

Chapel Rock to Pincher Creek Area Transmission Development

COMMUNITY WORKSHOP PRESENTATION

APRIL 10 & 11, 2018



Welcome & introductions

- Welcome
- Introductions- staff, special guests, facilitators



Session objectives

- Close out the previous project.
- Provide information on the new Chapel Rock to Pincher Creek Area Transmission Development.
- Gather input from stakeholders on aspects of the new project.
- Confirm understanding of community values, interests and priorities.

Agenda

- Welcome
- A word from the Alberta Electric System Operator (AESO)
- Wrapping up the previous project
- Exercise: Thoughts on moving forward
- Chapel Rock to Pincher Creek Area Project
- Discussions: Double circuit and single circuit
- Break
- Discussion: Structure placement
- Discussion: Values, interests and priorities
- Mapping exercise: Areas for special consideration
- Next steps and wrap up

Discussion guidelines


- Respect is the key - be respectful to other attendees and staff.
- Each person gets a chance to talk.
- Speak for yourself - let others speak for themselves.
- All points of view are welcome and lively discussion is encouraged.
- Respect all opinions - even if you disagree.

About the AESO

- System reliability is our highest priority
- Obligated to respond to requests to connect new generation to the grid
- Not-for-profit, statutory corporation
 - Must operate in the public interest
 - No financial interest in any generation unit, transmission or distribution infrastructure
- A source of information for you



AESO's enabling legislation



Province of Alberta

ELECTRIC UTILITIES ACT


Statutes of Alberta, 2003
Chapter E-5.1

Current as of March 31, 2017

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Province of Alberta

HYDRO AND ELECTRIC ENERGY ACT


Revised Statutes of Alberta 2000
Chapter H-16

Current as of March 31, 2017

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Province of Alberta

ELECTRIC UTILITIES ACT

TRANSMISSION REGULATION


Alberta Regulation 86/2007

With amendments up to and including Alberta Regulation 175/2014

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Province of Alberta

RENEWABLE ELECTRICITY ACT

Statutes of Alberta, 2016
Chapter R-16.5

Current as of March 31, 2017

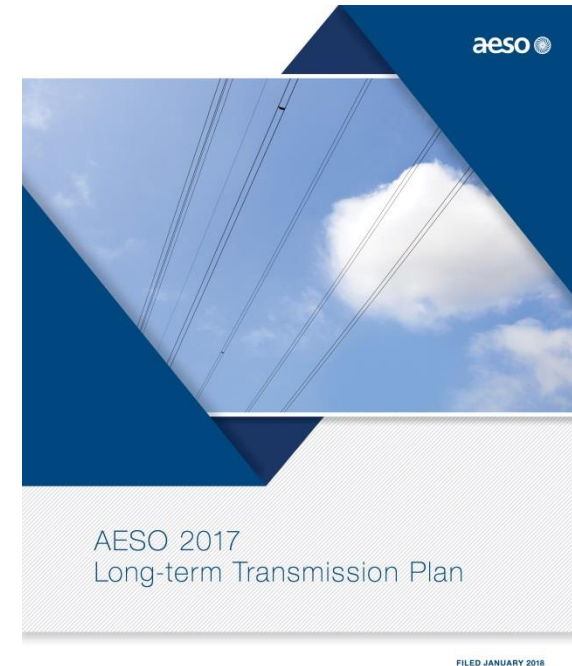
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Transmission planning – overview

- Long-term planning essential to providing a safe and reliable grid
 - Enables growth
 - Supports generation additions
 - Provides access for investors
- Long Term Transmission Plan (LTP)
 - 20-year vision for Alberta’s transmission system
 - Not a decision document; regulatory approval of projects required
 - Updated every two years
- Transmission development plans are submitted by AESO to the AUC as a Need application



- Transmission planning is an ongoing process, with continuous monitoring of needed transmission plans in response to changes such as
 - economics
 - government policies
 - electricity market participant's connection requests
- Accountable to all Albertans to ensure the right amount of transmission is built at the right time and in the right area

Alberta's electricity landscape is evolving

- Integrating more renewables
- Phase out emissions from coal-fired generation
- Introducing a capacity market



COAL

↓ 6,299 MW



COGEN

↑ 405 MW



GAS-
FIRED

↑ 6,858 MW



COAL-TO-GAS

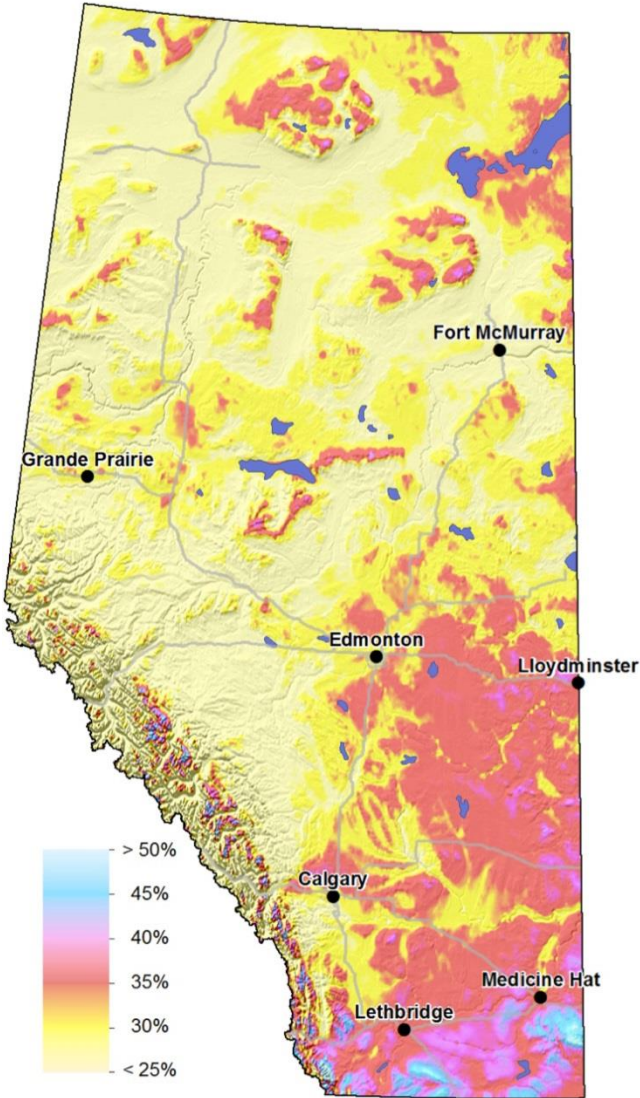
↑ 790 MW



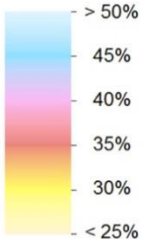
RENEWABLES

↑ 6,350 MW

Solar & wind resource potential



Source:
CanWEA,
Alberta
WindVision
Technical
Overview
Report, 2013

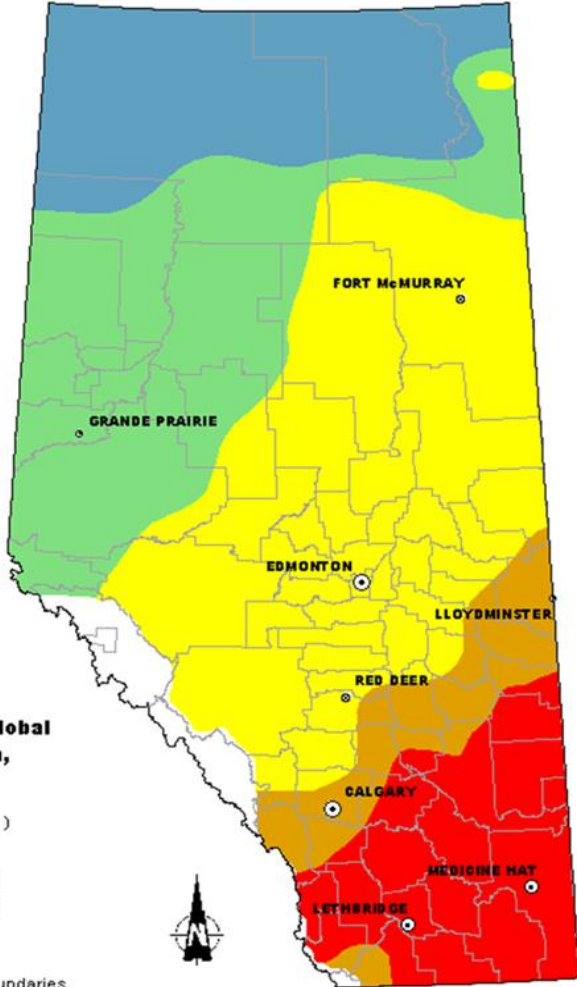
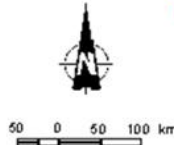


Annual total global solar radiation, 1971 to 2000

Radiation (MJ/sq.m)



Municipal Boundaries



Based on 1971 to 2000 data from Environment Canada, Alberta Environment and the U.S. National Climate Data Center. Map displayed on Township generalization.

Need for transmission development remains

- Diligent review of approved plans in the Pincher Creek area confirms the need for transmission remains to efficiently integrate renewables
- Two technically viable solutions identified
 - two 240 kV transmission circuits between a planned substation, to be called Chapel Rock and either the
 - existing Castle Rock Ridge substation
 - OR**
 - existing Goose Lake substation
- Opportunities to stage development may also be available



Restoring Alberta's Intertie with British Columbia

- To assist with reliability of electricity supply for Albertans as grid evolves
- Involves
 - additional equipment underneath the existing 1201L
 - clearance mitigation work on 1201L
 - increase transformer capacity at the Bennett substation, near Calgary
 - Chapel Rock to Pincher Creek Transmission development will also contribute



Next steps

- Detailed routing and siting information is required
- AltaLink will develop potential routes and sites for both alternatives, working with stakeholders
- In mid 2019, we plan to seek approval from the Alberta Utilities Commission



Connect with us

- Visit our website
 - www.aeso.ca/grid/projects/SATR-CRPC
 - www.aeso.ca/grid/projects/Intertie-Restoration
- Email us
 - stakeholder.relations@aeso.ca
- Call us
 - 1-888-866-2959



Castle Rock Ridge to Chapel Rock Transmission Project (CRRCR)

Project scope

- Double circuit 240 kilovolt (kV) transmission line from the Castle Rock Ridge Substation to the Alberta-BC Intertie west of Highway 22.
- A new substation located near the Alberta-BC Intertie.

AltaLink's Participant Involvement Program included:

- 3 rounds of consultation,
- 2585 project notifications,
- 430 one-on-one consultations; and
- 8 public events, 660 attendees.

What we heard during CRRCR

Routing and siting

- Follow existing corridors/infrastructure.
- Underground to address potential visual and residential impacts.

Environment

- Avoid wildlife, wildlife corridors, environmentally significant areas.
- Avoid native grasslands.

Visual impacts

- Concerns for potential impacts to the scenic viewscape throughout the project area.
- Visual impacts along Highway 3 and Highway 22.

Property values

- Concerns with potential reduced resale values.

Project need

Undergrounding

- Approximately 5 to 10 times more expensive than overhead.
- Typically underground transmission lines are paid by a third party such as a municipality or developer as opposed to borne by ratepayers.
- AltaLink believes an overhead solution is the best option for this project and does not anticipate proposing an underground solution.
- AltaLink previously committed to filing information regarding an underground solution for the Alberta Utilities Commission to consider and will do so for this project.

Undergrounding



Thoughts on moving forward

Given that we now know that the AESO has confirmed that the project is needed:

- What is your biggest fear related to this new project?
- What is your greatest hope related to this new project?

What has changed?

- The potential to stage the two 240 kV circuits based on generation milestones determined by the AESO.
 - This allows for consideration of different structure types and locations (road allowance and private property).
- The transmission lines will provide support for the restoration of the Alberta/BC Intertie.
- The Goose Lake Substation is now a possible connection point, which was previously suggested by stakeholders.

Structures

- The AESO's proposed staged approach may allow for different structure types to be considered that have not been considered previously.
 - The potential exists to locate the transmission line on private property (typically along quarter line) or within road allowance boundaries.
- AltaLink has identified three styles of structures for further consideration:
 - Monopole (new to the project area)
 - H-frames (similar to structures crossing Highway 6 north of Pincher Creek)
 - Steel lattice (similar to options proposed for the previous project)
- Structures from these categories that met the technical requirements of the project are being evaluated for consideration.

NOTE: Dimensions presented are approximate and are subject to change based on further engineering.

Structure types under consideration: Single circuit



Structure 1

Height: 27-31 metres
Width: 14 metres
Right-of-Way: 43-50 metres
Structures/km: 3-3.5
Road Allowance: No
Guy Wires required: Yes



Structure 2

Height: 24-27 metres
Width: 5 metres
Right-of-Way: 32-35 metres
Structures/km: 4-5
Road Allowance: Partially
Guy Wire required: No



Structure 3

Height: 27-30 metres
Width: 1 metre
Right-of-Way: 23-26 metres
Structures/km: 4-5
Road Allowance: Yes
Guy Wire required: No

Structure types under consideration: Twinning



Structure 1 Twinned

Height: 27-31 metres

Width: 21 metres

Right-of-Way: 69-83 metres

Structures/km: 6-7

Road Allowance: No

Guy Wires required: Yes



Structure 2 Twinned

Height: 24-27 metres

Width: 18 metres

Right-of-Way: 61-69 metres

Structures/km: 8-10

Road Allowance: Partially

One Structure

Guy Wires required: No



Structure 3 Twinned

Height: 27-30 metres

Width: 14 metres

Right-of-Way: 34-38 metres

Structures/km: 8-10

Road Allowance: Yes, one structure

Guy Wires required: No

Structure types under consideration: Double circuit



Structure 4

Height: 33-36 metres
Width: 1 metre
Right-of-Way: 23-26 metres
Structures/km: 4-5
Road Allowance: Yes
Guy Wires required: No



Structure 5

Height: 25-28 metres
Width: 24 metres
Right-of-Way: 52-56 metres
Structures/km: 4-5
Road Allowance: No
Guy Wires required: No

Structure types under consideration: Double circuit



Structure 6

Height: 42-52 metres
Width: 7-12 metres
Right-of-Way: 53-60 metres
Structures/km: 3-3.5
Road Allowance: No
Guy Wires required: No



Structure 7

Height: 33-37 metres
Width: 6 metres
Right-of-Way: 30-34 metres
Structures/km: 4-5
Road Allowance: Partially
Guy Wires required: No

What we have heard so far

Follow existing corridors	<ul style="list-style-type: none">AltaLink will assess opportunities to parallel existing linear infrastructure as part of the alignment and route development process.
Consider using railway rights-of-way	<ul style="list-style-type: none">Potential issues with railway induction.Will discuss the issues and potential mitigations with railway owner.
Coordinate with the Highway 3 twinning project	<ul style="list-style-type: none">Preliminary discussions have occurred.Alberta Transportation and AltaLink will continue dialogue throughout the project.
Underground	<ul style="list-style-type: none">AltaLink does not anticipate proposing an underground solution but will provide information on underground for consideration to the AUC.
The need for the project and filing	<ul style="list-style-type: none">AltaLink has been directed to prepare a facility application for this project and the AB/BC Intertie Restoration. These applications will be filed at the same time as the AESO intends to file the change to the need to the AUCQuestions regarding the need for the project and filing strategy should be referred to the AESO

Route selection

- The AUC requires proponents to assess the environmental, social and economic effects of routing alternatives.
- AltaLink typically breaks these three effects into the following categories:
 - Agricultural
 - Residential
 - Environmental
 - Visual
 - Electrical considerations
 - Special considerations
 - Cost
- To support the assessment of these categories, AltaLink relies on feedback from a variety of stakeholders, field surveys and additional engineering.
- This information is summarized within the facilities application that will be filed with AUC.

Anticipated project schedule

Notify and consult with stakeholders	Spring 2018 to spring 2019
File facilities application with AUC	Late spring/early summer 2019
In-service date of first circuit	2022/2023
In-service date of second circuit	2027/2029

Although we attempt to follow the anticipated project schedule it is subject to change. We will continue to provide you with updated schedule information if required as the project progresses.

Table discussion: Double circuit

- Of the four potential double circuit structures, which is your most preferred and why?
- Which is your least preferred double circuit structure and why?

Table discussion: Single circuit

- Of the three potential single circuit structures, which is your most preferred and why?
- Which is your least preferred single circuit structure and why?
- Does the potential for the twin single circuit structures change your opinion on your preferred structure type and why?

Table discussion: Structure placement

- What do you feel are the advantages of placing structures in road allowance?
- What do you feel are the disadvantages of placing structures in road allowance?
- What do you feel are the advantages of placing structures on private property?
- What do you feel are the disadvantages of placing structures on private property?
- Would you prefer placing structures in road allowance or placing structures on private property and why?

What we heard during CRRCR

Routing and siting

- Follow existing corridors/infrastructure.
- Underground to address potential visual and residential impacts.

Environment

- Avoid wildlife, wildlife corridors, environmentally significant areas.
- Avoid native grasslands.

Visual impacts

- Concerns for potential impacts to the scenic viewscape throughout the project area.
- Visual impacts along Highway 3 and Highway 22.

Property values

- Concerns with potential reduced resale values.

Project need

Values, interests & priorities

- Which of the themes from the previous project are relevant for this project and why?
- Which of the themes from the previous project are no longer relevant for this project and why?
- Are there other interests or priorities that need to be considered?

Mapping exercise

- Please list three or four key areas that require special consideration during the routing selection process and indicate the corresponding areas on the map.

What's next

- Some thoughts on moving forward.
- Next steps
 - In-person workshops- April 10 & 11.
 - Online input- April 12-30,
www.letstalkchapelrock.com
 - “What we heard” reports – May.
 - Preliminary transmission line alignment development- late Spring 2018.

Thank you

- Thank everyone for coming

