

## References

The YUB shall report and make recommendations about the necessity for Mayo B and its timing and design, with particular regard to

- a. The public need for Mayo B under various reasonable electric load forecasts including near term requirements related to Minto, Bellekeno and Carmacks Copper mines and to any other potential major industrial customers and the effects of the project on the rates of customers.*

### References:

#### Main Driver or Need for project

- Section 4.1 of Application, pages 21-22 summarizes overall need for project; Application, Section 4.1.1 at pages 22 - 25 (need based on opportunity); Section 4.1.2 at pages 25-31 (economics of project)
- Table 1 – summary of no cost federal and YCS funding sources
- YUB-YEC-1-41
- YUB-YEC-1-35
- YUB-YEC-1-36
- YUB-YEC-1-46

#### Business case for Mayo B provided

- Application Section 3.1.2 (project costs, financing and economics) and 4.1.2 (economics of project)
  - Figure 1 (page 14 of Application – Mayo B annual costs and diesel savings)
  - Figure 2 at page 29 of Application (overall contribution of Mayo B to forecast generation requirements – highlights remaining baseload diesel generation requirements)
  - Figure 4 at page 39 of Application (Figure 1 without Carmacks Copper load)
- YECL-YEC-1-2 (application provides detailed justification for project including need, risk of proceeding and effect on ratepayers)
- YUB-YEC-1-26 (g) and (h)
- YUB-YEC-1-25 (electronic models)
- YUB-YEC-1-37(e) (loss of funding)
- CW-YEC-1-11 (decision to proceed)
- CW-YEC-1-5(b) (cost/benefit)
- CW-YEC-1-1 (supporting documents from 2008/2009 GRA)
- Footnote 42 at page 29 of Application and UCG-YEC-1-12 (incremental cost of diesel)
- UCG-YEC-1-5 Revised and Transcript page 244-47 (cost per MW vs LCOE)

Rate impacts

- Exhibit B-8, pages 1-2; 8-12
- Transcript page 41-42
- Section 4.3 effect of project on ratepayers; section 4.3.2 at pages 41-32 addresses ratepayer diesel cost savings effects
- Transcript page 244 (federal funding reduces cost of renewable power to the BC level)
- Transcript page 248-49 (government subsidized projects)

- b. The capability of existing and currently committed new transmission and generation facilities to provide reliable electric power generation to meet the forecast load requirements, taking into account the new planning criteria as proposed by the YEC and recommended by the YUB***

References

- Attachment C – Capability of Existing System
  - YUB-YEC-1-6; CW-YEC-1-10 (capacity planning criteria and YEC's position on including industrial customers in LOLE calculation); transcript page 350-55;
  - YUB-YEC-1-9 (Minto diesels)
  - YUB-YEC-1-11 (Firm load at peak without industrials is provided in response to YUB)
  - YUB-YEC-1-12 (peak loads including industrials)
  - YUB-YEC-1-14 (inclusion exclusion of industrials from criteria);
  - YUB-YEC-1-15
  - YUB-YEC-1-43 (updated analysis being undertaken)
  - YUB-YEC-1-41 (capacity of existing and currently committed facilities)
  - YUB-YEC-1-42 (need for Mirrlees to satisfy capacity planning criteria)
- i. The implications of approving Mayo B prior to the environmental and socio-economic assessment and regulatory approval of the Mayo Lake Drawdown (including how, if at all, Mayo B's expected impact on YEC and its customers differs according to whether the Mayo Lake Drawdown is permitted or not***

References:

Mayo B is economic without the additional 1metre drawdown

- Application page 37-38
- YUB-YEC-1-23
- YUB-YEC-1-3

- UCG-YEC-1-2

Timing for Mayo Lake

- Application Page 16
- YUB-YEC-1-4

YESAB issues related to Mayo Lake

- Application, footnote 1
- YECL-YEC-1-25
- UCG-YEC-1-19

***ii. The relationship between Mayo B and CSTP Stage 2 completion***

**References:**

- Application section 3.3 (page 18)
- CW-YEC-1-8 (a) and (b)
- Attachment E – Agreement for the Yukon Green Energy Legacy Project
- YECL-YEC-1-4; UCG-YEC-1-26(Energy Project Certificate)
- Exhibit B-8, page 7 and 11; Transcript Page 41

***c. The risks facing Mayo B and their potential impacts on rates for customers including but not limited to the risks arising from***

***i. Changes to general economic, market or financial conditions***

**References:**

- Risks and measures to mitigate risks on ratepayers related to Mayo B are discussed in the Application at sections 4.2 and 4.3
- Application section 4.2 addresses risks; discussion at page 35-36 deals with capital cost increase risk and other construction risks while discussion at page 36-37 deals with other project feasibility risk including risks related to delay completion of CSTP Stage 2 and delay in licencing of Mayo Lake enhanced storage
- A discussion of escalation factors, loading, financial measures, term of project and associated ancillary costs is provided in section 3.1.2 and 4.1.2 of the Application
- CW-YEC-1-12; CW-YEC-1-13; CW-YEC-1-14; CW-YEC-1-15
- UCG-YEC-1-25(b)
- Exhibit B-8 pages, 9-12

***ii. Any mitigation measures and/or modifications to project design or schedule required by the environmental and socio-economic assessment and regulatory approvals***

**References:**

- Anticipated timeline for regulatory approvals (see page 15 and 16) Exhibit B-8 , pages 12-14 provides update on project timelines
- Regulatory risks are addressed at page 34 and 35 of the Application; at page 35 YEC notes the measures it is undertaking to mitigate risks of delay. Page 35 also notes specifically that YEC anticipates minimal environmental/regulatory cost risks arising from the YESAB and other permitting processes given that the project enhances existing assets without the requirement for a new dam or any further flooding.
- Exhibit B-8 notes at page 12 that no major issues have been identified in YESAB Draft Screening Report
- Transcript page 357-58; page 266-69

***iii. The timelines and other conditions contained in the Federal Agreement***

**References:**

- The Federal Agreement is provided as Attachment E of the Part III Application; Application notes in section 4.2 at page 34 the requirement for substantial completion of the Project on or before March 31, 2012
- CW-YEC-1-2; CW-YEC-1-12(d); UCG-YEC-1-1; UCG-YEC-1-5; UCG-YEC-1-14; transcript page 322-25 describe conditions of the Federal Funding Agreement

***iv. Loads forecasts, both industrial and residential , not being realized***

**References:**

- Attachment D of the Application
- Application Page 38-40; (load risks and diesel cost savings)
- Application Page 45; (proposed flexible debt mitigation)
- YUB-YEC-1-25(d), (f)
- CW-YEC-1-15(b)
- CW-23 (non-industrial)
- CW-24 (industrial)
- UCG-YEC-1-25; UCG-YEC-1-27 Revised
- Exhibit B-8 page 2
- Transcript page 252-253 (level of mining interest over past several years)

***v. Unanticipated cost overruns or project financing capability***

**References:**

- Application page 35-36
- YECL-YEC-1-5 Revised (provided in response to CW-YEC-1-1)
- CW-YEC-1-5
- CW-YEC-1-12 (construction management approach)
- UCG-YEC-1-6 Revised (independent 3<sup>rd</sup> party review of cost estimates).
- MOU competitive bid process and MOU contract – YUB-YEC-1-24; YECL-YEC-1-6 and YECL-YEC-1-26
- Exhibit B-8 Page 12 and 13
- Transcript pg 43 to 46; 75-76; 185-197; 318-22 describes construction contract and alliance model with Kiewit, contingencies and cost overruns

***vi. The possibility that the Mayo Lake Drawdown does not proceed***

- Application page 37-38
- YUB-YEC-1-23
- YUB-YEC-1-3
- UCG-YEC-1-2
- Transcript Page 40-41; Exhibit B-8, page 11

***d. What, if any, alternatives to Mayo b might be advisable given reasonable load assumptions and risk assessments. In particular, the YUB shall report on***

***i. Possible alternative configurations for timing and structure of the Mayo B as proposed by YEC***

***ii. Whether it is prudent to build Mayo B at this time***

**References:**

- Section 4.1.3 of the Mayo B Part III Application
- Attachment A-2 of Application excerpts the discussion of alternatives and alternative configurations provided in the February 27, 2009 Mayo Hydro Enhancement Project proposal to YESAB
- Exhibit B-8 reviewed YEC's resource planning process
- UCG-YEC-1-3 REVISED (Resource Plan and Mayo B)
- CW-YEC-1-1 Attachment 1 (provides YEC-YECL-1-5 and UCG-YEC-1- 89 from 2008/2009 GRA)

- YCS-YEC-1-12 - demand side management scenarios investigated to meet future load
- Attachment A1 (pages A2-9 to A2-8 11) to the Application, provides "Assessment of Potential Hydroelectric Sites Concept Phase Study – Executive Summary" at page A2-11; this is a summary of the development schemes reviewed in 2007 by YEC
- YECL-YEC-1-10 - cost per Megawatt of other projects being considered
- YECL-YEC-1-18
- YCS-YEC-1-11 - replacing the existing Mayo Hydro facility turbines with newer more efficient ones
- Transcript page 269-79 (alternatives considered; wind)