

**YUKON ENERGY CORPORATION  
20-YEAR RESOURCE PLAN: 2006-2025**

**Utilities Consumers' Group  
Information Request No. 1**

- **GENERAL**

Please provide a copy of the following:

- 1) December 7, 1992 Report to the Commissioner in Executive Council by the Yukon Utilities Board concerning the Review of the Capital Resource Plans of Yukon Energy and Yukon Electrical;
- 2) Order-in-Council 1995/90 governing the requirement for industrial customers to pay the full cost to serve them and any new customers also required to pay all cost to connect the existing grid to their site (including any new transmission lines or new energy supply options) such that existing customers are not adversely impacted by the new customer;

Please give Yukon Energy's interpretation of this OIC.

- 3) The cost allocation and rate design model that will be used to determine costs to serve these new industrial customers including:
  - i. the cost per kilowatt-hour to serve Sherwood Copper
  - ii. the cost per kilowatt-hour to serve Carmacks Copper
  - iii. the cost per kilowatt-hour to serve each of the other rate groups after each new customer has been added to the system.
- 4) Aishihik Water License as well as details of the costs incurred to procure this license (including internal costs and overhead) and an explanation of how Yukon Energy has accounted for these costs within its revenue requirement.
- 5) Whitehorse Facility Water License as well as details of the costs to procure this license (including internal costs and overhead) and an explanation of how Yukon Energy has accounted for these costs within its revenue requirement.

- **PRELIMINARY ISSUES LIST**

- 6) Reference: Issues List – Lack of Joint Planning Process
  - b. Has the proposed 20-year resource plan and proposed projects been developed and evaluated with appropriate information and input from Yukon Electrical Company Limited (YECL)?
  - c. Please provide details of how the proposed 20-year resource plan

- accounts for YECL production in its forecasting models?
- d. Please explain how Yukon Energy accounted for any potential expansion of YECL production and/or new YECL capacity projects.
- 7) Reference: Issues List – Capability of Existing Facilities and Resources to Supply Forecast Loads
- e. What is the capability of Yukon Energy’s existing facilities and resources to provide reliable electrical power generation to meet the forecast load forecast requirements?

8) Reference: Issues List - Near-term peak shaving consideration

YEC indicates that if loads develop, further consideration will be given to Demand Side Management programming focused on both the reduction of system peak demand and energy conservation, and development of new wind generation (if attractive sites near established utility grids can be identified).

- a) What is the current status of wind development?
  - b) Why hasn’t a demand-side management plan been established for this review?
  - c) Should a joint interested party panel be implemented to promote more efficient use of energy over the longer-term?
- 9) Reference: Issus List - Possibility of long-term stability for secondary power rates

In the event of future load growth, will secondary power rates be discontinued?

10) Reference: Issues List - \$3 Million capital spending threshold for YUB Review

At what time during the project life should a YUB review take place?

• **NON-INDUSTRIAL VS. INDUSTRIAL CUSTOMERS**

- 11) Please identify investment options that exist for Yukon Energy to supply energy to industry that do not negatively impact other ratepayers?
- 12) Please identify the supply and investment options that will support rate stability goals, reduce barriers to industrial development and minimize environmental impacts.

- 13) Please identify the peak and base load electricity requirements for proposed industrial customers.
- 14) Please provide details of the criteria for allowable financial, social and environmental risks that Yukon Energy has incorporated into the proposed 20-year resource plan.
- 15) Please explain actions or initiatives Yukon Energy will follow to ensure ratepayers are protected from financial risks due to supplying electricity to large industrial customers (e.g., use of Electric Service Regulations to require a security deposit from industrial customers, provision of electricity supply agreements that include provisions to reduce risks to other ratepayers, appropriate investment options and provisions to reduce risk to other ratepayers applied to the assessment of new energy supply to industrial customers).

Please comment on each scenario above as well as other options Yukon Energy has considered.

- **LOAD DIVERSIFICATION**

- 16) Please identify the firm loads proposed to be connected to each of the WAF and Mayo grids.
- 17) Please identify and prioritize all operations where dual-fuel systems can be used, including new industrial customers.
- 18) Please identify alternative rate designs and rate structures for industrial customers (e.g., seasonal or commodity-based rate structures) and provide Yukon Energy's opinions of these alternatives.
- 19) Please provide details of the agreements or assurances that will be put in place for any new industrial customer proposing to come on line (e.g., to secure best practices and best available products will be used to support energy efficiency).
- 20) Please explain how the proposed 20-year resource plan will move non-industrial customer class rates towards the revenue-to-cost ratio goal of 90-100% without affecting rate stabilization.

- **ELECTRICITY SUPPLY OPTIONS**

- 21) Please provide the principles and prioritization criteria used to develop the proposed resource plan.

- 22) Please provide details of the criteria Yukon Energy used to determine that grid extension or interties would benefit ratepayers in their ongoing energy supply planning, load diversification and infrastructure development.
- 23) Please provide details of how non-utility generation stakeholders have been approached or consulted with respect to this resource plan.
- 24) Please provide details of consultations conducted with other utilities and stakeholders during the development of this proposed resource plan.
- 25) Please provide details of how the supply strategy incorporated in the resource plan has taken into account sustainable development and environmental protection.
- 26) Please provide a detailed description of the evaluations made of the costs and benefits of the projects in the proposed resource plan taking into account existing assessment and regulatory process (i.e., social, environmental, economic and technical criteria); as well as:
  - f. all YEC costs and a breakdown of all YEC costs associated with this YUB regulatory process up to this point;
  - g. estimated YEC costs for the entire YUB regulatory process; and
  - h. all costs associated with all other approvals required for proposed projects and any potential projects that may result from this proposed resource plan.

- **APPLICATION OVERVIEW DOCUMENT**

27) Reference: Overview Document, Page 1

YEC indicates that “In response to past commitments, this Submission was filed with the Yukon Utilities Board (“YUB”) on June 1, 2006 for review by the Board.”

Please provide details of the “past commitments” that resulted in the submission of this resource plan.

28) Reference: Overview Document, Page 1

YEC indicates that “The Submission also proposes approaches to prepare for potential longer-term industrial development, recognizing the need to balance the risk associated with planning for industrial loads with the benefits. Past experience has shown the benefits that infrastructure development and industry can bring to the Yukon.”

- (a) Please describe when YEC begins planning for capacity upgrades.
- (b) Please compare details of how and when YEC prepares for potential longer-term industrial load versus the planning process used by primary electricity generators in other jurisdictions especially Northwest Territories, Nunavut, British Columbia and Alberta.
- (c) Please provide details of YEC's past experiences with infrastructure development that has resulted in attracting industry to the Yukon.

29) Reference: Overview Document, Page 3

YEC indicates that "Various levels of technical and costing assessments have been carried out, in some instances to the project feasibility stage."

- (a) Please provide details of the technical and costing assessments that have been carried out on all projects proposed within the Resource Plan.
- (b) Please provide details of the costs incurred to conduct these technical and costing assessments.
- (c) Please provide details of the external and internal resources and associated costs that have been involved in the technical and costing assessments as well as the preparation and support of the Resource Plan.

30) Reference: Overview Document, Page 5

YEC indicates that "The Yukon economy, and Yukon's electricity loads and systems have changed substantially since the 1992 review." And that "potential new industrial developments during the next several years may absorb the WAF hydro energy surplus and create opportunities once again to develop new infrastructure."

Please explain how the "potential" for new industrial development is any different now than it was during the review of the 1992 Resource Plan.

31) Reference: Overview Document, Page 6

YEC indicates that "Forecast load growth, pending retirement of three diesel units located in YEC's Whitehorse diesel plant (11.4 MW), and new capacity criteria adopted by Yukon Energy together create an immediate need for new WAF generation capacity to serve peak winter load requirements."

- (a) Please provide YEC's understanding of the benefits of demand side

management programs conducted by utilities.

- (b) Please provide details of the demand side management programs that YEC has implemented in order to reduce current and future peak winter load requirements, including details of the effectiveness of these programs.
- (c) Please provide details of the amount that YEC intends to spend on demand side management programs during the period covered by the Resource Plan.

32) Reference: Overview Document, Page 6

YEC indicates that “Potential new industrial developments prior to 2009 at the Minto and Carmacks Copper mines may absorb the WAF hydro energy surplus, supporting a transmission extension of the WAF grid from Carmacks to at least Pelly Crossing and creating an opportunity to interconnect the WAF and MD grids.”

- a) Please provide details of the discussions held with proponents of the Minto and Carmacks Copper mines regarding electricity requirements and supply alternatives.
- b) Please provide details of YEC’s policy regarding customer contributions for connections and details of how this policy would be applied to the potential loads at the Minto and Carmacks Copper mines.

- **RESOURCE PLAN OF PROPOSED ACTIONS**

33) Reference: Resource Plan Summary of Proposed Actions, Page 1

YEC indicates that “In response to past commitments, the 20-Year Resource Plan Submission is expected to provide the Yukon Utilities Board (YUB) with the opportunity to review near term generation or transmission projects that Yukon Energy proposes to commit before 2009 with costs of \$3 million or more, including projects based on revised planning criteria now adopted by Yukon Energy.”

In response to an information request in YEC’s 2005 Required Revenues and Related Matters proceeding (McMahon-YEC-1-22, dated March 5, 2005), YEC indicated that it had “proposed to the Yukon Government that all Yukon Energy projects worth more than \$3 million receive prior approval by the Yukon Utilities Board” and that “Yukon Energy has proposed that a more comprehensive system be established” to address matters related to reviews of

projects under Part 3 of the *Public Utilities Act*.

- a) Please provide all correspondence (memo, emails, letters, etc.) between YEC and the Yukon government regarding YEC's \$3 million threshold proposal.
- b) Please provide all correspondence (memo, emails, letters, etc.) between YEC and the Yukon government regarding YEC's proposal of "a more comprehensive system" to address matters related to reviews of projects under Part 3 of the *Public Utilities Act*.
- c) Given that the Resource Plan was submitted to the YUB prior to any public direction to the YUB from the Yukon government, please explain why YEC proposed to restrict the Board's review to projects with costs of \$3 million or more.
- d) Please provide details and documentation on any directions provided to YEC regarding the approach taken to this resource plan review. In particular, any direction received from the Yukon government or Yukon Development Corporation regarding limiting the Board's review to projects with costs of \$3 million or more.
- e) Please provide details of all capital projects YEC currently anticipates to undertake during the 2006-2025 timeframe. Please group these projects into the following categories: Sustaining (investments required to ensure that existing system facilities function as originally designed), Development (investments required to serve new customers and meet increased demand of existing customers), Operations (investments in infrastructure required to sustain the operations function), and Shared Services (investments related to the sustainment and enhancement of existing equipment and infrastructure, including computer-related hardware and software, transport and work equipment, and projects initiated to improve business support functions).
- f) For all capital projects YEC currently anticipates to undertake during the 2006-2025 timeframe, please provide the information that must be provided to YEC's Project Review Committee including: Total Cost Estimate; Primary and Secondary Project Justification; Description of the Problem; Options Including the Do Nothing Option; the Recommended Option, and Other Options (if they exist); Timeframe for Project; Identify Existing Assets that Would be Replaced; Estimate of Cost of Disposing of Old Assets; and Site Restoration, Basic costing worksheet.

YEC indicates that its “extensive hydro generation, as well as most of its related transmission facilities, were previously developed in response to major industrial mine developments. Today, these hydro systems are the key factor causing Yukon power costs to be lower than those found in Alaska or the Northwest Territories. Without such hydro facilities, Yukon utilities probably would have relied almost entirely on diesel generation with its associated higher costs.”

- a) Please provide a bill comparison based on current rates for residential, small commercial and industrial customers in communities served by Yukon Energy (Dawson and Mayo), the Northwest Territories Power Corporation (Yellowknife, Fort Smith and Hay River) and Alaska (Anchorage, Fairbanks and Homer).
- b) Please provide a breakdown of a residential bill for a customer living in Dawson (using 1000 kWh per month) showing all charges, riders and subsidies and explain how the Yukon’s hydro systems are the key factor in keeping rates low.

35) Reference: Resource Plan Summary of Proposed Actions, Page 2

YEC indicates that “Capacity requirement planning focuses on the highest or peak megawatt (MW) generation capability (capacity) required on each system during each year, including sufficient generation reserve capability (based on the system’s capacity planning criteria) to address unplanned outages.”

Please confirm that the WAF capacity reliability criteria is the requirement to maintain sufficient capacity on the grid to meet 100% of the forecast system peak demand with the loss of 15 MW of hydro and 10% of the diesel generation on the grid.

36) Reference: Resource Plan Summary of Proposed Actions, Page 7

YEC indicates that the Aishihik 3<sup>rd</sup> turbine project was reviewed in 1992 and is estimated to cost \$7 million (2005\$).

- a) Please provide details of this project as submitted by YEC during the review of the 1992 Resource Plan and any references made by the YUB in its report to the Commissioner in Executive Council in 1992.
- b) Please provide copies of the Yukon Territorial Water Board and environmental approvals for this project.
- c) Please confirm that the Aishihik 3<sup>rd</sup> turbine project will result in

adverse rate impacts for several years following being placed into service.

- d) Please identify the actual bill impact of this project for a residential customer living in Dawson and Whitehorse during the first few years after this project is placed into service. Please confirm that your bill impact calculations are based on a cost allocation and rate design that has not been fully reviewed by the YUB since 1996.

37) Reference: Resource Plan Summary of Proposed Actions, Page 7

YEC indicates that the Aishihik 3<sup>rd</sup> turbine project will proceed with final planning activities to enable a final decision during 2007 to start construction for in-service by October 2009.

Please indicate how YEC is following the intent of the YUB's recommendation (#2) from its Report to the Commissioner in Executive Council (December 7, 1992) on the 1992 review of the capital resource plans of YEC and YECL: "The Board notes that before the Companies proceed with a specific project a full regulatory review must be undertaken, including an assessment of the prudence of the timing and costs of each project."

38) Reference: Resource Plan Summary of Proposed Actions, Page 8

YEC indicates that approval for the Marsh Lake Fall/Winter Storage Licence Revision project is forecast for August 2007.

Please identify the approvals that YEC intends to secure for this project by August 2007.

39) Reference: Resource Plan Summary of Proposed Actions, Page 9

YEC indicates that it will proceed with construction of the Carmacks-Stewart Transmission Line early in 2007 for an in-service date in approximately late 2008.

- a) Please identify the approvals that YEC intends to secure for this project prior to commencing construction in early 2007.
- b) In its response to the YUB's preliminary information requests (YUB-YEC-1-10), YEC indicates that it does not have a formal commitment of YTG funding to date for this project and as such no specific detailed "business case" analysis of the type provided for Aishihik 3<sup>rd</sup> turbine can yet be conducted.

40) Reference: Background on Yukon Power Systems, Page 2-21

YEC indicates that “Since the closure of the Faro Mine in 1998, there has been a hydro energy surplus. Consequently there has been minimal economic justification to pursue DSM initiatives for most Yukon assets. However, DSM programs have not been terminated.”

- a) Please identify all DSM programs that YEC is currently funding.
- b) Please provide a copy of the most recent update of the Government of Northwest Territories Energy Conservation Action Plan.

41) Reference: Near Term Requirements, Page 4-45

YEC indicates that new mining operations develop their own on-site diesel plants either for backup or other reasons (potentially including interim operation prior to the arrival of utility power, or for benefits associated with waste heat during certain seasonal operations).

- a) Does YEC consider on-site generation a viable alternative for electricity supply to an industrial customer?
- b) Is on-site generation considered a supply alternative in YEC’s evaluations when new industrial loads are identified?
- c) Please describe how YEC promotes on-site generation / cogeneration?
- d) According to the Rural Electrification Support Program Guidelines, Yukon Development Corporation may assist with power equipment for a stand-alone renewable power system serving more than one property owner through Yukon Energy Corporation or a joint venture involving Yukon Energy where grid power services are not feasible or do not represent the best alternative. Is YEC aware of similar provisions for industrial loads?

42) Reference: Near Term Requirements, Page 4-59

YEC indicates that a technical feasibility study on the Mirrlees Life Extension Project was expected to be completed within the first quarter of 2006.

Please provide a copy of the feasibility analysis.

43) Reference: Near Term Requirements, Page 4-61

YEC indicates that in order to facilitate ongoing assessment of generation and transmission options and requirements, it will be monitoring annual customer class load trends (peak capacity and seasonal energy) on each grid.

Please provide details of the agreement reached with Yukon Electrical Company Limited on the sharing of customer load data.

- **PRELIMINARY INFORMATION REQUESTS FROM YUB**

44) Reference: YEC Response to Preliminary Information Request YUB-YEC-1-10

In its response to the YUB's preliminary information request YUB-YEC-1-10 (dated July 21, 2006), YEC indicates that it does not have a formal commitment of YTG funding to date for the Carmacks-Stewart Transmission Line project and as such no specific detailed "business case" analysis of the type provided for Aishihik 3<sup>rd</sup> turbine can yet be conducted.

- a) Please confirm that there continues to be no formal commitment of YTG funding for this project.
- b) Please provide all correspondence (memo, emails, letters, etc.) between the Yukon government, Yukon Energy and/or Yukon Development Corporation related to this project.
- c) Please provide details of all contributions to YEC from the Yukon government or Yukon Development Corporation in 2004, 2005 and 2006 to date along with an explanation as to why they were made and how they were derived.

45) Reference: YEC Response to Preliminary Information Request YUB-YEC-1-18

In its response to the YUB's preliminary information request YUB-YEC-1-18 (dated July 21, 2006), YEC indicates that while developing the Resource Plan, Yukon Energy informed YECL on a number of occasions that it was preparing internal infrastructure plans and more recently a full Resource Plan for the bulk power supply to the integrated systems, particularly WAF.

Please provide all correspondence (memo, emails, letters, etc.) between the Yukon Energy and Yukon Electrical Company Limited related to the development of the Resource Plan and related projects.

- **RECOMMENDATIONS FROM 1992 RESOURCE PLAN**

46) Does Yukon Energy concur that this hearing will result in only a preliminary framework within which the Utilities should proceed with their capital

projects?

47) Does Yukon Energy concur that the Utilities Resource Plan be reviewed on an ongoing basis?

48) Does Yukon Energy concur that before the Utilities proceed with any specific project that a full regulatory review must be undertaken, including the assessments of the prudence of the timing and the costs of each project?

49) Please provide the Low and Base Case scenarios in assessing the need and rationale of the supply and DSM options.

50) Please provide a detailed support for all forecasting, including the forecasting use per customer.

51) Please provide the customer survey results used in developing end-use capability.

52) Please provide all the line-loss projects and implementation schemes developed by Yukon Energy.

53) Please show how #50 above has been reflected in the future forecasts prepared by Yukon Energy.

54) Please provide the Yukon Energy predictive model for the annual peak load for the WAF system.

55) Please provide all the potential sources of capacity from the existing systems.

56) Please provide the names of all witnesses Yukon Energy will bring forward to respond to intervenor and Board questions.

57) Please provide the ice studies and testing performed to determine the potential to use load factoring to increase the capacity of the Whitehorse Rapids Plant.

58) Please provide documentation of all data base and support systems implemented by Yukon Energy since the 1992 capital hearing.

59) Please provide all DSM activities implemented by Yukon Energy to alleviate capacity shortfalls.

60) Please provide all DSM alternatives that Yukon Energy has researched to lower the costs to consumers rather than the supply options presented.

61) Please provide how the Yukon Energy critically assessed the knowledge gained with respect to savings in demand from DSM programs, potential load factoring at the Whitehorse Rapids Plant, the closure of the Faro mine, improvements in forecasting techniques and the necessity for diesel requirements.

62) In pursuing capital projects for new supply options, please provide how Yukon Energy has assessed alternatives such as DSM, small utility-owned projects and independent power producers.

63) In the near term project of Aishihik #3, please provide the assessment of the environmental costs after giving due consideration to the findings of the environmental reviews.

64) In the near term project of Aishihik #3, please provide the feasibility study which demonstrates that Yukon Energy is pursuing to install maximum capacity that is economically, technically and environmentally feasible.

65) Please provide the long-term hydrological studies for Drury Creek, Morley River, Lapie River and Orchay River.

66) Please provide a synopsis of the wind research and development pursued by Yukon Energy.

67) Please provide the purchasing policy guidelines for transformers implemented by Yukon Energy.