a high nutrient and metals content. Therefore the sources of this pressure on water quality, and any other upstream influences, are crucial when considering the cumulative effects of this operation. Especially with upstream wastewater treatment facilities releasing treated and untreated sewage into a river system that will be holding water back for up to 16 hours on hot summer days. This is a recipe for toxic algae blooms. This was not addressed in the ER.

Also, the ER states that, "*due to concerns regarding potential cumulative impacts of two modified run-of-river facilities affecting flows in the Blanche River, Xeneca is currently proposing to 'harmonize' operations at the Marter Township GS with those of the Misema GS on the Misema River.*"⁴³ This operation would only magnify the cumulative effects of the already elevated water quality challenges.

The Summary Discussion on Operations reports, "*consideration of existing waterpower facilities is incorporated into this operating plan in such a manner as to limit the cumulative effect from the Marter generating station. Downstream impacts from the Marter project should therefore be considered in the context of the existing condition on this section of river*" and it goes on to say that the key consideration "*of the run-of-river operations of the Marter project is to limit downstream effects through harmonized operation with the Misema generation station.*"⁴⁴ Even the word harmonize is deceiving as it minimizes the operating objectives and parameters to downplay the serious negative impacts this operation could have on the riverine ecosystem, navigation, and public safety. This is typical of the persuasive and minimizing approach taken in all aspects of the proponent's project assessment, reporting and planning.

The proponent dismisses and at the same time justifies and downplays any cumulative impacts it could have downstream of the proposed Misema GS when it states, "*the Marter Township facility has effects on upstream water levels and downstream flows. Downstream effects beyond the confluence of the Misema river will be influenced by the existing Misema Generating Station which operates as a modified run-of-river facility for most of the year.*"⁴⁵ Even with a 'harmonizing' approach there will be times when the Marter facility is holding back at the same time as the Misema is holding back water – this would reduce the flow far below what they would have been before the Marter facility comes into the picture. This alone should necessitate a study of the potential cumulative effects that could impact many kilometers of riverine ecosystem below the Blanche and Englehart confluence.

⁴² Cumulative Effects Assessment Practitioners Guide, 2.1 Cumulative Effects Defined, CEAA, Government of Canada.

⁴³ Marter Township GS ER, P204

⁴⁴ Annex 1, Part 1 of 4, Section 8, P28

⁴⁵ Annex 1, Part 1 of 4, Section 8, Summary Discussion on Operations, P28



ORA questions the feasibility of actually coordinating a harmonizing of the Marter GS with the Misema GS. There has been no convincing explanation of how it could work. If it is achievable, the cumulative effects of two facilities operating in a modified peaking mode in such close proximity to one another have not adequately considered bank stability, habitat, fisheries and the riverine ecosystem. The ER does not address these vital considerations adequately, when key studies do not include the entire zone of influence.

The cumulative effects resulting from this proposal would impact on water quality, water quantity, valuable fisheries, SARS, habitat, erosion, sedimentation, water temperature, spawning areas, and contribute to the loss of a unique and valuable riverine ecosystem.

Why is our government willing to pay such a high cost for what is purported to be clean, green and renewable energy?

Recommendation 13:

Xeneca be compelled to complete a full cumulative effects assessment report which includes consideration of the upstream wastewater treatment facilities releasing raw sewage into the Blanche River system.

Recommendation 14:

A formal agreement on flows, levels and timing of operations must be in place between Xeneca and Trans Alta before any approvals are granted.

7 Dam Decommissioning

Ontario is littered with old and derelict dams that are no longer in use, along with access roads, and in the case of hydro dams, transmission lines and poles that must be monitored and maintained (at a cost, usually to the taxpayer), and ultimately removed for safety and/or ecological reasons. This all takes dollars that taxpayers should not have to pay. Developers reap the rewards for at least the 40 year life cycle of their contract, and a portion of these funds must be secured for dam decommissioning.

If the FIT Program were to be terminated, profits reduced, or costly repairs were needed due to damage caused by ice or flooding, or if climate change reduced the amount of water available for energy production, the payback from these small rivers could make this facility unprofitable. This could result in bankruptcy and/or abandonment. There is no commitment in this ER for setting provisions aside to decommission the facility and its infrastructure if events such as the foregoing should occur. Provisions for dam decommissioning are essential.

Recommendation 15:

Decommissioning provisions be required up-front in the event the facility is no longer socially, environmentally or economically sustainable and needs to be removed.

Conclusion:

In many areas of the ER, the claims are glossed over and do not align with the documentation and studies contained within the ER. Such as in Table 25, where under the issue "Upstream



inundation may alter water quality (methyl-mercury) and heavy metals in reservoir", the resolutions indicate, "No impact anticipated...." Yet, the Hutchinson Report pointed out several reasons why it could be a problem – see comments in No.2.

As MOE staff, pointed out in a July 3, 2013 correspondence to Xeneca, section 4.2.2 of the Class EA for Waterpower projects deals with the identification of potential effects of a project. *"An effect is any change to the environment, positive or negative, that could occur as a result of the project.... This Class EA requires the proponent to assess the potential effects as well as any net effects after mitigation and focuses on those effects common to waterpower projects."*⁴⁶ The Notice of Completion states, *"the ER concludes that there are no significant adverse effects after the application of mitigation and adaptive management measures. The Marter Twp. GS is categorized as a project on a managed waterway pursuant to the Class EA."*

It is ORA's submission that Xeneca's approach falls far short of their claims in many key aspects of this ER, and does its best to sell the reader on the project, with an approach of convincing the reader to just trust them, let them build it, and then through monitoring and adaptive management during pre and post construction the riverine ecosystem will be just fine. This approach is not acceptable.

Part II Order Request

After having carefully reviewed the information as presented in the Marter Township GS ER; and in consideration of the serious potential for negative impacts on the environment; the lack of due diligence in completing the necessary studies throughout the entire zone of influence; and in Xeneca's failure to accurately report all study results in the ER document, ORA requests that the Minister issue a Part II Order to elevate this proposal to an Individual Environmental Assessment. An Individual Environmental Assessment would ensure this project is environmentally and socially sustainable, and would result in net benefits to the people of Ontario.

ORA also requests that the Minister consider each of the recommendations as set out above.

Thank you for this opportunity to comment. ORA looks forward to your response.

Respectfully,

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⁴⁶ Appendix C, Part 1 of 3, P141 pdf, and Class EA for Waterpower, P34