

**YUKON
ENERGY**



STRATEGIC PLAN

2012-2013

INTRODUCTION

Yukon Energy's board of directors meets annually to develop a strategic plan that sets the course of the organization for the next one-two years. The board does this on an annual basis to ensure the corporation's actions are rooted in its mandate and focused on its long-term vision. This is the 2012 strategic plan and it includes some background and contextual information, a mandate, a new vision, guiding principles, performance objectives and strategic priorities. This strategy guides the development of the corporation's yearly business plan, operational plans and budgets.

BACKGROUND

Yukon Energy Corporation (Yukon Energy) is an electrical utility incorporated under the Yukon Business Corporation Act. Yukon Energy is a wholly-owned subsidiary of Yukon Development Corporation (YDC), a crown corporation owned by the Government of Yukon. YDC directs Yukon Energy to fulfill some of its mandate by ensuring there is a continuing and adequate supply of energy in Yukon, in a manner consistent with sustainable development. Yukon Energy is also responsible for the existing hydro assets that once belonged to NCPC and with these assets it generates, transmits and distributes electricity. Its operations are regulated by the Yukon Utilities Board, the Business Corporations Act, the Public Utilities Act and the Yukon Waters Act.

Yukon Energy was established in 1987 and now supplies power to almost 15,000 electricity customers. Distribution to these customers is a shared responsibility with Yukon Electrical Company Limited. Yukon Energy's generating capacity is 141 MW of which 92 MW are from hydro facilities, 36 MW from diesel generators

and 0.8 MW from wind. Yukon Energy's hydro system has a maximum of 92 MW of summer capacity but this capacity is reduced during the winter months to 65 - 70 MW as there is less water available in the winter for the Whitehorse hydro plant. Yukon Energy has 90 employees located in Whitehorse, Faro, Mayo and Dawson City.

Yukon Energy has accomplished a great deal in the last few years. In particular, the corporation has successfully completed the Mayo B enhancement project (its largest initiative to date), installed and commissioned the third turbine at the Aishihik hydro facilities, and commissioned Stage 2 of the Carmacks-Stewart transmission line. Stage 2 enabled Yukon Energy to connect the territory's two major transmission grids, giving the corporation the ability to manage these assets as one integrated system.

Planners have also been busy working on other potential resource options and energy conservation/efficiency solutions.

This strategic plan outlines the rationale and priorities that will guide Yukon Energy's future actions. The following section includes the strategic plan's mandate, vision and principles.

MANDATE

Yukon Energy plans, generates, transmits and distributes a continuing and adequate supply of cost-effective, sustainable, clean and reliable energy for customers in Yukon.

VISION

Yukon Energy has a vision for Yukon's energy future that embraces the social, economic and environmental needs of all Yukoners. Every decision we make is driven by that vision.

PRINCIPLES & VALUES

Our principles and values are fundamental to our success.

We:

- ❖ Prioritize safety and employee wellness in all of our actions.
- ❖ Undertake a continuous planning process to provide energy for current and future customers.
- ❖ Optimize the utilization of our assets for the benefit of all customers.
- ❖ Operate in a manner that ensures we are transparent and accountable to all of our customers and Yukon residents.
- ❖ Ensure all of our actions support our commitment to sustainable development and clean energy.
- ❖ Develop the partnerships required to meet the energy requirements of our customers.
- ❖ Operate with respect for one another.
- ❖ Foster a team based approach to all of our challenges.
- ❖ Act with integrity at all times.

OPERATING ENVIRONMENT

- Yukon Energy is a regulated public utility governed by the Yukon Utilities Act and the Yukon Utilities Board.
- Yukon Energy is responsible for electrical system planning in Yukon and is the primary generator of electricity in Yukon, supplying 90 percent of all generation required to serve Yukon communities.
- Yukon Energy operates a transmission grid and substation system comprising of approximately 500km of 138kv and

- 69kv line with no connection to an external grid or power source.
- With no external option to sell power, Yukon Energy must mitigate two significant risks when planning new power developments. First the corporation must ensure that it does not overbuild and ratepayers are not left with a large financial burden in future years if loads diminish and surplus energy becomes the norm. Second, if Yukon Energy underbuilds and cannot meet new loads with cheaper sources of renewable power, ratepayers will be saddled with high cost diesel and higher GHG emissions.
- Yukon Energy base generation comes from three legacy hydro assets located in Mayo, Aishihik and Whitehorse.
- Yukon rates are the lowest in Northern Canada and Alaska and competitive with a number of communities in southern Canada because of these legacy assets.
- Yukon is a single rate zone with all communities paying the same rate for the first 1,000 kwh per month.
- As a single rate zone, costs incurred to serve all customers and revenue from all customers impacts rates across the territory.
- Yukon Energy has an aging infrastructure. Apart from Mayo B and Aishihik 3, the last hydro project (Whitehorse's Fourth Wheel) was built in 1985. The Aishihik facilities were completed in 1974 and the original Whitehorse and Mayo hydro facilities are both more than 50 years old.
- Yukon Energy's financial capacity is being challenged by the requirements

to fund both new infrastructure and capital plant upgrades.

- With Yukon Energy coming to the end of surplus 'legacy hydro' or cheap power and the need to invest in an aging infrastructure, meet rising operating costs, and generate higher cost electricity, rates will have to rise.
- Rates can be offset by public investment into infrastructure projects and feasibility analyses, but these funds are significantly diminished.
- Yukon is the fastest growing economy in Canada and with or without new industrial loads Yukon Energy is facing greater than normal levels of load growth.
- Yukoners are fuel switching and moving to electrical heat and this is adding to load growth at the residential and commercial level. It is estimated that 90 percent of all new residential and commercial construction are installing electric heat.
- Large new residential developments will also impact the requirement for additional generation in a significant manner.
- Yukon Energy is committed to developing new business relationships with First Nation Development Corporations to share 'risk' and to encourage greater public acceptance of projects.
- Yukon Energy needs to employ new strategies and engage new large customers in discussion not just about the cost of linking to the transmission network but also the cost of electrical generation itself.

- Yukon Energy needs to manage public expectations relating to energy supply options and this will require detailed analysis and discussions.

SYSTEM CHALLENGES & RISKS

- Yukon's population continues to grow and with potential mines connecting to the grid, Yukon Energy could see a 50 percent load growth within five years.
- Acquiring sufficient planning funds to carry out the at-risk planning work required to bring new projects on line.
- Electrical requirements to serve off-grid loads are forecast to be much larger than on-grid electrical requirements.
- In serving new loads Yukon Energy must be able to meet the criteria set out in the Yukon government's Energy Strategy.
- Yukon Energy must also be able to meet the Climate Change Action Plan targets for Green House Gas Emissions.
- Yukon Energy must develop projects to meet this growing load and arrange the financing required to build the projects while ensuring ratepayers are protected from project financing risks.
- Yukon Energy must also work diligently to keep Yukon electrical rates within acceptable limits in order to encourage economic growth, while increasing its capacity to serve new customers.
- Yukon has a very small customer base which will impair the utility's ability to provide the capital required to finance new generation projects.

- It will be imperative to find funding partners to help finance new generating and transmission projects.
- Yukon Energy must ensure that growth in new generation is balanced in a way that meets current and future demands but at the same time does not create a situation where ratepayers are left with a large surplus that cannot be utilized.
- Yukon Energy must be able to meet the requirements for new supply in a manner consistent with the aspirations of Yukoners who are focused on the development of renewable sources of supply.
- Yukon Energy must examine options to reduce or remove diesel generation from the system where possible.
- Yukon Energy must plan for the retirement of its older diesel units and identify reliable replacement capacity.

STRATEGIC CONTEXT

Government Policy

Yukon Development Corporation Act

The Yukon Development Corporation Act and its regulations direct Yukon Development Corporation (YDC) toward certain activities that the corporation has instructed its wholly-owned business Yukon Energy, a regulated electrical utility, to undertake. In particular, the Yukon Development Corporation Act directs YDC to participate in the economic development of Yukon by ensuring there is a continuing and adequate supply of energy in the territory in a manner consistent with sustainable development. The Act gives the corporation the power to develop and promote the

development of energy systems and the generation, production, transmission, and distribution of energy in all its forms.

YDC incorporated Yukon Energy Corporation under the Business Act in 1987, so that Yukon Development through its subsidiary Yukon Energy Corporation could own and operate the recently acquired electrical energy generation, transmission and distribution assets of NCPC (federal agency) for customers of Yukon. The electrical rate structure suggested by Yukon Energy is subject to the authority of the Yukon Utilities Board.

Yukon Energy and Yukon Development Corporation negotiate a protocol with the Yukon government annually or biannually which outlines what is expected each year from the corporations. Additional direction from the Yukon government comes to the corporations as an Annual Shareholder's Letter of Expectations.

Yukon Government Energy Strategy

The Yukon government's Energy Strategy guides how energy can be produced, conserved, and used in Yukon. It promotes sustainability, energy security, self-sufficiency, optimizing benefits, climate change coordination, leadership, and partnerships. A number of priorities are listed under the headings of:

- efficiency and conservation
- renewable energy
- oil and gas
- electricity
- energy choices.

In particular, the Energy Strategy promotes the use of renewable energy including the commitment to increase the renewable energy supply 20 percent by 2020. The strategy

acknowledges the need to manage demand, in order to ensure the best use of the existing electricity supply. It also recognizes as the economy grows, industrial developments can lead to legacy opportunities for new renewable infrastructure.

The government's Energy Strategy provided direction to establish a net-metering and independent power producer policy both of which are now in development. Net metering allows customers the ability to generate their own clean electricity, to lower the amount of electricity they buy, and to sell back any excess. An independent power producer policy enables businesses to generate and sell electricity to Yukon Energy when conditions are appropriate.

Yukon Government Climate Change Action Plan

The Yukon government's 2009 Climate Change Action Plan seeks to enhance knowledge of climate change, adapt to climate change, reduce greenhouse gas emissions, and lead action in response to climate change. The Yukon government has set a cap on its own greenhouse gas emission by 2010 and a target to reduce its emissions by 20 percent by 2015 with the goal of being carbon neutral in 2020.

Public Utilities Act

The Public Utilities Act among other things defines a public utility as producing, generating, storing, transmitting, selling, delivering or furnishing electricity or gas to or for the public or a corporation for compensation. The act also defines the role of the Yukon Utilities Board (YUB) and the regulation of public utilities via a franchise. There are several Orders in Council that direct the YUB as well. One is the Rate Policy Directive (1995) O.I.C. 1995/090 that

ensures Yukon Electrical Company and Yukon Energy cannot charge customers different rates and all Yukon residential customers who use 1000 kWh or less per month are charged the same no matter their location in Yukon.

One of the YUB's roles is to regulate the utilities in Yukon to ensure the territory has a cost effective and adequate supply of electricity.

Sustainability

Yukon Energy is a member of the Canadian Electricity Association (CEA) and as such is committed to its Sustainable Electricity initiative - a three pronged vision which includes the health of the environment, society and the economy. The initiative has four elements: a CEA policy for sustainable development, corporate responsibility, the development of performance indicators and reporting, and a CEA public advisory panel and method for external verification. The policy that Yukon Energy has adopted commits Yukon Energy to the following:

- Minimize the adverse environmental impacts of our facilities, operations and businesses;
- Manage the environment resources and ecosystems that we affect to prevent or minimize loss and support recovery;
- Manage greenhouse gas emissions to mitigate the impact of operations on climate change, while adapting to its effects;
- Provide a safe and healthy workplace for our employees and contractors;
- Support a fair, respectful and diverse workplace for our employees and contractors;

- Communicate with and engage stakeholders in a transparent and timely manner.;
- Communicate with and engage Aboriginal people in a manner that respects their culture and traditions;
- Provide economic benefits to shareholders, communities and regions in which we operate;
- Produce, deliver and use electricity in an efficient manner while promoting conservation and demand side management; and
- Provide electricity to customers in a safe, reliable and cost effective manner to meet current and future needs.

Clean Energy

Clean energy, green energy and renewable energy are all terms used today with various meanings. Clean energy describes both renewable and non-renewable technologies that generate power. The renewable forms are varied, but typically are described as wind, solar, geothermal, bio-power, marine and hydro. These once alternative energy sources are now becoming more main stream as the technologies that support them become more efficient and affordable. Non-renewable sources of power such as natural gas are seen as an alternative to oil and diesel.

Clean power can be thought of in several different ways, for instance: 1) how clean is the energy is that is produced (any emissions) and 2) how clean is the technology's full "lifecycle" i.e. what type of materials are needed to build the technology, where do these materials come from, where are the components manufactured, what impact does the assembly

have, and where do the components go when the technology is decommissioned?

Yukon Energy adopts the same approach as BC Hydro to defining clean energy. It is any of the following: biogas, biomass, energy recovery generation, geothermal, hydrocarbon, hydro, hydrogen, municipal solid waste, solar, tidal, wave, wind or other potential clean or renewable electricity sources.

Resource Planning

Resource planning identifies the best clean energy generation and transmission options that can be developed to meet predicted future demand. In 2006, Yukon Energy's 20-year Resource Plan was developed and filed with the Yukon Utilities Board. The plan details near and long-term energy forecasts for various base-load and industrial-load growth scenarios. This plan is currently under review and is being rewritten to ensure Yukon Energy has adjusted to new conditions facing the corporation now and over the next five and ten year periods. Resource planning is a challenging exercise because any amount of growth on the existing system has a large impact on operations due to the fact that Yukon is isolated or unconnected to an external transmission grid like BC. This makes meeting new demand, especially from industrial clients, a significant challenge.

To date resource planning efforts have largely been focused on renewable energy solutions that meet future demand near to (within 50 km) or on the existing transmission grids, projects like adding the third turbine to the Aishihik power plant and the Mayo B hydro enhancement. Forecasts for energy demand are constantly being adjusted and present

scenarios indicate that even with the implementation of the existing proposed projects, demand will be greater than generation. New generation is required along with conservation and demand side management solutions.

The 2011 Resource Plan will address future growth scenarios within the context of existing government policy guidelines (Energy Strategy and Climate Change Action Plan) and advancements in clean energy technologies. It will also consider the introduction of an independent power producer policy, and a net metering policy. The plan will as well address the need for a demand side management (DSM) program and the impact of adding demand side management initiatives to the system.

To avoid future diesel use, the resource plan examines the potential for waste to energy, biomass, and wind generation along with LNG, Geothermal and DSM options.

Public Opinion Surveys

As part of Yukon Energy's multi-year public awareness campaign, the corporation completed two sets of public and stakeholder opinion surveys: one in June 2010 and the other in early 2011. The first set of surveys were designed to get a sense of what Yukoners and the business community knew and believed about the corporation. The findings from the first surveys helped design a public awareness campaign to give Yukoners a better understanding about who Yukon Energy is, what the corporation is trying to achieve, and why. Following the campaign, a second round of phone and internet surveys was undertaken to gauge whether the public's knowledge about Yukon Energy had changed.

Over 600 people took part on the Phase I surveys and the following trends emerged:

- Yukoners understood that hydro-generated electricity is the mainstay of power generation in the Yukon, but strongly supported the development of alternative energy sources to supplement hydro.
- Yukoners are looking to Yukon Energy to bring forward creative ideas in meeting future energy needs.
- Yukoners strongly supported the need for energy conservation as a part of the solution to managing the Yukon's energy supply and saw this as a shared responsibility among the public, the business community and big industry.
- While Yukoners had confidence in Yukon Energy's ability to plan, develop and manage the territory's energy needs, there was also concern that political and vested interest groups can be detrimental to effective, strategic, long-term planning.
- Yukoners wanted to remain engaged in the discussion around the territory's energy issues and the corporation's objectives for a clean energy future.

The Phase II survey consisted of telephone and online surveys and "pulse polls" targeting the general public and the business community. Many of the questions paralleled questions asked during Phase I to identify changes in knowledge, awareness and views of Yukoners concerning energy related issues. High response rates for the surveys indicate that Yukoners are significantly engaged and interested in energy related issues.

Within the general public, there are varying levels of awareness regarding the different

resource development projects being considered. There is, however, a general recognition that strategies are needed to increase energy production to meet future demand and that the industrial sector will be the big energy consumer. Other trends include the following:

There is a slight decline in the level of public confidence in Yukon Energy's ability to effectively plan and develop clean energy sources to meet future needs.

There is a strong preference for alternative energy and increased energy conservation measures (Yukoners see this as important from an environmental perspective and to diversify capacity to meet future energy requirements).

There was increasing support for hydro to supplement alternative energy from levels indicated by the Phase I survey results. The majority of respondents indicated that expanding alternative energy or a mix of alternative and hydro generation was preferred.

Only two percent of respondents preferred to expand diesel generation capacity. The question was not asked for natural gas-generated electricity.

The issue of paying for alternative energy received a mixed response. While a majority of survey respondents were willing to pay more for alternative energy the majority of "pulse poll" respondents were NOT willing to pay more than they are currently.

The results of the business surveys indicated increased confidence in Yukon Energy's ability to assess future energy needs but no increase in confidence in the corporation's ability to develop the resources required to meet those needs. Business/ community leaders also

expect the availability of power to get worse within the next five years.

While there was still a low level of support for diesel-generated electricity, there was an increase in moderate support which could be linked to reliability concerns. There was some willingness to pay more for renewable energy with 10 percent saying they would pay one to two percent more and 42 percent willing to pay up to five percent more.

A third phase in the public awareness campaign began in October 2011 and will run until the spring of 2012, with the goal of providing Yukoners with more detailed information about the work we have done to date regarding future energy options, and what we have planned for the near future.

Charrette

Yukon Energy's most recent 20-Year Resource Plan, which was developed in 2006 for the 2006-2020 planning period, provided the first public review of Yukon power resource planning since the early 1990s. Public engagement of the 2006 Resource Plan was limited to a public workshop on the Resource Plan followed by Yukon Utilities Board review at a public hearing.

As part of its priority to engage Yukoners, Yukon Energy is changing the way it involves Yukoners in its project-specific and longer term resource planning processes. Previously, public involvement began once a decision to move forward on a specific project was made or a resource plan was finalized and ready for filing with the Yukon Utilities Board. It is now corporate practice to engage affected First Nations, stakeholders and the interested public at the concept stage of a project to work together to identify issues, research priorities

and opportunities for project collaboration. This same early engagement approach has been applied to the development of the 2011 Resource Plan due in the spring of 2012.

To enhance public understanding of resource planning issues and to inform the 2011 Resource Plan, Yukon Energy engaged Yukoners (along with national and international recognized energy experts) in a three day Charrette planning process in Whitehorse in March where Yukon's energy demand situation and potential opportunities, both near-term and long-term, were reviewed. A cross-section of Yukoners representing various interests was invited to participate in the three day process. The Charrette included technology specific presentations from experts each morning with facilitated team discussions around energy choices in the afternoon. Daytime session results were summarized and presented each evening, giving members of the public an opportunity to comment and add to what was developed by the teams. The feedback loop also included a recap of each evening's event for the benefit of daytime participants.

Prior to the Charrette, community meetings were held in three Yukon communities (Mayo, Dawson City and Haines Junction) to learn about electrical energy concerns at the community level. In addition, stakeholder interviews were carried out involving approximately 50 individuals and representatives from a broad array of organizations, agencies and government departments. The Charrette's expert background reports, presentations, summaries of community and stakeholder consultations and summaries of the Charrette are all available on Yukon Energy's web site.

The objectives of the Charrette were:

- To educate Yukoners about the territory's current energy circumstances and the potential options to meet future energy demand;
- To inform the Yukon Energy Resource planning process;
- To develop energy planning principles Yukon Energy can use when making energy planning decisions and that can help with risk and trade off assessments; and
- To hear how Yukoners want to be engaged in future energy planning and energy decisions.

The Charrette resulted in the development of four energy planning principles:

- Reliability
- Affordability
- Flexibility
- Environmental Responsibility

Yukon Energy has committed to continue engaging Yukoners in resource planning, including opportunity to comment on a draft of the 2011 Resource Plan.

In developing the 2011 Resource Plan, Yukon Energy has worked to integrate its industry sustainability commitments, the territorial energy and climate change policy contexts and the principles identified by Yukoners during the Charrette process into a cohesive document identifying the tradeoffs and choices required to determine the Yukon's future energy mix.

Obligation To Serve

Regulatory principles and precedent maintain that Yukon Energy has an obligation to serve customers that request service within its

franchise area that are willing to pay their costs to connect to the grid. Major industrial customers located far away from the current grids would likely not be added to the grid due to the high cost of transmission connections that would be paid by the customer.

This issue gets tested on a case-by-case basis and may be limited by capacity, feasibility or risk factors.

Independent Power Producer (IPP) Policy

The IPP and Net Metering Policies were identified as priorities in Yukon government's Energy Strategy . Yukon Energy, Yukon Development Corporation and Yukon Electrical Company Limited have been working with Yukon government in developing the policies.

Yukon Energy was directed (along with Yukon Electrical) to return to the YUB with an IPP policy (which will be the YG policy). The draft policy has not yet been released for public review.

The IPP will provide Yukon Energy with capacity; however the utility sees purchased power as an upward driver on rates.

Net Metering Policy

The draft policy went out for public consultation in 2011 and the revised policy is now with the Yukon government for approval.

Customer side generation (net metering) is one of the components of the CPR recently completed as part of the development of a DSM plan.

This policy won't provide capacity for Yukon Energy but can help customers reduce their

electric bills by the number of kilowatt hours they self-generate.

PERFORMANCE OBJECTIVES

Optimize System Reliability and Efficiency

Background

- The completion of Mayo B and Aishihik's third turbine bring an additional 17 MW of hydro capacity to the Yukon Energy system.
- The newly integrated Yukon transmission grid brings with it both new challenges and new opportunities for long-term planning and operational efficiencies. The new hydro assets will provide clean energy for new and existing customers and will offset the use of diesel, which will save ratepayers money and reduce GHG emissions.
- Yukon Energy has made significant progress in improving system reliability on the Whitehorse-Aishihik-Faro (Southern Yukon) grid over the past three years but continues to struggle with too many outages on the Mayo-Dawson (Northern Yukon) system.

Priorities

- Implement operational training and staff development plans to enhance the integration of the Mayo-Dawson and Whitehorse-Aishihik-Faro grids.
- Update and implement operational plans for the Aishihik plant which incorporate the newly installed Aishihik third turbine into the system.
- Develop and implement new operational protocols for the new Mayo B hydro project..

- Continue the operational review of system efficiencies and implement capital upgrades which support system reliability.
- Improve system reliability to meet national standards and decrease controllable outages on the new integrated grid by 50% in 2012.

Develop Clean Energy Solutions to meet Forecast Demand

Background

- Load forecasts indicate the requirement for new generation of approximately 100 - 150 Gwh per year by 2014. This represents an increase in energy requirements of approximately 40% with loads increasing from 385 Gwh in 2010 to 543 Gwh in 2015. This additional load is a result of population growth and expansion of new residential subdivisions such as Whistle Bend in the City of Whitehorse and new Industrial loads provided by new mines connecting to the grid.
- In order to meet this new load, Yukon Energy has been conducting planning studies and examining a large number of supply options. These studies are challenged by the load forecast, the fact that Yukon is isolated from the North American grid, and Yukon Energy's current load/supply curve.
- In addition to those challenges the load forecast itself is subject to a great deal of both upside and downside risk. Mines may not develop and more mines may require power making the

job of accurately forecasting demand very difficult.

- Yukon Energy is fully committed to full public engagement on the issue of new demand and supply requirements. In March of 2011 Yukon Energy held an Energy Planning Charette and plans are to continue this process on a smaller basis to look at individual technology options. Yukon Energy has also been doing public opinion surveys related to planning and service performance. The results of these surveys are available on the Yukon Energy website.

Priorities

- Bring into service new supply projects, which will provide at least 100 Gwh of clean energy by 2014.
- Acquire grant funding or new methods of risk financing to enable Yukon Energy to plan for new projects without a requirement for equity returns or ratepayer risk.
- Procure financing for these projects that will enable Yukon Energy to build the projects and mitigate ratepayer risk over the long-term
- Continue to plan for the future and take steps and undertake work, which will allow Yukon Energy to protect the opportunity to build new projects by the 2014 timeline.
- Develop a strategy and a partnership plan to build new energy projects in concert with Yukon First Nation Partners.
- Implement an ongoing series of public discussions on energy challenges and technology opportunities, which will support Yukon Energy's commitment to

meaningful public engagement on energy planning.

- Make decisions on which projects to build and arrange preliminary financing by the Second Quarter of 2012.
- Work with the Yukon government regarding policy initiatives specifically the IPP and Net Metering policies currently being developed.
- Potential projects include:
 - Biomass
 - District Heating
 - Enhanced Hydro Storage
 - Southern Lakes
 - Mayo
 - Gladstone Diversion
 - Liquefied Natural Gas (LNG)
 - Geothermal
 - New Hydro
 - Waste-to-Energy / Biogas
 - Wind

Implement a Demand Side Management Program

Background

- Energy demand in Yukon has recently surpassed the hydro surplus that existed with the closure of the Faro Mine. Given increasing new demands for electrical energy and in anticipation of growing loads the Yukon Utilities Board instructed Yukon Energy (and Yukon Electrical) to develop a Demand Side Management plan to address consumption at the same time as we are considering new supply options.
- The need for a DSM plan is a priority at Yukon Energy and was a clear message coming out of the Energy Planning

Charette held early in 2011. Public surveys by Yukon Energy also support the need to take significant steps to deal with energy consumption along with the need for new supply.

- Yukon Energy in conjunction with Yukon Electrical and the Yukon government established a DSM planning committee in 2010 to address the need to take action on energy demand and develop a comprehensive DSM plan. Several pilot projects and public engagement activities were also undertaken to support plan development.

Priorities

- Complete the Conservation Potential Review Study commissioned in 2011. Once the report is complete examine the data and set priorities for DSM work.
- Establish measurable targets and costing techniques to measure the success of the DSM programs.
- Continue to implement DSM pilot programs and assessment work to ensure that action on reducing demand is well underway during 2012.
- Work with industrial partners to complete energy audits and follow-up work to ensure efficiencies are implemented as appropriate.
- Deliver a public education program through, training programs, public outreach campaigns and specific school based initiatives.
- Work with community partners to develop and deliver specific focused demand reduction programs on a community-by-community basis.

Project Capital Financing

Background

- Yukon Energy is a rate-regulated utility subject to the Yukon Utilities Act and under the jurisdiction of the Yukon Utilities Board. Essentially, Yukon Energy is regulated by an economic regulator, which means the regulator is primarily concerned with Yukon Energy's costs and their impact on ratepayers.
- Yukon Energy is also regulated by the Public Utilities Act, the Business Corporations Act, the Yukon Waters Act. and both the written and unwritten policies and directions provided by its ultimate shareholder, the people of Yukon, as represented by the Yukon government. As well, public consultation and public engagement influence the direction that Yukon Energy takes in terms of projects and policies.
- Ensuring that ratepayer risk and the long-term exposure to cost risk is of primary concern to Yukon Energy. In recent years the corporation has taken steps to build major capital projects with little or no cost to ratepayers by using innovative financing tools. In this regard, Yukon Energy has been able to combine financial grants from federal and territorial sources, acquired contributions from industrial customers, and secured project contributions from YDC. These financing methodologies are imperative if Yukon Energy is going to support the growth in the territory's economy, continue to

expand its asset base and serve a quickly growing electrical load.

- Yukon electricity ratepayers cannot shoulder the complete burden of building new generation assets. The small rate base and the high risk associated with building large projects makes it important to deal with the issue of both short-term risk and long-term financial risk up front before projects proceed.

Priorities

- Identify sources of existing funding for both project planning and project construction.
- Establish a framework for financing new generation projects to mitigate risk, which includes long-term capital contributions and financing support.
- Build on First Nation engagement activities to pursue First Nation partnerships in Yukon Energy projects.
- Establish a fund that will reduce the risk to ratepayers for the necessary planning costs required to build an inventory of available generation and transmission projects.

Financial Sustainability

Background

- Yukon Energy has not achieved its approved Rate of Return on Equity in the last four years due to rising costs.
- The cost of maintaining existing aging assets to ensure reliability is increasing.
- In the 14 years since the last rate increase, labour costs have increased. Since 2009 alone we have added approximately a dozen positions to address the workload of a larger system and increasing challenges.
- Rate increases have been mitigated and deferred due to:
 - sale of surplus hydro
 - diesel displacement
 - debt refinancing
 - capital contributions from governments and customers.

Priorities

- Develop a General Rate Application to increase revenues and provide the financial capacity needed by Yukon Energy to meet customer requirements and expectations.

GLOSSARY

Biomass - Energy resources from organic matter, including wood, agriculture waste, and other living material that can be burned to produce electricity and heat (from the Energy Strategy).

Clean energy - Yukon government's Energy Strategy does not define clean energy specifically but speaks to increasing renewable energy, conservation and responsible use of oil and gas resources. BC Hydro and the BC Government define clean energy as biogas, biomass, energy recovery generation, geothermal, hydrocarbon, hydro, hydrogen, municipal solid waste, solar, tidal, wave, wind or other potential clean or renewable electricity sources.

Climate change - A change in the average weather that a given region experiences. Climate change on a global scale includes changes to temperature, shifts in wind patterns, and changes to precipitation (from Climate Change Action Plan).

Controllable outages - There are planned and unplanned outages. Controllable outages are those that are unplanned and caused by human or equipment failure as opposed to being caused by an element of nature like lightning, birds or wind.

Demand side management (DSM) - Initiatives that influence patterns of energy consumption, including actions to shift energy use from peak times to periods when less energy is required (Energy Strategy).

Geothermal - The use of heat from the earth to generate electricity or provide space heating and cooling (Energy Strategy).

Independent power producer (IPP) - An energy producer who generates electricity for sale to utilities or consumers such as the general public, businesses or industries (Energy Strategy).

Net metering - Electricity consumers who own small, renewable energy generators such as wind or solar can receive a credit for a portion of the electricity they generate (Energy Strategy).

Renewable energy - Energy that comes from sources renewed on an ongoing basis through natural processes. Examples include sun, wind, wood, flowing water, or relatively warm ground, air or water temperatures (from Climate Change Action Plan).

Sustainable development - Beneficial socio-economic change that does not undermine the ecological and social systems upon which communities and societies are dependent (Umbrella Final Agreement).

Sustainable electricity - is about pursuing innovative business strategies and operating activities that meet the needs of members, stakeholders and the communities in which we operate, while protecting and enhancing the legacy we leave for future generations (Canadian Electricity Association).