

TECHNICAL WORKSHOP #1

AN INTRODUCTION TO NEXT GENERATION HYDRO

Summary and Feedback Report

December 17, 2014



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INTRODUCTION

On November 26th, the first Next Generation Hydro Technical Workshop and speaker event was held in Whitehorse. The purpose of the technical workshop was to introduce Yukoners to Next Generation Hydro and its first phase - Project Identification. This phase is expected to be complete by the end of 2015 with the completion of a business case for one or more potential hydro projects, with supportive renewables and transmission that will meet future need 20 to 50 years out. This workshop is the first in a series designed to receive feedback on the technical work being completed for Phase 1: Project Identification of Next Generation Hydro. The feedback is being recorded in reports like this one and in a final document called Next Generation Hydro Discussion Paper to be completed after the final workshop in the summer of 2015.

TECHNICAL WORKSHOP OBJECTIVES

The overarching objective of the workshop was to inform audiences of the Directive, the technical process, concepts of hydro and the release of Site Screening Inventory: Part 1. Additional goals included:

- Inviting a broad range of technical representatives from governments and organizations;
- Introducing the Next Generation Hydro Directive;
- Providing a broad overview of the technical and engagement processes to be followed under Phase I: Project Identification;
- Providing a history of hydro;
- Providing an overview of the technical process;
- Providing an overview of Site Screening Inventory rational and release of Site Screening Inventory: Part 1 of 2 report;
- Reviewing concepts related to energy generation and hydro;
- Providing an opportunity for discussion of information shared through breakout groups.

OVERALL ATTENDANCE

There were 83 registered participants and 17 non-registered participants in attendance during the workshop from:

- Access Consulting
- ATCO Electric Yukon
- Canada Parks and Wilderness Society
- Carcross Tagish Management Corp.
- Champagne and Aishihik First Nation
- City of Whitehorse
- Council of Yukon First Nations
- Dakwakada Development Corporation
- Dan Keyi RRC
- Dawson District Renewable Resource Council
- Dena Nezziddii Dev Corp
- Environment Canada
- Experiential Science 11 Students
- Fish and Wildlife Management Board
- FN Chamber of Commerce
- Kwanlin Dun First Nation
- Laberge Environmental Services
- Laberge RRC
- Little Salmon Carmacks First Nation
- M'Clintock Environmental
- SLR Consulting
- Ta'an Kwäch'än Council
- Teslin Tlingit Council
- Whitehorse Chamber of Commerce
- Yukon Environmental and Socioeconomic Assessment Board
- YG - Climate Change Secretariat
- YG - Economic Development
- YG - Energy Mines & Resources
- YG - Energy Solutions Centre
- YG - Water Resources Branch
- Yukon Chamber of Commerce, Transportation and Energy
- Yukon Chamber of Mines
- Yukon Conservation Society
- Yukon Development Corporation
- Yukon Energy Corporation
- Yukon Heritage Resources Board
- Yukon Research Centre
- Yukon River Inter-Tribal Watershed Council

First Nations Representation:

Overall there were 19 First Nation workshop participants. They included:

Governments: Kwanlin Dun (2); Little Salmon Carmacks (2); Ta'an Kwäch'än (2); Champagne and Aishihik (2); Teslin Tlingit (2).

Renewable Resource Councils: Dan Keyi (2); Laberge (1); Dawson District (2).

Development Corporations: Carcross/Tagish (1); Dakwakada (1); Dena Nezziddii (1); Chief Isaac (1).

WORKSHOP AND EVENING SPEAKER EVENT FORMAT

The workshop was broken into two primary sections. The first half consisted of a series of presentations to provide background, awareness materials and present the results of the Site Screening Inventory (Part 1 of 2) report. In the second half, attendees participated in five-breakout group discussions through a World Café. The workshop concluded by hearing the results of the breakout groups and reviewing next steps in Phase 1: Project Identification. Participants were also asked to complete a feedback form regarding their experience at the workshop.

In the evening, a speaker event was hosted from 7pm-9pm where members of the public were invited to hear a shortened version of some of the workshop presentations. The presentations were followed by a questions and answer session with the presenters.

Workshop Presentations

Welcome and Introductions

- **Chuck Hume, Champagne and Aishihik First Nation Elder:** Opening Prayer.
- **Minister Scott Kent, Yukon Development Corporation (YDC):** Welcome and opening remarks
- **Darielle Talarico, Tipping Point Strategies:** Workshop facilitator. Provide overview of workshop outcomes and expectations. Introduced Next Generation Hydro team members.

Presentation #1 – Next Generation Hydro Directive

- **Lisa Badenhorst, Project Director, YDC:** Overview of Directive intent and process of Phase I: Project Identification.
- **Andrew Hall, President, Yukon Energy Corporation:** Overview of short-term activities and role of YEC in Yukon energy planning.

Presentation #2 – History of Hydro in Yukon

- **Paul Birkell, former Chief of Champagne and Aishihik First Nation;**
- **Chuck Hume, former Northern Canada Power Commission employee;**
- **Darielle Talarico, Tipping Point Strategies:** Presented History of Hydro and facilitated input from panel and audience.

Presentation #3 – Hydro Energy Education Concepts and Technical Process

- **Peter Helland, Midgard Consulting Inc.:** Introduction to technical aspects of hydro energy generation and overview of technical process.

Presentation #4 – Technical Process and Site Screening Inventory Part 1

- **Peter Helland, Midgard Consulting Inc.:** Continuation of overview of technical process followed by presentation and explanation of Site Screening Inventory (Part 1 of 2).

World Café Breakout Groups

After the presentations, participants were divided into five smaller groups of 10-20 people. The groups rotated through five facilitators and discussed the following topics:

1. **Directive and Phase I: Project Identification:** facilitated by Lisa Badenhorst, Project Director, YDC.
2. **Technical and Engagement Process:** facilitated by Darielle Talarico, Tipping Point Strategies.
3. **Project Identification Screening:** facilitated by Peter Helland, Midgard Consulting Inc. and Sofia Fortin, Tipping Point Strategies
4. **Benefits of Hydro:** facilitated by David Morrissette, Tipping Point Strategies/Access Consulting
5. **Effects of Hydro:** facilitated by Bill Klassen, Midgard Consulting Inc./SLR

At the end of the breakout group session, each facilitator presented the themes of the conversations held at their station.

Evaluation Forms

At the end of the workshop participants were asked to complete evaluation forms based on the following questions:

1. Overall how informative were the speakers at the workshop?
Poor 1 2 3 4 5 Excellent
2. Which session did you find the most useful/interesting? What about the session engaged your interest?
3. How did you enjoy the breakout sessions?
Poor 1 2 3 4 5 Excellent
4. Do you have any comments/suggestions about the breakout session format?
5. Overall, do you feel the workshop has adequately informed you of the Phase I: Project Identification relating to:
 The intent of the YDC Directive OIC 2013/201?
 Yes No
 The technical process?
 Yes No
 Opportunities for participating in the engagement process?
 Yes No
6. How do you feel about the Technical and Engagement Process for Phase I: Project Identification?
7. Do you have any preliminary comments about the results of the Part I Site Screening?
8. Any suggestions for future engagement activities within Phase I: Project Identification?
9. Would you like to participate in the next workshop?
 Yes No

Evening Speaker Event

The public was invited to the evening speaker event. The event was recorded and is available on the website, nextgenerationhydro.ca, for those unable to attend the workshop or evening event.

Joanne Fairlie, Chair, YDC: Welcome and opening remarks;

Darielle Talarico, Tipping Point Strategies: Evening facilitator and introductions to Next Generation Hydro team;

Lisa Badenhorst, Project Director, YDC: Overview of Directive and process of Phase I: Project Identification;

Peter Helland, Midgard Consulting Inc.: Overview of technical process and presentation and explanation of Site Screening Inventory (Part 1 of 2) report.

Question and Answer session facilitated by Darielle Talarico.

EVALUATION RESULTS OF WORKSHOP FORMAT

Participants were asked to complete a workshop evaluation form at the end of the day. There were 26 forms completed, below is a summary of the feedback concerning the workshop format.

Presentations

Rating	Most Interesting	Comments
3.9/5	Site Screening	<ul style="list-style-type: none">interested in site screening criteria;a lot of information to receive, overwhelming;good simplification of technical information.

Breakout sessions

Rating	Comments
3.9/5	<ul style="list-style-type: none">too many sessions and needed more time in each session;good for smaller participation with a diverse range of participant backgrounds and perspectives;some found the facilitators to be defensive or scattered;some group discussion was dominated by a small number of participants making it difficult to contribute to conversation.

Other

Information adequacy: most participants felt the materials and presentation provided during the workshop were adequate to inform them of the Directive, Technical and Engagement Processes.

Interest in next workshop: all indicated that they are interested in attending the next workshop.

ANALYSIS OF PARTICIPANT INPUT

Comments and input from workshop and evening participants were documented from the question and answer sessions, breakout groups and evaluation forms. These were analyzed to derive themes of participant feedback and concerns. Documentation of the breakout groups, question and answer sessions and evaluation forms are in the appendix.

Theme - Directive

DIRECTIVE IS NARROW IN SCOPE

Breakout group participants discussed the mandate of the directive to investigate one or more hydro projects to meet energy demand 20-50 years from now. Some comments included:

- Whether several smaller hydro projects instead of one or more larger projects could meet energy needs;
- Whether other energy generation methods; specifically wind, solar, geothermal and nuclear would be a part of the Next Generation Hydro conversation.

CONFUSION AROUND THE INTENT OF THE DIRECTIVE

Some participants felt the intent of the Next Generation Hydro Directive is to lead to construction of a new hydro facility.

- This required clarification from YDC that the intent of Next Generation Hydro is to investigate the viability of a project and does not guarantee any given project will move beyond Phase I: Project Identification.

DIFFERENTIATION BETWEEN SHORT VS LONG TERM ENERGY NEED

Some participants were focused on smaller generation projects, such as smaller hydro and other renewables as a means to meet energy need.

- This led to conversation about energy demand forecasts and energy need in the long term (20-50 years) compared to short-term projects and the short-term need.

- This included conversation that smaller hydro and other renewables can be employed to meet energy demand in the short-term (<10 years).

Theme - Yukon Energy Players

CONFUSION AROUND ROLES OF ENERGY PARTNERS

Some participants were unclear of the roles and responsibilities of Yukon's different energy organizations (i.e. Yukon Development Corporation, Yukon Energy Corporation, ATCO Electric Yukon, Yukon Government).

- Participants were informed that Yukon Development Corporation is responsible for investigating one or more hydro projects that can meet Yukon's energy demands 20-50 years from now, and;
- Yukon Energy Corporation, ATCO Electric Yukon and Yukon government have various energy planning mandates that focus on short-term energy demand, smaller hydro and other energy generation methods.

Theme - Engagement

APPRECIATIVE OF EARLY ENGAGEMENT

Some participants expressed their appreciation for being involved near the beginning of the Next Generation Hydro process.

- This included comments about promoting transparency;
- Alternately, some participants stated that the engagement was too early.

UNCERTAIN OF OPPORTUNITIES FOR ENGAGEMENT

Some participants were uncertain of the engagement process and where there were opportunities for input, especially for the public.

- This included comments that there were not enough opportunities for public engagement, and;
- Others expressed that they were unsure of the opportunities for input outside of the workshops.

UNCERTAIN OF HOW INPUT WOULD BE USED IN DECISION MAKING PROCESS

Some participants were unclear about how their input would be used in Phase I: Project Identification.

- This included discussion about transparency and the need to explain how input will be used in the decision making process.
- Participants were informed that all input would be compiled into the *Next Generation Hydro Discussion Paper*, prepared by Tipping Point Strategies and presented to the YDC board for consideration with the final Next Generation Hydro and Transmission Viability Study to be prepared by Midgard Consulting Inc.

Theme - Technical and Site Screening

WHY EXCLUDE MAIN STEM OF YUKON RIVER

Many participants questioned the decision and origin of the criteria to remove sites along the main stem of the Yukon River.

- This included comments that the Yukon River is already the most impacted river in the Yukon, and;
- The current screening criteria selects sites on less impacted rivers.

QUESTIONS ABOUT USING INTER-JURISDICTIONAL TRANSMISSION TO MEET ENERGY DEMAND

Some participants questioned if new transmission to a neighbouring jurisdiction, such as British Columbia or Alaska, could fulfill future energy need instead of constructing a large hydro facility.

- This included discussion around cost comparisons for new hydro or new transmission or both, and;
- Participants were informed that two technical papers regarding transmission viability are to be released during the third workshop.

QUESTIONS ABOUT SITE SCREENING CRITERIA

Participants had many questions about specific sites that were screened out in the Site Screening Inventory (Part 1 of 2).

- This included discussion about viability of specific sites that were removed under the screening criteria, and;
- Participants were informed that some sites might still be pursued by other energy organizations.

Theme - Environmental and Socioeconomic Effects

FLOODING IS AN ENVIRONMENTAL CONCERN

Some participants were concerned about the environmental impacts of flooding.

- This included comments about loss of habitat for fish, wildlife, vegetation, heritage resources, traditional use and hunting grounds, and;
- Other comments around the specific effects of reservoirs, such as erosion.

HYDRO IS PREFERABLE TO FOSSIL FUELS

Some participants reflected that hydro is a clean, renewable energy source that can displace dependency on fossil fuels.

UNCERTAINTY ABOUT THE INTENT OF NEXT GENERATION HYDRO TO MEET FUTURE INDUSTRY AND RESIDENTIAL ENERGY DEMAND

Some participants discussed whether a new hydro project would be built to meet industry energy demands.

- This included comments about constructing new hydro to provide energy for mines.
- Participants were informed that preliminary forecasts have predicted that Yukon's population will double by 2065, indicating that the need for Next Generation Hydro will be driven by population growth.
- Participants were informed that the next technical paper, *Yukon Electrical Energy and Capacity Need Forecast (2035-2065)* will explain drivers of future energy demand. A draft copy of this paper will be released in January 2015.

Workshop Format

Participants who completed the workshop evaluation forms had some of the following comments:

- The presentations provided an adequate amount of information to inform them about Next Generation Hydro.
- Presentation #4 – Site Screening Inventory (Part 1 of 2) was the most interesting presentation.
- An overwhelming amount of information was delivered in one day.
- The breakout sessions were good and participants enjoyed the smaller discussion.
- There were too many rotations and the time in each group was too short.

SUMMARY

The “An Introduction to Next Generation Hydro” workshop was well attended by a diverse range of participants. The participants were provided with an introduction to Next Generation Hydro, heard about the history of hydro in Yukon, gained a better understanding of energy generation and Yukon energy challenges. They were also provided with an overview of the first technical paper, Next Generation Hydro and Transmission Viability Study – *Site Screening Inventory (Part 1 of 2)*. Overall, participants enjoyed the workshop and discussions amongst a group with such a diverse range of backgrounds and experience. This includes the Experiential Science 11 students, who enjoyed the workshop and learning experience and the YDC Board Members who worked with participants throughout the day.

There was a significant amount of information shared and some felt overwhelmed. Many enjoyed the breakout groups though reflected that there were too many intervals and the sessions were too short. These and other comments about the workshop format will be considered when planning the next workshops.

There were many questions about the Directive concerning the scope and intent. This included conversations around the roles of other Yukon energy players, short vs. long term energy planning and the intent of Next Generation Hydro. The team focused attention on the goal to assess the

viability of one or more hydro projects to meet energy demand 20-50 years from now. This includes discussions about the role of other Yukon energy players in meeting short-term energy needs and the use of other energy generation methods.

In regards to engagement, participants were uncertain of opportunities for input and how input would be used in the decision-making process. It was clarified that there will be an extensive engagement and awareness campaign to inform Yukon citizens about Next Generation Hydro. Through the workshops and public speaker events, participants will have opportunities to provide their input. That input will be compiled and reported through documents such as this. At the end of the technical and engagement process, a final engagement summary document will be prepared and provided with the *Next Generation Hydro and Transmission Viability Study* to the Yukon Development Corporation Board. Using these two documents the board will make their recommendation.

Participants were interested in the technical process and explanation of the Site Screening Inventory (Part 1 of 2) selection criteria. The technical information was simplified well and participants relayed that they understood the rationale of the screening criteria and some learned new technical facts about energy generation. There were many inquiries about the site-screening inventory related to the Directive and screening criteria and removal and/or selection of specific sites. Several of the sites discussed may be pursued by other energy organizations to meet short-term energy demand.

There were various perspectives about the environmental and socio-economic effects of hydro. It was recognized that hydro is an affordable, reliable, renewable source of energy and preferable to fossil fuels. However, there is concern around the effect of flooding and reservoirs on habitats, and heritage and cultural resources. Some participants referred to the four-legged stool analogy and questioned the methodology used to ensure the environmental, technical, social and economic balance. This will also be an ongoing and evolving discussion over the next year.

NEXT STEPS

An Introduction to Next Generation Hydro was the first of three workshops scheduled during Phase 1: Project Identification. The second workshop, Technical Workshop #2: Yukon Electricity Demand Forecast and Next Generation Hydro Short List will be held January 29-30, 2015 at the Westmark Whitehorse. The objective of this workshop will be to present the next two technical papers, Yukon Electrical Energy and Capacity Need Forecast (2035-2065) and *Yukon Next Generation Hydro and Transmission Viability: Site Screening Inventory (Part 2 of 2)*. Several questions raised in the first workshop will be discussed and the Next Generation Hydro conversation will continue to evolve. Participants from the first workshop will be invited as well additional participants that were unable to attend.