



Biomass Energy Workshop Report



(Photo from Pat MacDonell's presentation)

December 1st 2011, at the Old Fire Hall in Whitehorse

"Forest management is community development" (Workshop participant).

1. Introduction

At the Yukon Energy Charrette in March 2011, Yukon Energy brought together governments, Yukoners and energy experts from across Canada for three days of discussion and sharing of information on resource options for Yukon's energy future. One of the key outcomes from the charrette was Yukon Energy's commitment to continue engaging stakeholders, governments and the public in planning for the future. To meet that commitment and plan in public, Yukon Energy is holding energy workshops on a series of topics and resource options. Biomass was the second in the series. The information gathered from the workshops and public meetings is being used to inform and direct the work of Yukon Energy and its consultants in carrying out resource options planning.

This is the report from the Biomass Workshop and Public Meeting held December 1st, 2011 in Whitehorse.

2. Background

At the Yukon Energy Charrette in March 2011 Fernando Preto from NRCAN (biomass expert) presented a high level overview of the potential of biomass in Yukon. He also provided North American and European examples. Biomass became a preferred option for many of the charrette participants and the public because it was presented as a local and renewable resource option with potential business development opportunities.

In June 2011, Yukon Energy engaged the engineering firm Morrison Hershfield Ltd. to prepare a biomass preliminary energy evaluation. The work assisted in the assessment of biomass in the context of Yukon Energy's 20 Year Resource Plan. The Preliminary Yukon Biomass Energy Evaluation Letter Report identified biomass resources within a 250 km radius of Whitehorse that could potentially provide the feedstock required to maintain a 25 MW electrical generating facility for 20 years. The Morrison Hershfield Letter Report was used as the background paper to initiate discussion with potential partners and stakeholders.

3. Workshop Objectives

In consultation with representatives from Yukon Government's Forest Management Branch, the Champagne and Aishihik First Nations and the Haines Junction Renewable Energy Committee, the following workshop objectives were developed:

1. Examine biomass with stakeholders, governments, energy experts and Yukoners in the context of Yukon Energy's planning principles: reliability, affordability, flexibility, and environmental responsibility.
2. Identify socio-economic, environmental and cultural concerns, issues and opportunities in relation to forest harvesting for bioenergy purposes; and

3. Confirm the planning framework (Forest Management Planning) for Yukoners that will be used to address concerns, issues and opportunities related to bioenergy.

4. Workshop Participants

Over 80 invited and interested workshop participants attended the one day session. Participants represented the following stakeholders, governments and development corporations:

Government of Canada	Government of Yukon (Energy Mines and Resources, Environment, Highways and Public Works)
Village of Haines Junction	
City of Whitehorse	Raven Recycling
Yukon Conservation Society	YESAB
Dakwakada Development Corporation	Council of Canadians
Champagne and Aishihik First Nations	Yukon Wood Products Association
Yukon Cold Climate Innovation Center	Dimok Timber
Arctic Inland Resources	Yukon Utilities Consumer Group
Interested Public	

The full day workshop was also attended by Yukon Energy senior staff and consultants. A public meeting in the evening was attended by 52 people.

5. Presentations

The workshop provided the opportunity for Yukon Energy to share the findings from the Preliminary Yukon Biomass Energy Evaluation Letter Report with the participants as well as for key stakeholders, partners and governments to present their work on biomass/forestry planning, policies and legislation. The following presentations were delivered at the workshop and are posted on the Yukon Energy website at http://yukonenergy.ca/energy/public_engagement/biomasswkshop/.

- a) ***Setting the Yukon Energy Planning Context***: David Morrison, President and CEO Yukon Energy
- b) ***Biomass Utilization Overview*** (Yukon Energy's preliminary investigation) Don McCallum P. Eng., Director of Environment, Morrison Hershfield
- c) ***Prefeasibility Overview of Three Megawatt Biomass Gasification Power Plant at Haines Junction***, Jay Cowan, Senior Consultant, The Anokiiwin Group

- d) ***Territorial Forest Management Legislation – A Road Map to Biomass Energy***, Bill Beard, Operations Manager, Forest Management Branch, YG
- e) ***Forest Harvesting: Challenges, both potential and real, to providing biomass on an industrial scale***, Pat MacDonell, A/Director, Forest Management Branch, EMR, YG
- f) ***First Nation Perspective on Forest Management in the Context of Final Land Claims and Self-Government Agreement***, Roger Brown, Forestry and Environmental Manager Dept. Heritage, Lands and Resources Champagne and Aishihik First Nations
- g) ***Biomass Energy: is it right for the Yukon?*** Karen Baltgailis, Executive Director, Yukon Conservation Society
- h) ***Timber Supply for Estimating Feedstock Availability*** - Kirk Price, Forest Management Analysis, Forest Management Branch, YG
- i) ***Socioeconomic Considerations for Bio-Energy Development***, Paul Kishchuk, Economist, Vector Research
- j) ***Bioenergy Development in Scandinavia- Yukon Research Center Tour***, Stephen Mooney, P.Eng. Director Cold Climate Innovation Centre, Yukon College
- k) ***Yukon Draft Bioenergy Strategy – Highlights of the strategy***, Bob Kuiper, Senior Planner, Corporate Policy & Planning, EMR, YG
- l) ***Yukon Wood Products Association (YWPA)***, Ron Johnson, President, YWPA

Setting the Yukon Energy Planning Context and The Yukon Wood Products Association's presentations were not delivered by way of a PowerPoint presentation and are therefore not posted on Yukon Energy's website.

6. Workshop

Following the presentations the participants were organized into facilitated groups ranging from 6 to 8 people. The groups were asked to discuss and record their ideas and comments with the intention of the work being shared with the participants, the public and being included in Yukon Energy's wood biomass feasibility and planning work.

The participants were asked to report on the following questions:

- 1. Explore options for how bioenergy can be implemented in Yukon. What are the options, and how well does each option contribute to the following:**
 - a. Local employment opportunities
 - b. Community benefits and involvement
 - c. Energy output and facility efficiencies
 - d. Facility development, feedstock harvesting and transportation costs
 - e. Minimizing adverse environmental, socio-economic and cultural impacts

2. Discuss a strategy for moving forward with bioenergy in Yukon

- a. What information/resources are needed to continue moving forward/planning?
- b. What does Yukon Energy need to do to move this forward?
- c. What does Yukon Government need to do to move this forward?
- d. What do First Nation Governments need to move this forward?
- e. Who are the other stakeholders and what do they need to move this forward?

7. Results

The following is a summary from the workshop and public meeting.

Options for how bio-energy can be implemented in Yukon

- Start small, 25 megawatts is too big to start with;
- Start with 3 MW in Haines Junction and Whitehorse then in 5 to 10 years increase the size to 10 to 20 MW;
- Implement small pilot and test projects because this is new technology for Yukon;
- Spread the risk through multiple facilities and communities rather than one large 25 MW;
- Faster to implement smaller facility which could meet near term demands and reduces the pressure to develop less desirable energy options;
- Develop biomass with other renewable resource options, e.g. wind and DSM;
- Use the waste heat;
- Consider the local economies and community development opportunities associated with a new biomass industry;
- A large project could pull jobs and the industry from outside – need to see what the local industry can support;
- Consider a strategy that includes 3 MW plants in Dawson City, Watson Lake, Haines Junction, Teslin (a distributed approach);
- What is socially acceptable/social licence needs to be addressed to determine the appropriate scale;
- Need to consider salvage logging and logging of green timber;
- Does the Yukon have the human resources/skilled workers to run the plants;
- Locally based plant has high potential as a community development catalyst;
- Allows for energy security because the resource is local;
- Air quality is a concern and needs to be addressed;
- Land based impacts need to be considered: water quality of the creeks and wetlands, visual impacts, access and wildlife;
- Need to consider the delivered wood costs which needs to include roads and transportation;

- Use the waste wood from power smarting and road/powerline clearing;
- Need to ensure the forests can be managed sustainably;
- Need to consider the challenges for running the plant full-time and part-time;
- Consider biomass storage at Whitehorse Landfill;
- Yukon Energy can demonstrate corporate leadership and drive the forest industry and government;
- Consider implementing through IPP's;
- Spread out the footprint of the impact;
- All the opportunities go to Whitehorse – consider the communities;
- Smaller scale costs could be offset by being closer to the feedstock;
- Cut green wood and a portion of the wood goes to saw logs and a portion to bioenergy; and
- Need to ensure cogeneration is most efficient versus just heat.

What is needed to move bioenergy forward as a resource option in Yukon?

- Yukon Energy needs to show leadership and take action;
- Start small (3 to 5 MW);
- Determine what scale works best for environment, local employment and social license;
- Minimize environmental, social and cultural impacts;
- Certainty of supply;
- Understanding and certainty of regulations;
- First Nation Partnerships;
- Update/develop legislation to facilitate progress of bioenergy and clarify roles;
- Forest Management Plans;
- Salvage policy;
- Regional forest harvest levels;
- IPP framework;
- Yukoners need to overcome fear of forest harvesting;
- Social license to harvest;
- Purchase agreements;
- Participation agreements;
- Integrate with the Yukon Regional Land Use Planning process;
- Share the environmental impacts of the various scales with Yukoners;
- Consider the off-grid communities;
- Do not negatively impact current wood users now in regards to cost and supply;
- Consider temporary plants for mines;
- Examine the use of local pellets or chipped;
- Capital costs of equipment could be a barrier for local involvement;
- Biomass needs to be considered along with demand side management and other renewable options; and
- A market that will use summer energy.

Who needs to be involved with Yukon Energy to move bioenergy forward as a resource option for Yukoners?

- Yukon Government;
- Yukon First Nations;
- Consumers: mines, residential and commercial;
- Municipalities;
- Conservation Groups;
- Forest Industry; and
- Non-timber forest users: tourism industry, hunters/trappers and traditional users.

8. Summary

The key finding from the wood biomass workshop was the strong support for a 3 to 5 megawatt initial project that can be scalable to a larger 10 to 20 megawatt project in the future. The participants support wood biomass as a renewable energy option. The participants and public recognise the benefits of a locally available and renewable resource that can stimulate the development of a local forest industry, and create jobs as well as electricity and heat.

The participants expressed a desire to have Yukon Energy show leadership in the development of the resource in partnership with Yukon First Nations, Yukon Government and communities. It was recognised that the supporting forestry infrastructure needs to be developed and if the project is too large initially, Yukon businesses will not be ready to compete. Community development and local opportunities need to be maximised.

Cultural, environmental and social impacts were highlighted and referred to as ‘the social license’. An education process along with forest management planning and identifying appropriate harvesting amounts needs to be carried out by Yukon Government and Yukon First Nations to better determine what the social license for forest harvesting is.

There was strong support for the use of waste heat in considering the location of the generating facility. Even though there was strong support for a distributed community model of smaller facilities throughout Yukon the participants recognised the largest and most efficient market for heat sales is in Whitehorse.

Yukon Energy thanks all those that participated in the workshop and public meeting. The presentations from the energy and respective workshop experts along with the responses to the workshop questions are being incorporated into Yukon Energy’s biomass prefeasibility work and development of the Twenty Year Resource Plan. Yukon Energy is committed to working with its partners, sharing information and to keep talking.