Haste, Uncertainty and Risk

The Bipole III Story

INTRODUCTION

The mixed legacy of Hydro-electric development

- significant economic and social benefit from Hydro-electric development;

- but at a material cost:

  to environment;

  and

  to traditional peoples intimately connected to it

- at the root of social and environmental devastation:

  failure to listen - especially to our First People

  sense that “what is good for Manitoba Hydro is good for Manitoba”

  poor environmental decision making process and tools

  (perhaps) hubris

The Legacy endures

- significant economic and social benefit
- profound and deleterious impact on ecosystem
- profound and deleterious impact on FN including those of Fox Lake, TCN, York Factory
- damage to the Hydro Brand
- vulnerability of Hydro Brand in the American marketplace

Perhaps the most important recommendation the CEC has ever made

- a huge project cutting a 1400 km swathe

  from the lower Nelson

  through the Parklands

    the rapidly disappearing traditional lands of WS FN

    the Metis breadbasket

    the Pine Creek Backyard

  through the agricultural heartland

    the family farm of young Shandra Rempel

    the focus of much of our own provincial "Buy Manitoba" strategy (sustainable local food development)

Perhaps the most important recommendation the CEC has ever made

- it raises key environmental assessment issues:

  a stark contrast in potential direction for cumulative effects in this province

  impacts upon an endangered species under significant stress and another mammal in “precipitous decline” in certain locations

  can we safely ignore and fail to assess the mental health stresses engendered by development

  the question of whether modern adaptive management approaches can be successful in the context of a flawed impact statement, a failed cumulative effects analysis and incomplete insight into vegetative management and wildlife corridor plans

juxtaposed against

- Hydro's concerns relating to reliability

Perhaps the most important recommendation the CEC has ever made

- BP3 is the carefully selected "first in line"

  of a series of closely interrelated developments

  having the potential to reap the cumulative effects whirl wind

  with particular impact upon highly stressed communities and severely impacted landscape

- opportunity for MB CEC to make a decision that steers environmental decision making on the right path

  and in doing so, assist both the public interest and Manitoba Hydro

OVERVIEW OF KEY RECOMMENDATIONS

Recommendation

Expressly find:

MB Hydro experiences ongoing challenges in hearing and reconciling voices of community including:

FN
Metis
Rural Manitoba

These challenges are in part related to the failure to incorporate these voices at an early stage in the dialogue and in part to a failure to identify who represents these voices

Hydro's application is not consistent with Best Practice in that:

the conclusions of its cumulative effects effects analysis are suspect given the lack of reliable supporting evidence, quantitative analysis or qualitative reasoning

Recommendation
<u>Expressly conclude</u>

its cumulative effects approach appears disconnected from modern best practice

material flaws continue to exist in its assessment of the impacts on caribou including its failure to:

assess LAMBDA for the Reed Lake Herd; evaluate future risks associated with one of the two primary predators associated with this species at risk or consider scenarios risks related to future fires (as advised both by GN and Hegman)

major gaps continue to exist in Hydro's assessment of potential health impacts including those related to mental health, stress, infectious disease and gastro-intestinal disease

to the detriment of its wildlife analysis, Hydro has adopted an impoverished and "one size fits all" approach to its determination of significance

Recommendation

Expressly conclude

it chose a perplexing approach to route selection that ultimately impaired the quality of its environmental assessment

The project in combination with past, present and future developments is likely to have significant adverse effects on:

the traditional lands and people of Fox Lake, TCN and York Factory

modern agricultural practice as conducted in the Southern part of the Biple 3 route

The project in combination with past, present and future developments may have potentially significant adverse effects on:

the “berry patch” and other traditional harvesting practice particularly as practiced in the Metis Breadbasket and the Pine Creek backyard;

a moose population that is in “precipitous decline” in parts of the Parkland region.

Recommendation
Expressly conclude

That significant and unresolved uncertainty exists with regard to:

the potential likelihood of other significant adverse cumulative effects given the poor quality of the existing cumulative effects analysis

the likelihood of significant adverse effects on boreal woodland caribou given the identified challenges in the analysis

the impact of significant landscape features such as bison enclosure on a moose population in "precipitous decline"

the question of whether modern adaptive management approaches can be successful in the context of a flawed impact statement, a failed cumulative effects analysis and incomplete insight into vegetative management and wildlife corridor plans

whether we can achieve a substantial reliability benefit while mitigating the impact of the preferred route in the Southern portion of the route

Recommendation
<u>Expressly recommend</u>

that based on the state of the present record, the project not be approved

that MB Hydro be directed to:

complete a cumulative effects assessment consistent with modern best practice including:

complete its cumulative effects assessment of impacts on boreal woodland caribou

revisit its analysis of the impacts of the project in combination with past, present and future developments including the bison enclosure on the Pine Creek backyard and the Metis breadbasket

complete its adapative management plans for wildlife corridors, access, vegetative management and independent monitoring in concert with Manitoba Conservation and affected First Nations and the MMF

further examine the CEC and BP3 options for mitigating the impact of the preferred route

EXPECTED HYDRO RESPONSES

Expected Hydro response # 1

All flaws will be healed by robust adaptive management and aggressive regulation by Conservation

but expert evidence clearly shows that ta key element of successful adaptive management is proper impact and cumulative effects analysis

EXPECTED HYDRO RESPONSES

Expected Hydro Response # 2

A delay of a year or two years will put us at unacceptable risk in terms of reliability

but

Hydro is largely responsible for the situation by rushing to environmental assessment an analysis that was obviously flawed

Dating back to Limestone, Hydro has consciously deferred partial or full reliability solutions for a variety of reasons including

economics (Limestone)

the choice to defer the “attractive” BP II relocation in part due to the pursuit of export related opportunities related to Northern Generation

The reliability of the Load Forecast underlying the alleged 1500 Mwh deficit in 2017 is suspect

ACKNOWLEDGEMENTS

Participant funding process and award

Ms Cathy Johnson and CEC staff (Joyce and Amy or Jamy)

Colleagues at Manitoba Hydro (including but not limited to the legal team, Ms Johnson and Trevor (Mr. Trevor))

unfailingly courteous

generous and innovative in allowing access to adaptive management team

fair in their commentary regarding Gunn and Noble

Those who have volunteered time

CAC Manitoba/Pine Creek “guys”

WEIGHING THE EVIDENCE
THREE CHALLENGES

Remiss if we did not note three particular challenges, that this panel or any other panel may face in assessing any EIS

defensive routines

the rationality routine

uncertainty

challenge 1 - defensive routines

> A number of writers
> have identified how, in organizations, defensive routines can develop that can block learning by people in organizations and by organizations. There is a tendency to hide mistakes. There is a tendency to profess a certitude that we don't really have. There is a tendency to protect turf, resources and prestige. (Diduck and Fitzpatrick, 5696 - 5697)

WEIGHING THE EVIDENCE
THREE CHALLENGES

challenge 2 - the rationality routine

> a rationality ritual,
> which is simply put, the tendency to rationalize
> by whatever means necessary the proponent's own
> view on what is important to include in the CEA.
> (Gunn and Noble, 4830)

challenge 3 – uncertainty

> There is uncertainty with regards to the extent of
> impacts of human activities on complex systems,
> especially with regards to large scale projects that cover
> an array of eco zones.
>
> The uncertainty also stems from the
> fact that the impacts of human activities are felt
> at more than one scale, a local scale, a regional
> scale, a national scale. So there's a multi scale
> type of an effect that occurs. There can also be,
> of course, lags in space and time between an
> intervention and the resultant effect. (Diduck and
> Fitzpatrick 5689/90)

Inherent challenge of uncertainty may be exacerbated by defensive routines and rationality routines

THE INHERENT CHALLENGES OF UNCERTAINTY MAY HAVE BEEN EXACERBATED BY AN EIS THAT MAY HAVE WENT OFF TRACK FROM THE OUTSET

No, but if you'd just
3 selected a preferred route first and then done an
4 analysis and environmental, a full-detailed
5 environmental analysis or assessment on that route
6 rather than, you know, three or four or five
7 different options in each section, you might have
8 been able to do a more complete job on the one
9 route. (999)

These comments may imply a discomfort with the overall quality of the EIS that many in this room may be feeling.

WEIGHING THE EXPERTS AND OTHER SOURCES OF INFORMATION

Five key sources of information in this proceeding

correspondence from the Province

public participation research by Hydro

FN ATK

witnesses presented to support the Hydro EIS

leaked Hydro documents

WEIGHING THE EXPERTS AND OTHER SOURCES OF INFORMATION

Ask oneself, how many times key insight in this proceeding has come from outside the EIS?

Why did it take a series of CEC irs to convince Mr. Schindler to redo his November 2011 caribou analysis?

Should we have to rely on Mr. Mills to identify the potential impact of a massive bison development on a moose population in “precipitous decline”?

Should we have needed the Department of Conservation to advise Mr. Schindler that moose populations in certain parts of the province were in “precipitous decline”?

Should we have needed a leaked Hydro document to tell us that relocating Bipole II to Riel was an “attractive option” and a “worthy goal”?

Should we have needed Dr. Murray Lee and Ms Marla Orenstein to tell Ms Hicks (Hydro witness) that she should be looking at community mental health ?

WEIGHING THE EXPERTS AND OTHER SOURCES OF INFORMATION

Ask oneself who has offered more analytically consistent and reliable evidence?

Ms Stewart (MMF) on moose or Mr. Schindler?

Drs. Gunn and Noble on cumulative effects or Mr. Osler?

The Fox Lake Cree Nation on cumulative effects or Mr. Osler?

Indeed, given the quality and integrity of their presentation, our client has often wondered whether MB Hydro should consider retaining the Fox Lake team for its next EIS

In the respectful view of CAC Manitoba, it is important that a signal be sent to MB Hydro and other proponents that they have an obligation to come to the CEC with a vastly different product than presented by the BP3 EIS.

A SHOUT OUT TO A FEW HYDRO WITNESSES

Ortiz and Mathewson (November 8) (adaptive management and vegetative management)

Dr. Petch some candid and principled observations (highlighted by Mr. Madden on behalf of the MMF)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For CAC Manitoba/Gunn and Noble

Highly qualified

Wrote the book on Impact Assessment (4811)

Publish in and edit leading journals

Significant experience with Hydro and advising proponents and government

Extensive experience (6 years) with Hydro Transmission Lines and vegetative management (4808)

Experience NALCOR (hydro project) and other proponents

Major regional assessment Great Sands (South-Western Saskatchewan)

Advice to a variety of governments and regulators including the NEB and Provincial Ministers (4808 to 4809)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For CAC Manitoba/Gunn and Noble

on the right sight of acceptable practice

in the room with CEA, February 2012 – a select few including Noble, Hegmann. Ross and Duinker

there can be no doubt that the thrust of modern environmental assessment is on the side of a "VEC Centric" approach

on the right side of past advice from the CEC and other regulators

actually read CEC recommendations in Wuskwatim and CEC criticism of the "new normal"

reasonably foreseeable (AEUB)

actually are familiar with the record

page 1 supporting materials

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For CAC Manitoba/Gunn and Noble

<u>not successfully tested by Hydro</u>

MR. BEDFORD:

I'd like to tell you that your paper I
7 think is a remarkably fine piece of work.

. . .
MR. BEDFORD:

One thing I do know in
life is good writing and this is good writing.
This is well-reasoned
and it was well presented today.
. . .

18 MR. BEDFORD:

Whether anyone else
19 agrees with me or not, my personal opinion is that
20 you have contributed greatly to the value of this
21 hearing. And now I'll reveal to you that my
22 colleagues, Ms. Mayor to my left, Ms. Johnson to
23 my right, and I, having read your paper on the
24 weekend have been insistent that it be read widely
25 within Manitoba Hydro at a senior level.

And I know as of today that it has been.
(4980/4981)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

Mr. Osler primary author of Chapter 9

primary author of chapter 9 of the Environmental Impact Statement (3249)

an admitted non expert

MR. WILLIAMS:

Can you indicate, sir,

12 whether there was someone within Manitoba Hydro

13 with expertise in cumulative effects assessment

14 who was responsible for the oversight of these

15 professionals within their various technical

16 areas?

MR. OSLER:

In the general sense of

18 expertise in doing assessments, the senior staff

19 of Manitoba Hydro have the expertise they have. I

20 don't think there's anybody who claims to be a

21 specialist on cumulative effects.

22 MR. WILLIAMS:

Do you, sir?

23 MR. OSLER:

No, I don't claim to be a

24 specialist on how you would apply it for mammals

25 or for vegetation or anything else. I'm a person 1 that helps pull together and manage an overall process. (3253/3254)

unpublished over the last 30 years

have not published any peer reviewed scientific papers on

environmental assessment research over the last 30 years (3246)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For Manitoba Hydro/ Mr. Osler

who did not read the technical reports

15 MR. WILLIAMS:

And in terms of

16 reaching your opinions on those conclusions, would

17 it be fair to say that the primary evidentiary

18 basis for your conclusions were the technical

19 reports provided by the various experts from

20 various disciplines, sir?

MR. OSLER:

Not directly because I

22 didn't deal with the technical reports.

I dealt

23 with the people who were pulling together chapter

24 8, and putting together the analysis in chapter 8

25 of the effects on the biophysical and socioeconomic environments. (3250/3251)

. . . But I wasn't reading technical reports, I want to be very clear about that, I wasn't even sure they were ready yet.

MR. WILLIAMS: So, sir, the technical reports themselves, you would not be familiar with?

MR. OSLER: That would be correct.

MR. WILLIAMS: And even as they apply to cumulative effects assessment?

MR. OSLER: That would be correct. (3251)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For Manitoba Hydro/Mr. Hegmann

clearly an expert

but with an extremely unusual expert report

no bibliography (only one footnote and a reference to CEAA)

not one specific citation referring to a page in the Practitioner's Guide

no reference to the guidance from the Alberta *Cumulative Effects Assessment in Envionrmental Impact Assessment Report Required under the Alberta Environmental Protection and Enhancement Act*

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For Manitoba Hydro/Mr. Hegmann

> curiously muted for the author of *From Alchemy to Reason*
>
> > The [CEA] for the Bipole III Transmission Project meets the requirements of the Guide. On at least this basis, the CEA is not deficient and meets current practice.

we sensed something was amiss

> a report written in haste
>
> > retained in early February (cross examination March 12, 2013)
>
> Without reference to CEC Guidance
>
> > did not review extensive analysis of CEC in Wuskwatim report (cross examination March 12, 2013)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

For Manitoba Hydro/Mr. Hegmann

Without reference to Any Technical Reports

did not review technical reports (cross examination March 12, 2013)

Violating the two most fundamental principles of offering expert evidence

do not offer an opinion unless one is familiar with the underlying evidence

do not offer an opinion until one has reviewed the guidance from the expert tribunal in the jurisdiction in which you testify

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

Pages 2 – 17 of the CAC Manitoba Supporting Material

page 3

Scoping document promises more than CEAA guide

page 4 – 5

Hegmann swims against the tide with "project centric approach"

pages 5 – 6

Hegmann disregards CEC guidance in advocating for the "new normal" Gibbons "We never come to grip with residual effects because we keep changing the goal posts."

pages 6 – 8

"the elephant in the room"

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

Pages 2 – 17 of the CAC Manitoba Supporting Material

pages 10 – 12

the Guide strongly supports GN's observation that the study area is wrongly localized to a study area based on a linear corridor

pages 13 -14

Mr. Hegmann is out of step with current practice when he suggests the standard for prospective analysis is certainty

extremely disturbing that on perhaps the key issue of this proceeding

MB Hydro has chosen to present

a non-expert

and an

expert who has had just a couple a couple of weeks to prepare his written report

Neither having read the technical reports

Proposed findings

Mr. Osler is not qualified to offer expert evidence of CEA

In areas of critical dispute, the opinion of Drs. Gunn and Dr. Noble is to be preferred to the opinion presented by Manitoba Hydro.

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES
Note conclusions of Gunn and Noble endorsed by Stewart

The project and cumulative effects
18 assessments aren't informed by quantitative data.
19 I outlined some of those deficiencies in baseline
20 data, and they don't have the evidence to support
21 their conclusions and their definitions. (Stewart, 4370)

Again, we are in agreement with the
11 CAC evaluation of the cumulative effects
12 assessment with respect to the sufficiency of the
13 baseline data.
14 I just don't see that it's there. (Stewart, 4372)

A quantitative cumulative effects
20 assessment, I think, would be extremely useful in
21 this case. (Stewart, 4372)

CUMMULATIVE EFFECTS
THE WEIGHT TO BE ACCORDED THE WITNESSES

Note conclusions of Gunn and Noble buttressed by conclusions of Fox Lake FN

Given this history and lived
2 experience, *it is impossible for Fox Lake to view*
3 the Bipole III project as discrete and unrelated
4 to past and future projects. Bipole III is part
5 of a process of hydroelectric development that
6 began in the 1960's and continues today. *With*
7 each additional project, Fox Lake's homeland is
8 more and more altered and destroyed by projects,
9 with a consequence that existing environmental
10 problems are compounded and magnified. (3940)

CUMULATIVE EFFECTS
THE CAUTIONARY TALE

Death by a thousands cuts is still death

progressive nibbling, *death by a thousand cuts*, or the tyranny of small decisions. And the point is that cumulative effects often emerge from what we often perceive as very small, sometimes very insignificant impacts or, you know, another drop in the bucket doesn't count for a whole lot. *But in hindsight, when we look back on how things have changed over time, we can see, you know, as we move across that progression of landscape, we can see that the small decisions and small impacts add up.* And they can be quit e significant over space and over time. (Gunn and Noble, 4812/4813)

The Oil Sands

Water withdrawal increases from 12 million to 595 million cubic metres per year, and the number of oil sands leases increasing from two to over 3,000. (Gunn and Noble, 4813)

South Western Saskatchewan

And this is a 1,900 square kilometre area with 1,500 gas wells. Attached to each of those gas wells are a series of road networks. So each well has an access road, there are access roads for cattle grazing, recreation and so on and so forth, over 3,000 kilometres of access road. ((Gunn and Noble, 4814/4815)

CUMULATIVE EFFECTS

How does this happen in the era of modern environmental assessment?

So it comes to the question then, which is sort of core to our examination of the Bipole cumulative effects, is *how does this happen*? And part of the reason why these types of scenarios play out on the landscape is, every time there is a project, or often when there's a project, it's *deemed as marginal or relatively insignificant when compared to the magnitude of other changes on the landscape*; or t*he magnitude of the project impacts are measured against or compared to the impacts of other things*, as opposed to measuring them in addition to the impacts of other things; or *it's argued to be the responsibility of other proponents or future projects to address cumulative effects*. (Gunn and Noble, 4815)

Uncanny resemblance to the Hydro analysis

CUMULATIVE EFFECTS
Is Hydro repeating the errors of the past?

<u>failure to judge incremental consequences</u>

Finally, and perhaps most
3 significantly, is that cumulative effects are
4 viewed incorrectly and interpreted incorrectly.
5 *And the cumulative effects assessment consistently*
6 examines the significance of the effects compared
7 to the effects of other disturbances, as opposed
8 to in addition to other disturbances, the total
9 effects. I'll emphasize that point that it's the
10 total effects that matter.
11 cumulative effects. **(4886)**

check out Schindler and Rettie's recent moose assessment for further support

CUMULATIVE EFFECTS

Cumulative Effects Analysis is Central to Good Environmental Assessment

you can't do good environmental
7 assessment without assessing cumulative effects.
8 So a good EA, if you're looking at the impacts on
9 VECs such as caribou or wetlands, you can't
10 understand the significance of a project's effect
11 unless you understand the total effect of other
12 actions on that VEC. (Gunn and Noble, 4816)

1 [to] undertake an assessment of projects which might or
2 might not have significant effects on the
3 environment, is it possible to do so in the
4 absence of a cumulative effects assessment that
5 meets this minimal standard? (Gunn and Noble, 4820)
6
MR. NOBLE:
No. In order *to*
7 understand what the significance of a project's
8 effect is on any VEC, you have to be able to put
9 into perspective of what the other sources of
10 stress and the other effects are on that VEC. You
11 have to be able to put into perspective of how
12 that VEC has changed over time from past to
13 present day. (Gunn and Noble, 4819)

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

The standard set by Gunn and Noble is lower than the standard set in the Scoping Document

> 4 didn't adopt regional and strategic assessment,
> 5 which is a very high standard. (Gunn and Noble,
> 4819)

> It would be *fundamentally misleading* to suggest that Gunn and Noble assess based upon a regional standard

Failure to meet a minimum standard

> we observed that the cumulative
> 9 effects assessment doesn't meet a minimum
> 10 standard, based on our analysis of good practice
> 11 in cumulative effects. (Gunn and Noble, 4822)

> We certainly don't believe
> 12 that it meets the standard that was set out in the
> 13 environmental assessment itself in terms of the
> 14 regional or the strategic or the best practice
> 15 guidance that is available. ((Gunn and Noble, 4822)

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

based on his brief review,
Hegmann materially mis-characterizes the nature and severity of the Gunn and Noble concern

this is not a case where Hydro comes close to minimally acceptable standards

this is not a case where Hydro can Velcro together its cumulative effects assessment and limp over the minimally acceptable standard

this is a fundamentally impaired cumulative effects analysis

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

Scoping Failure - Exclusion of key proximate linear developments such as BPs 1 and 2

And one of the more notable project
22 omissions or disturbances, in our view, was the
23 omission of the Bipole I and II right-of-way.
24 reason being that obviously that's another major
25 linear disturbance within range of the proposed
linear development. (Gunn and Noble, 4824/25)

Exclusion of Natural Disturbances such as Fire and Flood

natural disturbances
10 might have been considered and probably would have
11 been considered, or should have been considered if
12 the science was in place to support that, because
13 the logic behind that is simple.
14 changes to the landscape are not only human
15 induced, there are obviously natural ecological
16 changes and cycles that are ongoing, that we
17 should pay attention to, and that will interact
18 with the human induced changes. (4826)

Note **Hegmann** cites fire can be modelled
AEUB (page 38 supporting materials)

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA
Scoping Failure – Exclusion of different vegetative management scenarios

other types of human induced
6 stress are not considered, particularly related to
7 the operation and the maintenance of the Bipole
8 III right-of-way. The first one that popped in my
9 mind was vegetation management, also sometimes
10 just called vegetation maintenance. *Now, that is*
11 not considered a significant feature activity
12 contributing to environmental stress. Though, in
13 fact, vegetation maintenance, in my experience, *is*
14 a core determinant of the level of stress that
15 will be put upon the environment over the course
16 of the lifetime of the right-of-way. That's
17 primarily -- *that's the primary determinant as to*
18 what is going to happen on that landscape over the
19 next 50 or 100 years. So to me that's a human
20 induced stress that could rightly be considered.

Some key references to vegetative analysis (Gibbons)

Gunn undertaking filed February 2013 (more up to date than dated Hydro research)
Gunn (5013 to 5015)
Ortiz (4031/4042)
Penner and Neufeld (1054 to 1058)

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

Scoping Failure – Exclusion of different vegetative management scenarios

Gunn Research for BC Hydro

initial sheer massive impacts "hell of a mess"

herbicides if carefully selected selectively applied can be a valuable tool

subsequent treatment/tailored to particular location is critical/potential to ameliorate to a high degree

over time opportunity to have a stable diverse vegetative community

in certain cases, you may alleviate fragmentation events/secure animal crossings if properly tailored

B*ut where is vegetative management plan? Where is proposed active learning? Where is consideration of the implications of different scenarios in cumulative effects analysis*

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

Scoping Failure – Exclusion of different vegetative management scenarios

vegetation is not just about protecting land based resource values but also water based

vegetation maintenance most important tool in protecting water courses/how you approach vegetative maintenance/province will always have a mandated riparion buffer zone/that minimum not always good enough/utility can impose a higher standard around riparion area/adopting a wider buffer zone/how the stream bed is crossed/all those decisions can really affect the area

buffer zone/distance back from the water that you are not going to disturb the water/not allowed to cut within buffer zone or operate heavy equipment/buffer between water and human activities

What is the impact of these different scenarios?

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA
Scoping Failure – Exclusion of different vegetative management scenarios

Four key points

vegetative management key mechanism which can exacerbate or amerliorate stress on ecosystem

different vegetative management scenarios simply not discussed in cumulative effects analysis

vegetative management plans cannot be properly developed or assessed in the absence of a proper impact assessment and informed dialogue with affected communities

detailed vegetative management plans not available for review

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA

Stewart similarly highlights the challenges of weighing the EIS in the absence of fleshed out vegetative management

The final Environmental Protection
4 Plan won't be available until a licence is
5 granted. So we won't know the details until this
6 has finalized and within that Environmental
7 Protection Plan will be some mitigation measures.
8 *My understanding is the Environmental Protection*
9 Plan also includes plans such as the access
10 management plan and the vegetation management
11 plan, which will outline specific mitigation
12 measures. We're in a situation where we don't
13 know what the final mitigation measures will be
14 for moose, or if they will be successful.
15 The point of an impact assessment is
16 to predict residual project impacts and residual
17 project impacts are those remaining after
18 mitigation has been implemented and is successful.
19 It's difficult to understand how we
20 have some residual project impacts, yet we don't
21 know what some of the final mitigation will be,
22 nor do we have evidence that for those mitigations
23 that we are aware of, that they will be
24 successful. (4373)

CUMULATIVE EFFECTS
A Fundamentally Flawed CEA
Scoping Failure – failure to re-evaluate insignificant effects in combination with the effects of other projects

the Bipole CEA **should, but it does not,**
21 rationalize that some insignificant project
22 effects may actually need to be elevated to the
23 status of significant adverse, when considered in
24 combination with the effects of other projects.
25 And that guidance is taken directly from the
1 Hegmann guidance that was established in 1999.
2 It's a well-accepted principle. n (4833/34)

So if
10 we look at *wolf pack habitat ranges* in chapter 6,
11 map 621, if you take a look at the polygons there,
12 there are quite a few overlapping ranges. If we
13 reconsider the project effects from the
14 perspective of cumulative habitat fragmentation
15 caused by multiple linear corridor developments,
16 including highways, including the Bipole I and II,
17 and all of the other development pressures that
18 would be in that region, *concern for the*
19 incremental effects upon that wolf habitat may
20 have elevated it to a VEC of concern in the CEA.
21 So this is just an example of how we might
22 reconsider, we might reconsider the significance
23 assignment in the direct effects assessment and
24 bring some VECs forward into the CEA.

Unfortunately, the re-evaluation of
importance is not part of the scoping
procedure. (Gunn and Noble, 4833/34)

A Fundamentally Flawed CEA

Scoping Failure – failure to re-evaluate insignificant effects in combination with the effects of other projects

direct reference from Hegmann et al (page 42 supporting materials)

reluctantly conceded by Osler

> can we agree that a cumulative effect on a VEC may be
> 6 significant, even though each individual project
>
> 7 specific assessment of the same VEC concludes that
>
> 8 the effects are insignificant?
>
> MR. OSLER:
>
> 10 Yes.
>
> MR. WILLIAMS:
>
> Would you like me to repeat that, sir?
>
> MR. OSLER: No, I don't want to you repeat it.
>
> Yes, I agree with it.
>
> MR. WILLIAMS:
>
> And that indeed is a fundamental principle of cumulative effects assessment?
>
> MR. OSLER: One of them, yes. (3271)

Principle honoured by Hydro in cross examination but not in cumulative effects practice

A Fundamentally Flawed CEA

spatially/ecologically restricted

spatially
ecologically restricted approach where much of the
analysis on VEC conditions was within the ROW,
within the right-of-way, and very little attention
aside from caribou and habitat, again based on the
scope of the reports that we reviewed, very little
attention to thresholds, either ecological
thresholds or disturbance thresholds. (4885)

A Fundamentally Flawed CEA

Scoping Failure – the Problem Isolation Paridgm

boundaries are focused on the project and not on
13 the ecology or the distribution patterns of the
14 VECs.
15 *So, not only are the spatial*
16 boundaries of the project -- are they project
17 oriented, the study area was further
18 compartmentalized into 13 segments to ease
19 analysis. That is what is known as the problem
20 isolation paradigm in natural resources
21 management. And this is a common mistake that is
22 made. What the problem isolation paradigm is,
23 it's a very common phenomenon, and it's when you
24 take an environmental problem and you think, well,
25 because this is so huge, how could we possibly
1 address it?
The way forward is to break it down
2 into solvable component parts, solve each problem
3 in turn, and try to recombine those individual
4 solutions back into what we might think of as a
5 whole. Now we have addressed the whole problem as
6 it was. But the problem is that that doesn't work
7 very well. S*o, basically, when you do that, you*
8 tend to miss some really key dynamics that exist
9 at that higher scale, life sustaining dynamics
10 between the component parts that are never looked
11 at, because you are not looking at the parts,
12 you're not assessing it as a whole in the first
13 place. So that problem is something that we
14 observed. (Gunn and Noble, 4836/4837)

A Fundamentally Flawed CEA

Retrospective Analysis – Ignoring the past and creating a new normal

Dr. Noble makes a similar point to the one made by Dr. Gibbon yesterday

And the Bipole assessment establishes
4 a new normal, assuming that past change, past
5 effects are the new baseline. *And so if we were*
6 to look forward to a future development or a
7 future project, if they were to adopt the same
8 model, then any impacts of Bipole would be again
9 completely absorbed in the baseline.
10 I just remind you back to the
11 introduction where we had a map with all those
12 dots on the landscape. That was just an example,
13 every dot was just considered part of the
14 baseline. Well, in hindsight, it doesn't seem to
15 make much sense to do something like that when
16 we're looking at a cumulative effect. (Gunn and Noble, 4844)

A Fundamentally Flawed CEA
Retrospective Analysis – Ignoring the past and creating a new normal

Wetlands and the new normal

Wetland area, just as an
20 example, 137,000 hectares in the study area,
21 1,400 hectares along the preferred route. The
22 impact assessment identifies agriculture,
23 drainage, forestry, right-of-way activities, as
24 threats to wetlands, and those effects are
25 evaluated against current conditions.

So in doing
1 that *we're not able to determine the significance*
2 of the effect, because there's no characterization
3 of wetlands in the past. In other words, a very
4 simple metric, what's the percentage of wetland
5 cover on the landscape over time? What have been
6 cumulative loss of wetlands in the study area,
7 spatially or temporally? So these are not
8 difficult parameters to identify over such a large
9 landscape, and t*hey had been done in assessments*
10 in Saskatchewan and Alberta on a number of
11 occasions in terms of looking at how these VECs
12 change over time. That's core to understanding
13 the cumulative effect, how the conditions have
14 changed from past to present day.

(see also aboriginal harvesters, Gunn and Noble, 4845 - 4846)

A Fundamentally Flawed CEA

Retrospective Analysis – Ignoring the past and creating a new normal

And we looked at the
23 panel's report on the Wuskwatim project,
24 generation transmission project, and identified
25 the exact same problem or criticism that we're
1 raising for the Bipole. This notion of, you know,
2 not using the words of a new normal, but *this*
3 problem of absorbing adverse past effects into the
4 current baseline condition precludes possible
5 remediation, restoration or mitigation for VECs
6 that may already be in an unhealthy or undesirable
7 condition. (Gunn and Noble, 4846/47)

This is the flawed, ossified analysis that Mr. Osler and Mr. Hegmann would have you believe is acceptable practice.

A Fundamentally Flawed CEA
Retrospective Analysis – failure to evaluate key trends

For contrast to Hydro's approach see supporting materials page 323 (Excerpt from Practioner's Guide)

1700 linear project – landscape indices employed

access density
stream crossing density
cleared areas
edge areas
core areas

Cannot have confidence in our ability to predict the future if we do not understand key trends

And even Hegmann's guidance is not new in
10 that regard. Some of the early work by Gordon
11 Beanlands and Peter Dunker, back to EARP, and that
12 was in the early '80s, where they identified
13 ecological guidance for cumulative effects
14 assessment, *emphasize the importance of trends and*
15 being able to explain changes in baseline
16 conditions. That's the information that we need
17 in order to predict impacts into the future. So
18 if we don't understand the past change, it's very
19 difficult to model or predict how things might
20 change moving forward into the future. (Gunn and Noble, 4848)

A Fundamentally Flawed CEA

Retrospective Analysis – failure to evaluate key trends

Key omission from the technical - neglecting the low hanging fruit

aquatic environmental technical report,
25 sorry, identifies surface water quality, fish
1 habitat, as key issues or key indicators of
2 concern. *So the question then that we ask, and we*
3 thought was an obvious, or very low hanging fruit
4 to grab on to, what's the relationship between the
5 number of stream crossings in the study area and
6 changes in water quality or changes in habitat
7 over time? How have stream crossings affected
8 water quality parameters? What's the relationship
9 between past stream crossings and fragmentation of
10 aquatic habitat? (4858/4859)

Type of parameters specifically cited Hegman (32 of supporting materials)

Common practice Salmo Consulting (Gunn and Noble, 4849)

Specifically identified threshold BC Environment (Gunn and Noble, 4849)

Obvious question not asked or answered in technical report
Why the failure of Hegmann and Osler to review the technical reports so glaring. Why the opinion of Hegmann so unsound and so inconsistent with his own recommendations.

A Fundamentally Flawed CEA
Retrospective Analysis – the absence of thresholds

the unfulfilled promise of the scoping document

The point is that *unless you have some*
established threshold, you can't really identify
or comment on the significance of the cumulative
effect. Now, those thresholds, they could be
ecological limits. So in the case of caribou and
habitat, we may have minimum viable population
levels, or minimum habitat in terms of, you know,
fragmentation metrics on the landscape, what's the
minimum that is required to sustain a population?
They can be ecological. Thresholds
can be benchmarks, or simply this is an acceptable
amount of change from past conditions, or they can
be stress, limits of disturbance. (Gunn and Noble, 4851)

But other than caribou and caribou habitat, we weren't
able to identify what those thresholds are that
are being used against which, you know, to support
the determinations or conclusions about whether an
effect, and a cumulative effect is significant or
not. *So we don't know what the standard or what*
the bar is that it's being measured against to
support the conclusions about the significance of
cumulative effects. (Gunn and Noble, 4852)

Note the scoping document indicates that

> the adversity of environmental effects will be determined based on predetermined factors and criteria. (Gunn and Noble, 4852)

A Fundamentally Flawed CEA

Perspective Analysis

Disregarding the recommendation of the CEC in Wuskwatim (see page 50 supporting materials)

And again, we go back to a
25 previous assessment, previous generating and
1 transmission project that was criticized because
2 the future's component, the predictive component,
3 was not extended beyond a ten-year period. *We*
4 found this assessment to be even more restrictive
5 than that ten-year period in terms of supporting
6 analysis for cumulative effects. (4853/54)

Conclusions cannot be drawn from the Analysis

But what we are saying is that you
14 can't conclude, as the EIS does in chapter 9,
15 about the significance or insignificance of a
16 cumulative effect on caribou or habitat, 10, 15,
17 20 or 50 years into the future, if the analysis
18 only went five years into the future. *So you*
19 can't draw a conclusion about a cumulative effect
20 ten years out, if you analyze only, or model only
21 five years of the assessment. (Gunn and Noble, 4854)

A Fundamentally Flawed CEA Perspective Analysis

Conclusions cannot be drawn from the Analysis

And, again, sort of some examples,
23 cumulative effects on terrestrial ecosystems,
24 vegetation and cultural heritage, we couldn't find
25 any analysis to support any of those observations
1 or conclusions in table 9.3. (Gunn and Noble, 4856, 4857)

A third example, no adverse cumulative
2 effects on the aquatic environment in coincidence
3 with the Wuskwatim, Keeyask and Conawapa.
4 we weren't able to find the analysis of cumulative
5 effects. (Gunn and Noble, 4858)

Again, that is the danger of Mr. Hegmann drawing conclusions about the analysis without relying upon the underlying reports.

A Fundamentally Flawed CEA

Failure to adopt a VEC centric approach

well canvassed in Supporting Materials (pages 4 and 5)

(see also Gunn and Noble, 4864 – 4866)

Failure to consider related hydro projects

(see also Gunn and Noble, 4867 – 4868)

(see also BP3 Coaliton submissions)

A Fundamentally Flawed CEA

What are the implications of a fundamentally flawed CEA?

In your view, in an environmental assessment, how important is a cumulative effects assessment?

22 MS. GUNN:
The importance of it perhaps couldn't be understated. There just simply is no way to truly understand the
25 significance of any project if you don't look at
1 it within the context of the other developmental
2 pressures in that area (Gunn and Noble, 5028)

A flawed CEA denies the trier of fact the opportunity to determine whether there are significant adverse effects

A Fundamentally Flawed CEA
An answer that risks being misunderstood

if a cumulative effects
20 assessment is badly or even fatally flawed, does
21 that make the whole environmental assessment badly
22 or fatally flawed?

23 MS. GUNN: No, because they are really
24 two different things. A project impact assessment
25 is to assess direct affects, and you can do that
1 well and you should do that well. A cumulative
2 effects assessment is not focused on the direct
3 immediate project effects, it is focused on a
4 different class of effects known as cumulative
5 effects. So you could do it very well, you could
6 do a direct impact assessment very well and still
7 miss the CEA. (Gunn and Noble, 5028/5029)

This point should not be misunderstood. Ms Gunn's point was directed towards distinguishing between direct impact assessment and cumulative effects assessment. Her point being that you could do a direct impact assessment very well and still miss the CEA. She was not suggesting that an EIS could be saved even if the CEA was fundamentally flawed.

A Fundamentally Flawed CEA Leads to an Environmental Assessment that is either bad or ugly

MR. NOBLE:
I just want to make sure I
2 didn't misrepresent my response earlier when i**t**
3 was asked of me by Mr. Bedford about whether I
4 thought the environmental impact statement was
5 good, or good, bad or ugly, and I said I wouldn't
6 comment. But the context of that question was
7 cumulative effects assessment aside, and just
8 looking at the EIS itself. And I think my
9 response was that we didn't review the EIS in that
10 thing to be able to comment. ***But if we include***
11 the cumulative effects assessment as part of the
12 Environmental Impact Statement, it would not be in
13 the good category. (5033)

A fundamentally flawed CEA

If cumulative effects is foundational then a revised CEA is inevitable

> You know, we're recommending that if it's serious business here in
> 1 terms of a cumulative effects assessment, and that
> 2 a cumulative effects assessment ought to be done,
> 3 then our bottom line is it wasn't done here. So
> 4 clearly, our recommendations *are that if it's*
> *5 important and deemed important to understanding*
> *6 the significance of the project's effects on the*
> *7 VECs, which we believe it's absolutely*
> *8 foundational to that, then, yes, we stand behind*
> *9 that recommendation* (Gunn and Noble, 4974/4975)

A fundamentally flawed CEA

Recommendation

That the CEC recommend to the Minister that Manitoba Hydro be directed to perform a cumulative effects analysis that accords with best practice.

That no final approval for the project be granted until that cumulative effects analysis is reconsidered by the CEC.

Note – this is a not a complex CEA compared to site specific analysis

Linear project such as this, they
3 probably don't come easier in terms of approaching
4 cumulative effects assessment. I mean, looking at
5 linear disturbance across a landscape is one of
6 the more easier types of assessment that we can
7 approach, using some basic tools, some basic
8 regression, some basic modeling, ALCES is
9 available for application in this. (Gunn and Noble, 4861)

(see also Gunn and Noble, 5025/5026)

Is Acceptable Cumulative Effects Analysis Required for Recommended Approval?

Supporting materials, p. 60, Osler

Supporting materials, pages 61 – 80, CAC legal team muses upon Mr. Osler's comments

Conclusion page 80 of supporting materials

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Some Important Strides during the Course of the Proceeding

troubled initial report – November 2011

Hydro experts had to be given guidance by CEC Irs

August 2012 Report – significant improvement

effort to assess current disturbance against 35% threshold

effort to predict future disturbance

some insight into annual rate of increase for certain herds (LAMBDA) as measured by annual survival and recruitment

Thanks to pressure from Province revised route for Wabodwen seen as improvement

Hydro should be commended for improving analysis and seeking to lesson impact

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

So what's the problem with caribou analysis and routing as it currently stands

time lag response suggests the need for extra caution in assessing the potential for significant adverse effects for caribou

cumulative effects analysis excludes consideration of impacts of bear – one of two major predators – identified by Dr. Rettie - leaves it impossible to safely conclude that no significant adverse effects

gaping hole in cumulative effects analysis relating to Reed Lake leaves it impossible to safely conclude that no significant adverse effects

in addition

Prospective cumulative effects analysis does not scenario major risks such as fire

Cumulative effects analysis does not consider or assess different vegetative management scenarios

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Two key studies presented in CAC Supporting Materials October 31, 2012

Rangefier, 2012, *Towards a Manitoba Hydro boreal woodland caribou strategy, Outcomes Manitoba Hydro Boreal Woodland Caribou Workshop*. (2765)

summarizing collective views of experts at workshop

among the authorities cited is Vors et al from 207, *Woodland Caribou Extirpation and Anthropogenic Landscape Disturbance in Ontario* (2767)

figures prominently in the EIS, fragmentation study and in technical report

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Time Lag response

time lag response - speaking of the phenomena that it may take, in terms of caribou population declining in response to natural and cumulative human caused disturbances, it can take years or even decades to detect and/or quantify (2772)

one of the challenges in the area of boreal woodland caribou is that actions that are taking place today the effects of those actions may not be seen for years or decades may not appear in a measurable context in the environment for years, or even decades. (2772)

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

The time lag effects suggests additional caution

Vors, *Woodland Caribou Extirpation and Anthropogenic Landscape Disturbance in Ontario* (2772)

generally well accepted in the literature in terms of this time lag effect (2775)

their study pointed to an approximately two decade lag between forest harvesting and caribou disappearance (2774)

> in terms of adaptive management, this time lag effect can pose challenges, given that success or failure of habitat interventions may not be evident for years, or even decades (see Vors)

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Ongoing uncertainty related to the success of habitat management plans

the temporal
5 scale of ecological processes often hinders the
6 long-term monitoring of the outcome of a strategy,
7 agreed?

8 MR. RETTIE:

Agreed. (2794)

most field studies employed to evaluate management
14 practices are of short duration and are unable to
15 assess the long-term persistence of animal
16 populations that are sensitive to forest
17 harvesting?
18 MR. RETTIE:
Agreed. (2794)

> Coupled with time lag, this raises additional uncertainty regarding the adapative management plan's utility

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Hydro has not modelled potential results

MR. WILLIAMS:
Okay.
And within that
15 context, sir, to your knowledge, has any modeling
16 been done in terms of the potential success of
17 those activities?
18
19
MR. SCHINDLER:
From Manitoba Hydro's
perspective or the research that we had done, no. (2796)

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

The Ability to respond to adverse events is impaired by low fecundity rate

Q. ungulates, woodland caribou have the lowest fecundity rates (2779) **A.** They have very low fecundity rates compared to other ungulates such as elk, moose, deer. (2779)

woodland caribou rarely produce twins (2779)

as compared to other North American ungulates, the successful recruitment of calves into the population is quite low (2779)

the survival of productive adult females as being critical to the conservation and recovery of this species (2780)

in terms of this species at risk that the herds are sensitive to even small reductions in reproductive potential, such as reduced members of breeding females in the population (2780)

within smaller populations, the additional loss of a few adult females could lead to a local population decline **(2780)**

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

vulnerability of caribou calves to predation by bears exacerbates risk

leaving aside the specific populations and
14 focusing on the vulnerability of the species, one
15 of the particular vulnerabilities is calves being
16 vulnerable to predation. (2783)

main cause of predation of caribou herds

MR. RETTIE:
I would say it's a combination of predation by wolves and *predation by bears*. (2785)

wolves are known, *bears are a great unknown*, their predation rate on neonatal animals, juveniles in the first couple of months of life is s*uspected to be high* but it's been very difficult to show. (2786)

one of the points from your workshop, indeed, was the importance of looking at the impact of bears in terms of their predation rates on young caribou (2786)

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

the Cumulative Effects analysis failed to reasonably explore the "great unknown" of bear predation on young caribou

in terms of the August 2012 technical report there was not a great deal of analysis in terms of bears (2786/87)

as one digs through that August 2012 report, the great unknown of bears do not figure prominently (2787)

The need for additional research was expressly flagged by the consensus of experts. Dr. Rettie identifies bears as "the great unknown" and one of two primary sources of risk. The essential failure of the CEA to assess this risk raises material concerns.

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

What Lambda does?

In terms of the sustainability of a
local population, you'll agree that it can be
encapsulated by lambda, which describes a ratio of
recruitment, including calf fecundity and survival
against mortality, the number of surviving adult
females (2791)

trying to calculate lambda, and you don't
have the recruitment data, you can't do the
calculation (2791)

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Failure to consider Reed Lake

Supporting Materials (page 85)

current disturbance

Reed Lake by far the highest

after potential future disturbance taken into account

Reed Lake by far the highest

i*n terms of altered habitat, it is the Reed Lake habitat which in your August 2012 report is in excess of 40 percent* (2792/93)

Supporting materials (page 86)

survival rate Reed Lake taken into account

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Failure to consider Reed Lake

Supporting material (page 87)

Not taken into account for annual recruitment

Supporting material (page 87)

Not taken into account for Annual Rates of Increase

August 2012 report did not explore the recruitment and lambda for Reed Lake (2791/92)

Supporting material (page 88)

Gaping hole in the assessment

disturbance levels

but no lambda

SIGNIFICANT UNRESOLVED QUESTIONS REGARDING A SPECIES AT RISK

Other limitations of caribou CEA (fires and vegetation)

In assessing the prospective cumulative
8 effects on woodland caribou, as found in your
9 August 2012 report, you *excluded fires* in the
10 prospective time period?
11 MR. SCHINDLER:
Yes, we did. (2817)

MR. WILLIAMS:
Okay.

Thank you.

14 Would I be correct in assuming that in your

15 cumulative effects assessment report, as produced

16 in August of 2012, that you did not scenario test

17 or stress test different mechanisms of vegetative

18 management as it related to the caribou?

MR. SCHINDLER:

That was not the

intent of the cumulative effects analysis, no. (2857)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

Fox Lake – Effects that are largely unmonitored, unmitigated and un-rehabilitated

Given this history and lived
2 experience, it is impossible for Fox Lake to view
3 the Bipole III project as discrete and unrelated
4 to past and future projects. *Bipole III is part*
5 of a process of hydroelectric development that
6 began in the 1960's and continues today. With
7 each additional project, Fox Lake's homeland is
8 more and more altered and destroyed by projects,
9 with a consequence that existing environmental
10 problems are compounded and magnified.
Fox Lake has reviewed Hydro's EIS for
12 Bipole III and has identified major flaws, both in
13 its methods and conclusions. (3940)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

Fox Lake – Effects that are largely unmonitored, unmitigated and un-rehabilitated

the uncontrolled hunting and
15 fishing by three decades of construction workers
16 contributing to the near extirpation of brook
17 trout and sturgeon from a number of local rivers
18 and streams. And finally, the myriad of gravel
19 pits cut and transmission lines and other
20 aesthetic eye sores that serve as constant
21 reminders of these projects. These are but a few
22 examples of the cumulative impacts that are
23 concentrated in the small geographic area that is
24 Fox Lake's homeland. *To date these remain largely*
25 unmonitored, unmitigated, and un-rehabilitated. (3939)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

Fox Lake – Effects that are largely unmonitored, unmitigated and un-rehabilitated

First, the EIS treats the impacts as
15 though they were similar throughout the entire
16 project's footprint and as though they were
17 distributed equally among all communities and all
18 landowners along its route. The EIS fails to
19 adequately describe the extensive and intensive
20 impacts that have and will occur in this small
21 geographical area. Fox Lake people and their
22 lands are unique in terms of the magnitude of
23 past, present and future impacts, and this should
24 have been acknowledged in the EIS. (3940)

Second, the EIS failed to show how the
3 proposed Keeyask and Conawapa projects are
4 intertwined with the south access road, Bipole III
5 transmission lines, the Keewatinoow converter
6 station, and the electrode site.

Fox Lake considers the failure to
20 acknowledge the interconnectedness among projects
21 as a second major flaw. (3941)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

TCN – Cascading Impacts

For TCN, the environment cannot be
12 divided into component parts and assessed.
13 not divisible and separate from our cultural
14 identity. (5459)
15

As indicated by the following excerpt
17 from Volume II of the Split Lake Cree Post Project
18 Environmental Review, History and First Order
19 Effects, August 1996, almost 124,000 acres of land
20 in our resource area have been affected by 35
21 Hydro projects, including generating stations,
22 converter stations, transmission lines, including
23 Bipoles I and II, power lines, roads and rail
24 spurs and other related infrastructure. (5463)

The transmission line, collector
5 lines, construction power line and the ground
6 electrode line are about 437 kilometres in length
7 across our resource area, out of a total length of
8 1,584.5 kilometres. (5467)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

TCN – Cascading Impacts/Significant Impacts

TCN members find that the EIS
8 determination that Bipole III will not cause any
9 significant residual effects very difficult to
10 understand or accept.
11 We do not understand the incorporation
12 of the federal guidance *where initially a residual*
13 effect is only significant if effects are
14 long-term, greater than 50 years, have a large
15 magnitude, easily observed, measured and
16 described, and have a high geographic extent,
17 extend into the project study area.
18 For TCN, the fragmentation and the
19 resulting cascading range of impacts caused by 437
20 kilometres of transmission lines through our
21 ancestral homeland will cause, in any ordinary
22 sense of the word, *significant impacts*. (5473)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

TCN – Cascading Impacts/Significant Cumulative Effects

We do not agree with the Federal guidance that there will be only be cumulative effects from Bipole III if its effects overlap temporally and spatially with past projects. The 35 Hydro projects in our RMA have been determined to have no temporal effects and are largely included in the environmental baseline. *To TCN, these projects may have occurred in the past but their effects are felt everyday. To us, they are cumulative in the understood sense of the word. Each project has caused additional effects which have accumulated over the last 50 plus years. Bipole III will cause additional impacts.* (5473/5474)

a message that came through very, very clearly from all of those interviews, is the human impacts, the stress. (5495)

. . .

I have heard members speak of, and the obligation that have to care for the land and the waters, and the sense that not having done so, or to not do so, is an impact of the highest order. And its an obligation that they feel to the land and waters, and to future generations. And I would say that there's some very deep feelings around that. (5495/5496)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

York Factory – Irreversible Impacts

Even though York Factory is moving forwards with the Keeyask Project as one of the owners and project partners, our Elders remind us that the York Factory First Nation should not – and cannot – forget that we experience the cumulative and irreversible social, cultural, spiritual and environmental impacts of Manitoba hydro's previous projects every single day. (Tab 1, page 7)

York Factory is very concerned that Manitoba Hydro has not meaningfully sought the Traditional Knowledge of York Factory regarding the study of caribou in the Bipole III study area, along the preferred route and in the Lower Nelseon River and Hayes River areas generally. (Tab 1, page 12)

Particularly in respect of pursuit of a better understanding of caribou in the Bipole III Study Area and along the preferred route and in the areas of other Project elements, Manitoba Hydro has failed to accord the Traditional Knowledge of York Factory with equal importance and value. (Tab 1, page 14)

Ongoing Significant Adverse Effects upon Fox Lake, TCN, York Factory

Recommendation

That the CEC accept the evidence of Fox Lake, TCN and York Factory that the effect of BP III in combination with the effect of other Hydro projects has an ongoing and significant adverse effect upon traditional lands, traditional eco-systems and traditional peoples.

Hydro's Socioeconomic analysis is flawed by the failure to assess material potential health impacts

Some notable omissions

It would be accurate to suggest to
7 you that your report d*oes not present baseline*
8 indicators for gastrointestinal disease outbreaks;
9 agreed?
10 MS. HICKS:
That's correct.
11 MR. WILLIAMS:
And it would again be
12 accurate to suggest to you that your report *does*
13 not present baseline indicators for current rates
14 of sexually transmitted disease in the area?
15 MS. HICKS:
That's correct. (3732)

Hydro's Socioeconomic analysis is flawed by the failure to assess material potential health impacts

Some more notable omissions

looked at your report, it does not present
9 baseline indicators for *perceived life stress*;
agreed?
11 MS. HICKS:
Correct. (3729)

your report does not present
18 baseline indicators for *self-rated mental health*?
19 MS. HICKS:
That's correct. (3729)

Hydro's Socioeconomic analysis is flawed by the failure to assess material potential health impacts

While acknowledging she is not an expert in health impact effects, Ms Hicks asserts that there is not an assertainable effect from the project related to mental well being

Are you presenting yourself as
7 an expert in the health impact effects of large

8 natural resources projects like this?

9

MS. HICKS:

No, I'm not an expert. (3731)

there is not an environmental effect from the project that can be attainable or assertable to mental well-being. (Hicks 3730)

Hydro's Socioeconomic analysis is flawed by the failure to assess material potential health impacts

While acknowledging familiarity with the NEB guidelines, Ms Hicks persists in her denial

So you are
4 familiar with their guidelines, guide A 2,
5 environment, environmental and socioeconomic
6 assessment?
7 MS. HICKS:
Yes. (3733)

Excerpt from Guideline at page 92 of supporting materials

Hydro's Socioeconomic analysis is flawed by thefailure to assess material potential health impacts

Dr. Lee and Ms Orenstein beg to differ

clear experts in the effects of large natural resource developments on human health

retained by leading corporate good citizens, WHO presentations

Hydro's Socioeconomic analysis is flawed by thefailure to assess material potential health impacts

There is no controversy

among those working in the
23 field, is there any real controversy about the
24 suggestion that the resource development process
25 can bring changes to social and cultural
well-being?

DR. LEE:
No, there's absolutely no
3 controversy. (5089/90)

Do regulators like the
National Energy Board recognize this knowledge?
DR. LEE:
Definitely.
The National
16 Energy Board, we have referenced the filing manual
17 of the National Energy Board. And it's right in
18 there that you need to address any adverse social
19 or emotional stressors resulting, or potentially
20 resulting from a project, which includes
21 disruption of normal daily activities, normal
22 daily living activities. So it's in there that
23 you do need to address these things.

Hydro's Socioeconomic analysis is flawed by the failure to assess material potential health impacts

Serious Gaps Exist

Stress and mental health are more or
13 less just passed off as being non-significant.
14 Infectious disease gets pretty well no mention.
15 These are things that in the field of health
16 impact assessment you would always scope into a
17 report. (5092)

> see discussion of mental health (5083/5084) and infectious disease and experience in BC (5084/5085/5093/5094/5095)

Recommendation

That the CEC prefer the evidence of Dr. Lee and Ms Orenstein and find there are significant gaps in the analysis of potential effects of the project related to human health

There are direct and indirect exposure pathways in terms of clearing, dust generation, diesel exhaust and the burning of debris

Construction emissions are quite significant

23 Construction emissions are quite significant based
24 on the overall area of land that will be impacted,
25 in terms of clearing, dust generation, diesel
exhaust, burning of debris. (5062/5063)

Bipole III, the sources
16 would, yes, nitrogen dioxide will be emitted, CO
17 will be emitted, PM2.5 will be emitted, VOCs, yes,
18 from Bipole III are primarily related to the
19 burning of slash and debris, forest debris.
20 Polycyclic aromatic hydrocarbons, this was not
21 mentioned in the EIS for Bipole III, but these are
22 very significant result of diesel combustion.
23 There's quite -- we all have seen diesels with the
24 black smoke coming out. Well the black smoke is
25 this stuff, polycyclic aromatic hydrocarbons.

1 *Some of these chemicals are quite toxic*,
2 benzopyrene, carcinogenic.
3 carcinogenic, some of the PAHs are carcinogenic,
4 heavy metals associated with the combustion of
5 wood.
6
Some of the VOCs are
I also mentioned in my brief that
7 dioxins can and have been shown, documented to be
8 emitted by forest fire emissions, quite
9 surprisingly high levels of dioxins. (5060/5061)
I

There are direct and indirect exposure pathways in terms of clearing, dust generation, diesel exhaust and the burning of debris

There are direct and indirect paths to known human receptors (5061/502)

So there would be urban community
residents, rural non-farming residents.
1that like living in the country but don't farm.

. . .
so rural farming residents would be a local receptor to be assessed.

. . .

Potentially highly exposed groups such
2 as First Nation peoples, a lot of country food,
3 and Hutterite communities. These people would be
4 more highly exposed as a result of their diet and
5 the other receptors we're looking at. (5062)

There are direct and indirect exposure pathways in terms of clearing, dust generation, diesel exhaust and the burning of debris

The Mitigation proposed by Hydro may be inappropriate

An example of the type of mitigation
24 that may result from a human health risk
25 assessment such as this would be risk, we see risk
1 quotients associated with the burning of debris.
2 We may see some elevated VOC concentrations, we
3 may see some elevated dioxin concentrations in the
4 local study area for relatively short periods of
5 time. But as a result of that, the type of
6 mitigation that may come out of that is related
7 to -- I saw somewhere in the EIS a comment that
8 most of the debris would be burned during winter
9 months, and I have a problem with that. *I don't*
10 think that's a very good idea because of the fact
11 that typically in the winter months, that's when
12 you get very stable atmospheric conditions that do
13 not result in very good dispersion. You get a lot
14 of inversions occurring in the winter time. So
15 the EIS does state during reasonable weather
16 conditions, but I don't think they are taking into
17 account, when they say they are going to burn in
18 the winter, the likelihood of inversions or stable
19 atmospheres.

There are direct and indirect exposure pathways in terms of clearing, dust generation, diesel exhaust and the burning of debris

The Mitigation proposed by Hydro may be inappropriate

So I would suggest that's an issue
I'm going on in terms of the
22 mitigation associated with that.
You might want
23 to have relatively remote locations where the
24 burning takes place, so that local residents are
25 not impacted by the smoke and the dust and the
1 fumes, or of course you can do relatively small
2 burns over a period of time. But that's the type
3 of mitigation that I don't think would be obvious
4 until the risk assessment is done and we identify
5 a true risk that has to be mitigated. (5074 to 5076)

There are direct and indirect exposure pathways in terms of clearing, dust generation, diesel exhaust and the burning of debris

12 And I had an issue with the EIS, the
13 Manitoba Hydro EIS, because they said that human
14 health risk assessment is only justified under
15 conditions of real risk of emissions or
16 contaminants of exposure in direct pathways.
17 that's stated as part of their EIS, and it's also
18 in their follow-up IR responses.
19

Well, there is definitely real
20 emissions here, and there's definitely direct and
21 indirect exposure pathways.
22 So I believe, based on that, I believe
23 that based on the quite significant emissions
24 coming from construction, that risk assessment
25 using this approach is justified. (5064)

Recommendation

There the Commission find that in terms of the construction of BP III, there are direct and indirect exposure pathways in terms of the emissions from clearing, dust generation, diesel exhaust and the burning of debris and that risk assessment is justified

Significant Adverse Impacts on the Practice of Modern Agriculture

generally persuaded by BP3 witnesses

Nielsen cross 3600 to 3718

powerful testimony of community members

work of CAC MB with Manitoba First underscoring the importance of local sustainable agriculture

Recommend

CEC find significant adverse effects on modern agricultural practices.

Wildlife Assessment and Flaws in the determination of Significance

Concerns with significance rating approach

> Supporting materials page 95 and pages 4905 through 4911 – in particular

almost impossible to find a significant impact for wildlife

So I think a key point here is that
13 using the criteria that you used in the Bipole III
14 Environmental Impact Statement makes it almost
15 impossible to define an impact as significant for
16 wildlife. And I'd also like to point out some
17 other environmental impact assessments do use
18 discipline specific criteria, so it's not an
19 impossibility. (4913)

I'm concerned, however, that they
12 examined 30 wildlife species and groups, and not
13 one of those was found to have any significant
14 impact associated with it.
15 be inaccurate and maybe even incorrect, because
16 the criteria they used for wildlife were not
17 appropriate for wildlife. (4916)

Wildlife Assessment and Flaws in the determination of Significance

Can we safely conclude that there are no significant impact on wildlife?

MR. WILLIAMS: Just following up a
17 question of the Chair to you, Mr. Skinner. In
18 terms of your characterization of the wildlife
19 assessment performed by Manitoba Hydro, given the
20 shortfalls you have identified in terms of
21 potentially inappropriate impact criteria for
22 wildlife, can we safely conclude that there are no
23 significant impact ratings for all wildlife
24 species and groups?
25
MR. SKINNER:

No, I don't think we
1 can. (5032/5034)

Wildlife Assessment and Flaws in the determination of Significance

Skinner supported by Stewart

18 And the CAC outlined other issues that
19 they had with the criteria used by Manitoba Hydro,
20 and in particular the reversibility concern that
21 they outline. We're in agreement with them that
22 there are issues with using that to determine
23 significance. (Stewart, 4370)

Skinner implicitly supported by TCN

Potentially Significant Concerns MMF Breadbasket, Pine Creek Backyard, WS FN declining traditional lands

areas under significant stress

potential threats to the blueberry patch

moose in precipitous decline

causes uncertain

schindler credibility issues

Schindler in a repeated rush to judgement

Round 1 of CEC irs

Route adjustments wildlife driven

Potentially Significant Concerns MMF Breadbasket, Pine Creek Backyard, WS FN declining traditional lands

cumulative effects assessment appears to be deficient in not understanding or fully addressing potential impact of bison and bison enclosure (6462 – 6465)

And the point that my
7 clients have understood from you, through your
8 cross-examination, again your statements this
9 morning, is that you are of the view that there is
10 a gaping hole in terms of Manitoba Hydro's
11 knowledge related to this bison enclosure. Fair
12 enough?
13
MR. MILLS:

It's everyone's knowledge.
14 We don't know, Hydro doesn't know, Conservation
15 doesn't know. (6463)

Potentially Significant Concerns MMF Breadbasket, Pine Creek Backyard, WS FN declining traditional lands

ongoing data concerns (see transcript 6096 - 6107 – Mills Nd Hydro panel)

March letter of Ms Stewart suggests ongoing concerns

challenges in untangling roots of population decline

note conclusions of conservation (98 – 101) supporting materials

Recommendation

The project in combination with past, present and future developments may have potentially significant adverse effects on:

the “berry patch” and other traditional harvesting practice particularly as practiced in the Metis Breadbasket and the Pine Creek backyard;

a moose population that is in “precipitous decline” in parts of the Parkland region.

That significant and unresolved uncertainty exists with regard to: the impact of significant landscape features such as bison enclosure on the moose population

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

a more collaborative approach/stronger evidence

more collaborative approach

one of the stronger aspects of Hydro's application (perhaps not as originally written but as developed during meetings with our experts, evidence in the proceeding and dialogue with others)

recommend the evidence Diduck/Fitzpatrick

favourably cited by Hydro witnesses

careful analysis of strengths and weaknesses

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

gaps still exist

What was disconcerting for me to some
14 degree was the lack of a full discussion of the
15 implications of uncertainty, the implications for
16 human interventions in complex systems, and for
17 decision-making and planning within the
18 organization and/or the AEM team. (5707)

So this caused us to query the extent
18 to which there is a recognition among key decision
19 makers in Hydro that EAM is difficult, it's a
20 challenge, it's time-consuming, it requires
21 ongoing investment and commitment. [missing word]
22 will the investment and commitment be there for an
23 active and participatory experimental approach
24 over the long haul? (5710)

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

gaps still exist

13 Another, in our view, notable weakness
14 is the lack of open and transparent detailed plans
15 regarding active experimentation. Without those
16 plans, it's difficult to determine whether there
17 are safe and rewarding conditions for AEM, and
18 whether there will be sufficient resources for an
19 ambitious approach to adaptive environmental
20 governance and management. (5740/5741)

(see evidence Stewart, p. 4386 4387)

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

Independent Oversight is warranted

What they emphasize is independent
2 oversight should be considered when there is, when
3 there are overlapping mandates where different
4 branches of government are proponents and
5 regulators, where there are questions of issues of
6 trust, and where there are questions of geography,
7 both in time and space. 5743

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

Who guards the guardians

Independent oversight is when you have
10 an institution, or create an institution separate
11 from government and the proponent, with a role in
12 monitoring, or in reference to Dr. Gibbon's
13 question, who guards the guardians? The chair of
14 my department suggested I pronounce this, "Quis
15 custodiet ipsos custodes," who guards the
16 guardians, or who regulates the regulators?
17

The basic function of independent
18 oversight is to demonstrate accountability for the
19 appropriate, proper and intended use of resources.
20 We want to make sure, in the context of resource
21 management, that the system of monitoring that's
22 laid out is appropriate, and there is a dearth or
23 a lack of implementation gaps. And to do that, we
24 want to ensure that there is accountability. (5722)

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

Importance of Baseline to Independent Monitoring

You actually want to have a baseline in your
3 impact statement. (5719)

AEM is especially
14 effective when it builds on effective impact
15 assessment. (5745)

Recommendation

complete its adapative management plans for wildlife corridors, access, vegetative management and independent monitoring in concert with Manitoba Conservation and affected First Nations and the MMF

Good adaptive management cannot compensate for material flaws in the effects analysis or fundamental flaws in the CEA

But if an impact
16 assessment fails to identify in a fundamental way
17 impacts on a baseline, or impacts on a system,
18 then the mitigation strategies that are put in
19 place could be misguided, the adaptations that are
20 used to adjust that mitigation will be misguided,
21 will just miss the mark. (Diduck, 5746)

if the home is to collapse, there is no
23 adaptive management approach that's going to help.
24 You can't use an adaptive approach to fix a flawed
25 assessment. (Diduck, 5747)

(see also Skinner (4918, 4919)

Route Selection
material concerns

see submission of BP3 and evidence of Mr. Berrien

Is delay unduly risky?

Context is important

the BP3 solution to Riel has been off and on the Hydro books for over 2 decades (Mazur, 6437/6438)

scheduled at one time for early 2000

the reliability solution was rejected at the time of Limestone in part on the grounds of expense (Mazur, 6440, “significantly negative effect on Limestone's economics)

even after the wind event of 1996,

it took until to 2001 to get BP3 back on the books (Mazur, 6438)

Is delay unduly risky?

Context is important

> Hydro rejected the "attractive option" of a the relocation of BP II to Riel (Mazur, 6435) notwithstanding the reality it would have offered a quicker solutions to Dorsey related risks (Mazur, 2013)

1 But in doing so, you had to live with the risk of
2 a catastrophic failure at Dorsey for a few more
3 years. Agreed?
4 MR. MAZUR:
I believe so, yes. (6443)

Hydro's assertions of urgency must be tempered by recognition of the uneven pace at which they have approached the issue

Is delay unduly risky?

The load forecast on which the original EIS was based was materially overstated

> relying upon the 2011 Load Forecast hydro alleged that it was facing a 1500 MW deficit in 2017
>
> an updated load forecast suggests the 1500 MW deficit will not be reached until 2019 (6347)
>
> former Hydro VP, Art Derry suggests there are grounds to question whether the more recent load forecast is reliable

you had some
8 concern that the Manitoba Hydro load forecast
9 might be overestimating the load in future years.
10 Do you remember making a statement to that effect?
11
MR. DERRY:
I did say that and I
12 compared it to the 20 year load growth from '92 to
13 2012, 44 megawatts per year and the new forecast,
14 2012 to 2032 is using 83 megawatts per year. (6345)

Is delay unduly risky?

Questions have been raised by the PUB regarding the reliability of Hydro's recent load forecast

13.6.0 BOARD FINDINGS

It is the Board's view that MH's most recent domestic load forecasts for the longer term:

do not adequately recognize the longer-term implications of the recent economic downturn;

· may well be overly optimistic given the stagnation and/or lack of growth over the last five years in the industrial sector; particularly when coupled with the actual pulp and paper plant closure and imminent smelter closures; and

do not support the significantly advanced dates for new generation, but rather, in the absence of the new contracts, suggest a 2024/25 in-service date for domestic load only. *Order 5/12* (122 - 123)

WHAT ARE THE CONSEQUENCES OF NOT ASKING MANITOBA HYDRO TO IMPROVE ITS ANALYSIS?

That's an interesting
7 question. I would assume for any project that,
8 you know, the Minister has to weigh the needs and
9 the merit and the benefits against what the costs
10 are, you know, the environmental, socioeconomic
11 costs. I would assume that applies to any
12 project, that choice has to be made. I guess in
13 this particular case what the Minister is missing
14 is information on the cumulative effects of the
15 project. So he would have to make that choice and
16 that decision based on incomplete information.
17 And so hence, our recommendation that this is an
18 important piece, because it's not possible for the
19 Minister to understand the effects or the
20 significance of the effects of the project without
21 the cumulative effects analysis. (Gunn and Noble, 4979)

Delay is necessary/It may be inevitable/It is not fatal

Challenges in assessing the advisability of the Project in the absence of a NFAT analysis

I would assume for any project that,
8 you know, the Minister has to weigh the needs and
9 the merit and the benefits against what the costs
10 are, you know, the environmental, socioeconomic
11 costs. I would assume that applies to any
12 project, that choice has to be made. (Gunn and Noble, 4979)

In this proceeding, while Minister has to weigh those factors, Manitoba consumers and other stakeholders denied the right to weigh the benefits and costs of this project against the Need for and Altenatives to?

CAC MB of the view bad public policy, unfair to their ability to develop informed position and impairs their ability to make meaningful representations

IS IT RADICAL TO SUGGEST THAT HYDRO BE ASKED TO IMPROVE ITS ASSESSMENT PRIOR TO A FINAL DETERMINATION BEING MADE?

Other expert tribunals have asked for better evidence:

Cheviot Coal Mine

And we saw this issue come up in the
17 Cheviot Coal Mine case as well, where there was a
18 criticism of Cardinal River Coals for not
19 including the impacts and the detailed plans of
20 other project developments in the region. They
21 were sent back to the drawing board to gather that
22 sort of information. (Gunn and Noble, 4932)

Northern Impact Review Board

2 There was a case with the Northern
3 Impact Review Board, NERB, where they actually
4 postponed the project because the community wasn't
5 involved in, really in the determination of
6 significance. So there was no feedback from the
7 community there, or they weren't involved in the
8 whole process the way I understand it to really be
9 involved in that determination of significance.
(Stewart, 4387/4388)

IS IT RADICAL TO SUGGEST THAT HYDRO BE ASKED TO IMPROVE ITS ASSESSMENT PRIOR TO A FINAL DETERMINATION BEING MADE?

Other expert tribunals have asked for better evidence:

Alberta

I can just say, at least
22 in Alberta, if an application with this degree or
23 lack there of detail came forward, I can tell you
24 unequivocally, it would be just sent home. The
25 board wouldn't even make a decision on it. (Berrien, 5400/01)

Chartrand, March 11, 2013 (notes not from transcript)

> Hydro has been in this game for a long time. They know what should be done. Maybe you should be the first to tell Hydro that you just can't do what they want anymore.

The challenge

- Not all mistakes of the past can be fully corrected or ameliorated
- However, going forward, it is incumbent upon all to listen, to employ existing mechanisms with courage, with diligence and with ingenuity

THANK YOU TO THE PANEL
GOOD LUCK

PS: We endorse the recommendations made by our experts in this proceeding and are prepared to compile them if the CEC requests.