Yukon Conservation Society INC. 1968

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Nov 24th, 2006

BY FAX: 867-667-5059

Yukon Utilities Board
Box 31728
Whitehorse, Yukon
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Attn: Yukon Utilities Board

Re: Yukon Energy Corporation (YEC) 20-Year Resource Plan: 2006 – 2025
Submission of Written Arguments by the Yukon Conservation Society

To the Board

Please find attached the written submission of the Yukon Conservation Society (YCS) regarding the Yukon Energy Corporation (YEC) 20-Year Resource Plan: 2006 – 2025.

The main issues identified in the Plan:
- Whitehorse Mirrlees Life Extension
- the Carmacks - Stewart Transmission Project
- Aishihik 3rd Turbine
- Southern Lakes study and Marsh Lake Fall/Winter Storage

are discussed in Sections 1 to 4.

Given the broad nature of a 20-Year Resource Plan, many issues were not, in the opinion of YCS, adequately addressed by the Yukon Energy Corporation (YEC) 20-Year Resource Plan: 2006 – 2025. In the future YEC should consult its stakeholders when it has a draft plan and to take their input into consideration before submitting the plan to the Yukon Utilities Board (YUB) for review.

YCS has comments on the following issues that were raised peripherally during the hearing process, and believes they be formally included or addressed in a YEC 20-Year Resource Plan:
- Economic Development (Section 5)
- Customer Use Patterns (Section 6)
- Rate equalization (Section 7)
- Monthly Electricity bonus (Section 8)
- Seasonal Electricity Rate (Section 9)
- Demand Supply Management (Section 10)
- Secondary Sales (Section 11)

- Heat Pump Technologies (Section 12)
- Independent Power Producers (Section 13)
- Net-metering (Section 14)
- Greenhouse Gas Emissions (section 15)
- Wind Energy (Section 16)
- Green Power Sales (Section 17)
- Smart Metering (Section 18)

The Yukon Conservation Society thanks you for this opportunity to submit our concerns in writing. Should the Yukon Utilities Board require clarification or have follow-up questions, please contact the undersigned.

Yours truly

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Yukon Conservation Society

Written Submission

Regarding the

Yukon Energy Corporation (YEC) 20-Year Resource Plan: 2006 – 2025

November 24th, 2006

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Introduction

Given the broad nature of a 20-Year Resource Plan, many issues were not, in the opinion of YCS, adequately addressed by the Yukon Energy Corporation (YEC) 20-Year Resource Plan: 2006 – 2025. In the future YEC should consult its stakeholders when it has a draft plan and to take their input into consideration before submitting the plan to the Yukon Utilities Board (YUB) for review.

YCS has comments on the following issues that were raised during the hearing process.

1.0 Mirrlees Life Extension Project

YCS recognizes that the use of existing facilities and equipment, such as the Faro Mirrlee, can provide fiscal benefits to ratepayers if the alternative is the purchase or construction of new facilities.

In the YEC 20-Year Resource Plan: 2006-2025 Update (November, 2006) on page 3, section 3.1, New Capacity, the following is stated:

> "As a result, a Faro-focused project in 2007 more than addresses lost capacity from the decision not to the pursue the Marsh Lake Fall/Winter Storage project (1.6 MW in 2007), and provides the WAF system with some added near-term capacity cushion."

The further dependence on fossil fuels to meet future peaking demand will place an additional financial cost on ratepayers. Use of renewable energy alternatives, such as hydro power in the form of the Marsh Lake Fall/Winter Storage project will provide better stable fiscal certainty.

Refer to Section 4.0 of this submission for YCS's opinion of the YEC decision to not pursue the Marsh Lake Fall/Winter Storage project.

YCS is concerned that emphasis on using the Faro Mirrlee to meet future peaking demand instead of a the Marsh Lake Fall/Winter Storage project will further increase YEC greenhouse gas emissions.

Refer to Section 15 of this submission for YCS's comments on Greenhouse Gas Emissions.

YCS asks the YUB to ensure that YEC compares the fiscal and environmental benefits of refurbishing and using the Faro Mirrlee with the Marsh Lake Fall/Winter Storage project.

2.0 Carmacks – Stewart Transmission Project

In the YEC 20-Year Resource Plan: 2006-2025 Update (November, 2006) on page 6, section 4.0 Carmacks-Steward, the following is stated:

> "Project Proposal Submission To YESAB
>
> Yukon Energy filed with the YESAB Executive Committee on October 13, 2006 the Project Proposal Submission for the Carmacks-Stewart/Minto Spur (CS/MS) Transmission Project lines and substations."

YCS is in tentative support with the Project Proposal, subject to the final submission to the Yukon Environmental and Socio-Economic Assessment Board (YESAB) Executive Committee and the outcome of the YESAB process, community consultation and any additional environmental reviews that might be required.

One of the main benefits of the Carmacks-Stewart line will be the ability of Pelly Crossing to access hydro generated electricity, and not to have to rely on diesel generators. In addition it could permit hydro energy from Mayo to be accessed by the current WAF grid.

Refer to Section 15 of this submission for the fiscal implications of this potential greenhouse gas emission reduction.

YCS supports the concept of the transmission line being 138 kV. This will allow for future energy projects in the Mayo-Dawson area to feed into the Yukon grid. This will open up opportunities for Independent Power Producers (IPP's).

Refer to Section 13 of this submission for YCS's opinion on the role of YEC and IPP's.

However, YCS does not want to see the Carmacks Stewart line in any way or form becoming a financial subsidy to mining operations or any other potential economic activity.

Refer to Section 5 of this submission for YCS's opinion on the role of YEC and its part in Economic Development.

Rather, it should be the large industrial customers subsidizing YEC infrastructure and thus permitting Yukon individual ratepayers to benefit as was the case in the past (eg. Aishihik Lake Dam for Faro, Mayo Lake Dam for United Keno Hill).

YCS is in tentative support of the Carmacks – Stewart Transmission Project, subject to the final submission to the YESAB Executive Committee and the outcome of the YESAB process, community consultation and any additional environmental reviews that might be required.

3.0 Aishihik 3rd Turbine

YCS is in tentative support of the Aishihik 3rd Turbine project. It could be a sound choice for adding new capacity to the Whitehorse-Aishihik-Faro (WAF) grid without causing large environmental damage.

YCS does have concerns over a potential greater drawdown of Aishihik Lake water levels. The current water license has provisions for maintaining lake levels at a higher stage.

YCS would like to see these provisions remain in the license for environmental considerations. A review of the fisheries consideration is coincidently scheduled for 2007. This could have implications on Aishihik Lake drawdowns, and thus affect the Aishihik 3rd Turbine project.

YCS is in tentative support of the Aishihik 3rd Turbine project subject to the review of the fisheries consideration scheduled for 2007.

4.0 The Marsh Lake Fall/Winter Storage

In the YEC 20-Year Resource Plan: 2006-2025 Update (November, 2006) on page 1, middle of page, the following is stated:

> "Marsh Lake Fall/Winter Storage Project: Since the Resource Plan was filed with the Board, Yukon Energy has participated with Marsh Lake residents and environmental consultants in initial investigations of the issues related to the project. As a result of that investigation, it has become clear that the Marsh Lake project will not in any likelihood be able to proceed through the licencing process in the very near term, as originally intended. Given the above assessment Yukon Energy's Resource Plan no longer includes any plans to pursue the Marsh Lake Fall/Winter Storage Project."

Yet according to YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 4-22, line 1 onwards:

> "Costs of the project relate almost entirely to environmental licencing and mitigation, which are very difficult to predict. Given the relatively limited potential for physical or environmental effects (but recognizing the potential for notable public interest in ensuring full review of all potential effects) the costs of the project are not expected to exceed $1 million. Licensing and other pre-decision activities are assumed to require a year such that the project could potentially come into service in 2007 (in time to be of value in addressing the 2007/2008 winter peak)."

It is unclear why this project has been dropped so quickly. There was recognition in the original Resource Plan (January, 2006) that there would be notable public interest and

that licensing (including, one assumes, environmental studies) could take a year. Formal tabling to the YUB of the minutes of the meetings with Marsh Lake residents and submission of reports from environmental consultants in initial investigations of the issues related to the project have not, as far as YCS can determine, been done.

YCS asks the YUB to ensure that the YEC 20-Year Resource Plan should continue to examine the feasibility, impacts and licensing implications of the Marsh Lake Fall/Winter Storage Project.

5.0 Economic Development

In the 20-Year Resource Plan: 2006-2025 Resource Plan Update (November, 2006) on page 7, second half of the fourth paragraph, there is stated in reference to the Carmacks-Stewart powerline connection project:

> "It is anticipated that the project will create associated benefits for Yukon electric utility ratepayers, enhance the feasibility and economics of new mining developments, improve access to certain areas, and provide opportunities for local jobs and business activity during construction and subsequent periodic ROW clearing and maintenance."

According to the YEC website (www.yukonenergy.ca), the Mission of YEC is to:

> "Provide a sufficient supply of safe, reliable electricity and related energy services to customers throughout the Yukon, while following sound business practices and demonstrating leadership in protecting the environment.
>
> We undertake to:
>
> - be responsive to our customers and their changing needs and expectations;
> - commit to the safety and development of our employees;
> - be cost-effective in the utilization and investment of resources, always remembering that we are spending the customer's money and making long-term decisions;
> - place priority on the fundamentals; that is, safe and reliable electrical services;
> - demonstrate the value of Yukon-based public ownership and management;
> - act ethically and honestly treating employees, customers and others with fairness, dignity and respect; and
> - build enduring relations with Yukon First Nations"

YCS asks the YUB to ensure that the YEC 20 Year Resource Plan puts ratepayers first and that the Plan is about providing electricity to ratepayers in a cost-effective manner. The 20 Year Resource Plan must not be about the desire of YEC to "enhance the feasibility and economics of new mining developments, improve access to certain areas,

and provide opportunities for local jobs and business activity during construction and subsequent periodic ROW clearing and maintenance." That is not their role.

6.0 Customer Use Patterns

The lack of data sharing between YEC and the Yukon Electrical Company Limited (YECL) on customer use patterns has implications on determining future energy scenarios.

While YEC has attempted to determine future large scale energy users, typically mines, in the YEC 20-Year Resource Plan: 2006-2025 an analysis of current customer use patterns would no doubt improve the accuracy of any future scenario analysis.

YCS asks the YUB to ensure that YEC and YECL share data on current customer use patterns.

7.0 Rate Equalization

The Rate Equalization Program and the Rate Stabilization Fund are Yukon Territorial Government (YTG) programs, but there are significant implications for the YEC 20-Year Resource Plan: 2006-2025.

After the Faro mine closed in 1998, YTG provided $10 million for the Rate Stabilization Program. The annual cost of this program is approximately $3.5 million and it reduces Yukoners' electricity bills by as much as a third.

The Rate Equalization Program provides an equalized rate across the territory regardless of whether the user lives on the hydro-power grid or in a more expense diesel community.

An outcome of both initiatives is that the residential customer pays less than the true cost of service.

This program is counter productive to ratepayers. It encourages inefficiencies where residences use more electric power to heat their homes rather than improving their energy use.

In Whitehorse some new homes are being built with electric baseboard as a primary heat source. During winter peaking peak periods diesel-electric generator will be powering these heaters at a very low efficiency, but at a high cost to YEC.

The two programs are driving YEC's need for capacity during the winter peak margin periods. This could overtax the Whitehorse-Aishihik-Faro (WAF) system and will eventually force YEC to use more and more diesel-electric to meet winter peak demand. This need for increased capacity will seriously impact ratepayers.

Should Yukoners use up the WAF system surplus through increased electrical use, less hydro energy will be available for sales to industrial customers. Increased diesel energy production will translate into reduced profits and possibly the need for additional firm capcity infrastructure at great financial, and possible environmental, cost. Some profits from industrial sales should be directed back to Demand Supply Management (see Section 10) and alternate energy development (see Section 16 and 17).

YCS asks that the YUB recommends to the Yukon Territorial Government the removal of the rate subsidy programs. This removal will impact power demand in the Yukon, and thus have significant implications for the YEC 20-Year Resource Plan: 2006-2025.

8.0 Monthly Electricity bonus

Should the Yukon Territorial Government (YTG) remove subsidies such as the Rate Equalization Program (see Section 7.0 of this submission) monies should be offered to ratepayers to reduce electrical demand.

YTG could provide customers a financial incentive to reduce their electricity use. An example would be a rebate for ratepayers when they purchase energy efficient appliances such as Energy Star or equivalent refrigerators.

This would reduce the load on the grid, and would either put off or negate the need for capital intensive infrastructure, to the benefit of all ratepayers.

YCS asks that that the YUB recommends to the Yukon Territorial Government to implement a financial incentive program to Yukoners to reduce their electrical demand.

9.0 Seasonal Electricity Rate

A seasonal rate system is where rates are low in the summer when there is surplus hydro and high in winter where peaking is reached.

Should seasonal rates be implemented in the Yukon, they would lower the winter peak capacity and energy requirements which are driving the requirements laid out in the YEC 20-Year Resource Plan: 2006-2025. This could be cost effective to ratepayers and, from an environmental perspective, could reduce greenhouse gas emissions.

During the hearing, YEC apparently testified that it did not make sense to have seasonal rates because YEC either had a hydro surplus all year round or were diesel on the margin all year round.

Yet in the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 4-4, line 1 onwards it states:

> "New firm WAF capacity required, due to WAF winter peak capacity exceeding the maximum loads allowed on the system under new capacity criteria (however, this system has no need for new firm energy capability due to ongoing surplus hydro energy generation of over 90 GW.h/yr, with about 21 GW.h/yr of this surplus being currently used to supply interruptible secondary sales)."

It would appear that YEC does have a hydro surplus in the summer, but not in the winter. Seasonal rates could thus be implemented.

YCS asks that the YUB require the YEC to implement seasonal rates when rate design is next before the YUB.

10.0 Demand Side Management

Since the closure of the Faro mine there have been some very active Demand Side Management (DSM) programs delivered through the Energy Solutions Centre.

One of the focuses of these programs was to reduce the winter peak load and reduce the impact of increased rates to the hardest hit customers. Because of its popularity this program has been continued by the Yukon government.

However, in the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 2-21, line 11 onwards it states:

> "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."

This is not an accurate characterization. Given the power consumption projections provide by YEC throughout this hearing, there will not always be a hydro energy surplus over the 20-Year Resource Plan study period. The minimal economic justification is rapidly becoming an important economic justification for ratepayers.

In addition, DSM deals with all aspects of customer consumption patterns including peak shaving and valley filling, both of which are very relevant to Yukon.

Peak shaving means winter demand reduction, examples for which have already been provided in Section 9 of this submission. The environmental benefit is that less, or no, diesel would be consumed.

Valley filling is increasing summer sales which could range from encouraging the sale of electric lawn mowers to seasonal high energy use industries, such as placer miners using electric powered shovels.

YCS recognizes that the Yukon Electrical Company Limited (YECL) needs to be part of any DSM program as most retail customers are in fact YECL customers.

YECL should be given an incentive to undertake DSM by having the wholesale rate at which power is sold to YECL from YEC include a demand charge as well as an energy charge. A demand charge would essentially mean seasonal rates for power, being higher in winter and lower in summer.

YCS asks the YUB to ensure that YEC, as part of the 20 Year Plan, examine options and scenario's that cover YEC charging a demand charge on power sold to YECL, in order to encourage DSM.

11.0 Secondary Sales

In the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 2-14, line 14 it states:

> "Secondary sales have grown from 3,917 MW.h in 2000, to a forecast 20,613 MW.h for 2005."

In the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 4-4, line 1 onwards it states:

> "New firm WAF capacity required, due to WAF winter peak capacity exceeding the maximum loads allowed on the system under new capacity criteria (however, this system has no need for new firm energy capability due to ongoing surplus hydro energy generation of over 90 GW.h/yr, with about 21 GW.h/yr of this surplus being currently used to supply interruptible secondary sales)."

In the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 4-4, line 9 it states:

> "The MD system has surplus hydro energy generation of about 17 GW.h per year..."

This surplus hydro will increasingly be available only in the non-winter months. In the base case forecast significant curtailment of the present level of secondary sales starts in about 10 years, but should both the proposed Minto and Carmacks Copper mines proceed this would happen in about two to three years.

Any new supply facilities or hydro facility enhancements constructed that provide additional energy to the system (even if their primary intent is to supply capacity) will thus enhance the continued sale of surplus hydro.

A possible future customer use of Secondary Sales is the proposed City of Whitehorse subdivision located on the lower bench of Porter Creek. A design scenario could be done for this development which could involve district heating. This could be a major secondary power revenue source.

YCS asks the YUB to ensure that YEC pursue the continued sale of surplus hydro to existing and new secondary sales customers on a seasonal basis; and YEC should consider the revenues from such secondary sales in the economic evaluation of their capacity and or energy supply options.

12.0 Heat Pump Technologies

Heat pumps may become increasingly common as individuals and businesses respond to the rising cost of home oil heating.

Heat pumps are commonly used in residences and businesses to heat in the winter and to cool in the summer. They appear in the Whitehorse area in the form of air-to-air and ground source heat pumps. The ground source models require more upfront capital but in the long run provide heat year round and can be the primary source of heat for homes.

The air-to-air heat pumps as a secondary heat supply to oil furnaces add a real advantage to using surplus hydro and shaving winter peaks. Air-to-air heat pumps cannot run below - 20°C and therefore at that temperature the home owner must switch to other sources of heat.

Heat pumps have an advantage over base board heaters in that for every kWh of electricity used, 2-4 kWh of heat is transferred into the home. This is more effective than base at a 1 to 1 kWh of electricity to heat.

The fiscal implications for YEC, and YEC ratepayers, are that more electricity will be required to heat home (but less oil).

YCS asks the YUB to ensure that YEC study the possible implications on electrical demand the growth of heat pumps could have.

13.0 Independent Power Producers

In the 20-Year Resource Plan: 2006-2025 Resource Plan Update (November, 2006) on page 2, third paragraph it states:

> "Western Copper has also recently reconfirmed its interest in reaching agreement with Yukon Energy for supply of grid power and negotiations are expected to begin shortly."

If YEC is going to purchase electrical power from Independent Power Producers (IPP), there must be a policy to ensure fair treatment of all potential providers.

YCS asks that the policy include a renewable energy preference and an open call for proposals to provide power.

It is not appropriate, nor fiscally responsible for rate-payers, for sole-source private deals to be done with a potential industrial power consumer.

YCS asks the YUB to ensure that YEC implements a renewable energy IPP policy

14.0 Net-metering

There is a segment of the Yukon public that would like to add solar PV or other renewable energy resource to their home. YCS believes such options should be available to Yukon ratepayers.

Many North American jurisdictions have introduced a net-metering program, along with a subsidy program, to encourage home owners to install solar systems on their homes. This has not only helped increase the renewable energy portfolio of the regions, but has raised awareness in energy conservation among many proponents who have implemented these systems.

Equipment and safety standards have been developed to allow this to be done safely. YECL has had two net-metering contracts to date: the first is with Lobird subdivision resident Kris Selzer, and the second with the NRI Solar-Wind facility located at Yukon College.

Both proponents entered into a contractual arrangement with YECL to sell back electricity if their net monthly energy use was negative, that is the customer produced more than they used. Although the Selzer system is no longer in place, the arrangement with NRI still exists

A number of Canadian provinces and US States now have laws that require the utilities to allow home and business owners to connect such renewable resources to their power systems if they follow specified processes and use approved equipment.

While it would be difficult to determine if there is any capacity or energy benefit to the Yukon grid system in the short term other than on diesel served systems, there are likely to be some long term benefits (among them public education about the high value of the Yukon hydro and grid facilities) to allowing net metering under stipulated terms.

YCS understands that in the past YEC was working towards net metering standards and a net metering policy but was unable to persuade YECL to do this jointly at that time.

YCS asks the YUB to ensure that YEC and YECL work together to implement net-metering standards and a net-metering policy for renewable resources.

15.0Greenhouse Gas Emissions

In Section 2.0 of this submission (Carmacks – Stewart Transmission Project) YCS gives tentative support of the Carmacks – Stewart Transmission Project, subject to the final submission to the YESAB Executive Committee and the outcome of the YESAB process.

One of the main benefits of the Carmacks-Stewart line will be the ability of Pelly Crossing to access hydro generated electricity, and not to have to rely on diesel generators.

There is the possibility of selling credits that might be accruing from taking Pelly Crossing off electrical power generated by diesel generators. It is also an issue that could apply to the diesel emissions saved at Dawson City since the construction of the Mayo-Dawson line.

In addition, there could be the possibility of using hydro-generated electricity to reduce fossil fuel demand in other sectors, like home heating. This could be a further fiscal credit, and it would be to the benefit of the ratepayers.

YCS asks the YUB to ensure that YEC investigate the carbon credit trading mechanisms currently applicable, and to determine what if any fiscal benefits such mechanisms would have for ratepayers.

16.0 Wind Energy

The potential for wind energy in the territory has not been fully realized, although Yukon Energy has in the past carried out monitoring of many sites within the valley and at mountaintops, there remains a vast area of unknown wind energy potential.

It is worth noting that wind energy availability in Yukon follows the annual electrical load profile. Wind energy is most abundant in winter when ratepayers consume energy the most, and is least available in summer when ratepayers consume it the least.

In the YEC 20-Year Resource Plan: 2006-2025 (January, 2006), on page 5-21, line 4 onwards describes a Scenario 1: WAF Energy Requirements.

> "The load balance information above notes a small incremental requirement for diesel generation under this scenario. However, over the next 20 years (the period of the current Resource Plan) the maximum diesel requirements at normal water flows in any year is about 25 GW.h/year, with only 4 of the 20 years above 10 GW.h/year. Diesel requirements for the remaining 16 years vary from about 0.1 GWh/year to 8 GW.h/year and average about 2 GW.h/year. Under this load scenario, it would be difficult to justify even considering new energy projects for commitment before 2016 based on mine loads of up to 10 MW that are not sustained well beyond 2016."

The Marsh Lake Fall/Winter Storage has been removed from the 20-Year Resource Plan: 2006-2025, as stated in the Resource Plan Update (November, 2006).

This means there is a need for an additional 7.7 GW.h/year for a total of 9.7 GW.h/ year (the Marsh Lake 7.7 GW.h/year added to the average 2 GW.h/year) of diesel energy (page 7, Maissan submission to these hearings, dated Nov15, 2006). A 5 MW wind plant operating at about 25 % capacity factor would fill this void.

During the hearing, YEC apparently testified that wind energy from the Haeckel Hill test site costs about $0.315 per kW.h absent the government grants that were provided.

These two single turbines at the Haeckel Hill test site were installed to prove the concept of wind energy production in cold and icing environments. A significant amount of money went into engineering, research and development aspects of the two projects. These costs could be substantially reduced in a commercial wind farm.

During the past few years YCS has noted that the wind turbines have been inoperative for very substantial periods of time. The wind turbines are only be producing limited amounts of energy.

If maintenance expenses are divided into a small amount of energy production the costs per unit energy do appear very high. A commercial wind farm would, it is assumed, have greater amounts of energy and would maintain the wind turbines in a timely manner to ensure their operating time was greater.

That apparent cost of the power from the Haeckel Hill projects, operated as they have been by YEC, is in no way indicative of what wind energy would cost for any privately owned commercial wind farm of 5 to 10 MW, a size YCS believes would be appropriate to the Yukon. The indications are that the cost of energy from a wind farm would be lower than diesel energy. This could benefit ratepayers.

YCS asks the YUB to ensure that YEC, as part of the 20 Year Plan, continue to include financial options regarding the expansion of wind turbines.

17.0 Green Power Sales

YCS believes that YEC has missed opportunities for the sale of green energy at a premium rate. For example, the Canadian federal government has committed to purchasing 20% of its energy requirements from such sources.

According to the Natural Resources Canada (NRCan) Electricity Resources Branch website (http://www2.nrcan.gc.ca/es/erb/erb/english/View.asp?x=464):

- "the goal of the Government purchases of electricity from ERES (Electricity from Emerging Renewable Energy Sources) is to:

- provide a "first customer" to help interested utilities gain experience with different electricity products;
- achieve emissions reductions in federal operations; and
- leverage first purchases to create viable green power markets."

Programs such as these could have the potential to add several cents per kW.h to the revenue stream, to the benefit of ratepayers.\

YCS asks the YUB to ensure that YEC ***as part of the 20 Year Plan, examine the fiscal benefits of implementing Green Power Sale programs.***

18.0 Smart Metering

To help make DSM more effective and easier to monitor a smart metering system should be integrated into the Yukon customer base.

According to http://www.weeklyscientist.com/ws/articles/smartmeters.htm.

"wholesale energy prices are based on up-to-the-minute consumption patterns. Controlling those patterns can dramatically control costs. Smart meters connected to the internet offer such controls.

A smart meter continually reports energy usage to the utility, which quickly posts the information on the internet. Additionally, smart meters can e-mail or page customers when wholesale prices are high and let customers set the maximum they're willing to pay. On the web, a customer can call up historical data from the meter -- to see, for example, how much energy they saved in a previous week or when they turned off their outside lights. Smart meters also allow customers to compare goals to progress or spot anomalies, such as a spike in use at 5 a.m., and correct them."

YCS asks the YUB to ensure that YEC pursue the integration of smart metering into the Yukon customer base. This will involve YECL.