



Slave River Hydro Development

Overview and Current Status

Presentation to
NWT Chamber of Commerce AGM
March 30, 2009

Overview of Presentation

- **SRHD Background**
- **Work to date**
- **Current Status**
- **Development Timeframe**
- **Risks and Opportunities**

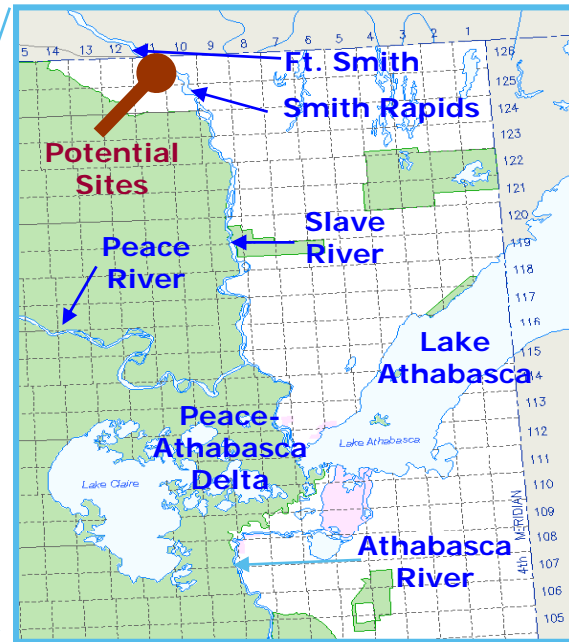
What is Slave River Hydro Development?

- ATCO Power and TransCanada working together with local communities to assess the environmental, social and economic viability of a hydro-electric facility on the Slave River
- TransCanada, a North America-wide pipeline and energy services company and ATCO Power, a world-class developer, construction manager, owner and operator of independent power generation plants.
- Potential development of clean, renewable, CO₂ emission-free large scale energy generation



Slave River south of Ft. Smith

SRHD Background



- Largest river in Alberta – 80% of water outflow
- Extensively studied in 1980's as 1800 MW plant with large flooded area
- Did not proceed due to economic, community and market integration concerns

SRHD Background

Why look at Slave now?

- AB electricity system has doubled in size
- Clean power has higher value due to changes in GHG legislation
- Other forms of environmentally friendly generation are expensive and have greater technology risk
- Initial community consultation for feasibility studies has been generally positive

SRHD Background

Project vision

- Slave River Hydro Development – a unique renewable development opportunity which could potentially avoid up to 6 million tonnes of greenhouse gas emissions annually
- Run-of-River - proven technology which uses water rather than consumes water; minimizes environmental impacts
- Project could be operational in 12 years, if balance between economics and impacts is achieved, and if governments, First Nations and communities are supportive

Work to Date – Screening Study

- High level technical review of site options
- Order of magnitude economics
- Benchmark against competing technologies
- Initiate discussions with key communities
- Environmental Gap Analysis

Work to Date – Preliminary Assessment

- Desk top review of plant and TX design, performance and O&M
- Develop permitting and regulatory schedule
- Economic model and risk analysis
- Formal and informal meetings with community leaders (from Ft. McMurray to Ft. Resolution)
- Positive response to concept from Alberta and Federal governments
- Met with various officials in NWT over past two years to create awareness of project

Results from Preliminary Assessment

Generating Station

- Up to 1500 MW looks viable (~ 8500 GWh/yr)
- Balance between economics and impacts
- Run of river type operation

Transmission Line

- Two parallel 500kV AC transmission lines each approximately 430km long
- Grid interconnection near Ft. McMurray
- Investigate 500/240kv AC and HVDC options

Current Activities – Feasibility I Phase

Aboriginal Community Relations:

- Ongoing meetings and open houses
- Developing feasibility study agreements

Environment/Permitting:

- Detailed planning for environmental studies
- Initiate reconnaissance and scoping field work
- Develop understanding of regulatory process

Generation:

- Option development and review with communities

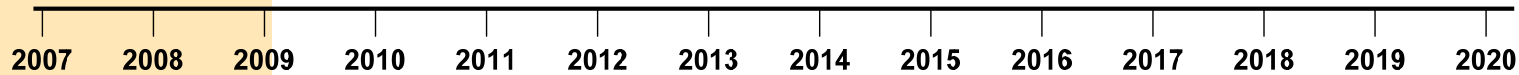
Transmission:

- Corridor review with communities
- AESO discussions and systems studies

Government Relations

- Information updates with Federal, Territorial and Provincial gov'ts

SRHD – Development Timeline



Preliminary Assessment Phase

- Screening study and concept development
- Relationship building
- Economic modeling and development plan



Feasibility Phase I

- Develop cooperation agreements with local communities
- Open field office in Fort Smith
- Initiation of Environmental Reconnaissance programs
- Transmission corridor review and constraint mapping
- LOC Application
- Assess Government and market support for the development
- Ongoing community engagement and assessment of support
- Option review and selection of preferred generation concept and transmission corridor



Feasibility Phase II

- Develop and submit Draft TOR and project description to regulators
- Obtain approved environmental scope of work and ToFR
- Execution of major environmental studies
- Execution of major engineering field investigations for both generation station and transmission



Definition Phase

- Preparation and submission of EA and other applications
- Completion of environmental field studies
- Develop and execute participation agreements with aboriginal communities and key stakeholders
- Develop and execute offtake agreements
- Select and optimize equipment and design
- Detailed engineering and procurement
- Equipment and construction contracts in place
- Completion of regulatory approval process(es)



Execution Phase

Key Risks

- SRHD is a unique long lead time, large scale, capital intensive project, with considerable risks around cost and schedule
 - Significant development investment prior to project approval
 - Need support of local communities
 - Regulatory process uncertainty
 - Power market price uncertainty
 - Water flow uncertainty, i.e. upstream usage
 - Capital cost and construction risk
 - Uncertainty with regard to the future value of green power
 - Transmission uncertainty – treatment of costs and timing of access to market

Regulatory Process Uncertainty

Need to address regulatory process uncertainty and risk

- Single set of regulatory hearings (harmonized Provincial, Territorial and Federal requirements)
- Timely process
- Clarification of lead of regulatory process

Benefits

Climate Change:

- A solution for the long-term
- Potential for hydro to provide significant contributions to emission reduction obligations by 2020

Reliable, Competitively Priced Power:

- A dependable form of sustainable, renewable energy that can be integrated into the power system

Northern Development:

- Could be significant long-term investment in infrastructure development in northern Alberta and NWT
- Could facilitate expansion of NWT power facilities

NE Alberta and NWT Economic Opportunities

Aboriginal and Local Communities

- Training and employment
- Business development
- Participation
- Develop local expertise for hydro development

Construction jobs

- Trades, truck drivers, heavy equipment operators, general labour and supervisory
- Up to 7000 person-years of labour

100+ years Operational Life

- 30 – 50 direct full time jobs + associated services
- Operators, maintenance, trades

Local Opportunities (Near term)

Equipment operators and drivers

- Involved in transportation of equipment and people as well as survey work
- Local transportation required: AWD vehicles, boats, planes, helicopters and snowmobiles

Surveyors

- Significant survey work to establish a more detailed view of the local topography

Facilitators, local consultants and guides

- skills and knowledge of the best sources of local information for consultation and the collection of local scientific, socio-economic and archaeological data.

Caterers and accommodations

Drill rig operators and geologists

- Recovery and analysis of drill core samples

Technical Assistance and General Labour

- A wide range of people will be required for environmental and geotechnical studies

Supplies

- Camping, outdoor and safety gear, equipment storage



Questions

Contact Information

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