Welcome to BC Transmission Corporation’s Community Open House for the Interior to Lower Mainland Transmission Reinforcement Project.

The purpose of this open house is to:

- provide you with information about the project
- answer your questions
- hear your perspectives and points of view

Representatives from BCTC are here to answer your questions.

Before you leave, please take a few minutes to fill out our feedback form and share your comments with us.
BCTC is the Crown corporation responsible for planning, operating and maintaining the Province’s publicly owned electrical transmission system.

With a focus on building and maintaining a safe, reliable and cost-effective power grid, our responsibilities include:

- operating the transmission grid
- managing and maintaining the transmission system assets
- providing interconnection services for transmission customers
- planning new investments in the transmission system

BCTC reports to the Minister of Energy, Mines & Petroleum Resources and is regulated by the British Columbia Utilities Commission (BCUC).

More than 375 employees work for BCTC throughout the Province.
It’s time

Interior to Lower Mainland
Transmission Reinforcement
Project

The Transmission Grid

Electricity is moved throughout the Province using an interconnected grid of:

- approximately 18,200 kilometres of transmission lines
- 95,000 towers and poles
- 264 substations
- 5 control centres

The transmission grid in BC operates at voltages from 69 kilovolts (kV) to 500 kV and stretches over 75,000 hectares.

Between 70% - 80% of the Province’s electricity is consumed in the Lower Mainland and on Vancouver Island. However, almost 85% of the Province’s electricity supply is produced at remote generating facilities located in the North and the South Interior.
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Transmission Rights-of-Way

What is a right-of-way?

Transmission rights-of-way are essential to the safe, efficient and reliable delivery of power from generating stations to customers.

Transmission lines are built to the requirements of the Canadian Electrical Code, which sets standards for electrical clearances, right-of-way width and right-of-way land use.

Since electrical clearance requirements change with changing land use, BCTC continuously monitors rights-of-way to ensure public safety, as well as the operating condition of the lines.

Compatible Uses

BC’s electrical transmission rights-of-way can contribute to communities through the development of greenways, recreational corridors, agricultural and other uses approved by BCTC.

Transmission lines run through “corridors,” which is land managed according to specific property rights of its owners. These are known as “statutory rights-of-way.” BC Hydro owns the statutory rights-of-way. BCTC and BC Hydro work together to manage uses on rights-of-way.

Our goal is to work with landowners, First Nations, local governments, and other interest groups to utilize rights-of-way for the benefit of all parties.
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Maintaining Rights-of-Way

Did you know that trees contacting power lines account for up to half of all power outages in North America?

That’s why vegetation management is so essential.

BCTC is committed to managing vegetation on rights-of-way in an environmentally, socially and financially sustainable way, while keeping the transmission system safe and reliable.
Electric & Magnetic Fields

Safety is one of BCTC’s key operating considerations. We are committed to achieving the highest standards of health and safety for employees, contractors and the public.

Electricity is an essential part of our lives. We depend on it and use it every day for our livelihood and to make our lives safer, easier and more enjoyable. Power frequency (60 Hz) electric and magnetic fields (EMF) are produced by sources such as electrical appliances, household and building wiring, and electrical transmission and distribution facilities. However, some have questioned whether exposure to power frequency EMF — in particular, power frequency magnetic fields — might cause adverse health effects, principally childhood leukemia.

The issue of whether adverse human health effects are caused by magnetic fields has been the subject of hundreds of scientific studies over the last few decades. To date, despite rigorous study, no causal relationship has been established between power frequency magnetic fields and childhood leukemia or other diseases.

In response to public concerns, exposure guidelines have been endorsed by health authorities such as the World Health Organization. At BCTC, we ensure that magnetic field levels on all transmission projects fall well within these guidelines.
It’s time

The need

Expanding the capacity of the transmission system is essential to ensure continued safe and reliable electricity for BC’s growing communities.

BC’s communities are growing and changing – and so is our need for electricity.

BC Hydro’s load forecast indicates that BC’s electricity requirements will grow by between 25% and 45% over the next 20 years.

Electricity is critical to our economy and the quality of life we enjoy.

How much has your electricity consumption increased over the past few years?

Big screen TVs, clothes dryers, freezers, dishwashers, microwaves, computers, electronic games – and many more electrical appliances and electronic devices are adding to the growing demand for electricity.
It’s time

Planning for the Future

BCTC’s Ten-Year Capital Plan


The Plan outlines investments of $3.2 billion in BC’s transmission assets that are needed over the next ten years including:

- Growth – meet demand and customer requests for service: $1.9 billion

- Sustain – maintain the performance, safety and reliability of the system: $1.1 billion

- BCTC – requirements for control centres and business processes: $0.2 billion
One of the most important paths on the transmission grid is the system bringing power from where it is generated in the BC Interior to the Lower Mainland and Vancouver Island. With significant demand growth in the Lower Mainland and Vancouver Island and development of new generation in the North and the Southern Interior, the capacity on this vital path will soon be fully utilized.
BCTC is exploring alternatives to identify the best solution to reinforce the capacity of the transmission system from the Interior to the Lower Mainland by 2014.

Alternatives currently being studied include:

► A package of upgrades to existing transmission lines, substations and other facilities located between the Interior and the Lower Mainland

► A new transmission line between Nicola Substation near Merritt and Meridian Substation in Coquitlam, mostly along an existing right-of-way
What about other alternatives?

There are some potential “non-wires” solutions that could temporarily delay the need for additional transmission capacity on the Interior to Lower Mainland system:

- Potential new generation resources located near the Lower Mainland
- Higher energy conservation targets
- Additional energy imports from the United States

“Non-wires” options are generally the responsibility of BC Hydro to implement. These options are part of BC Hydro’s power supply plans currently being examined by the BC Utilities Commission.

BCTC is proceeding with studies and consultation for transmission alternatives now because of the long lead time required to develop transmission projects.
It’s time

Interior to Lower Mainland Transmission Reinforcement Project

Potential benefits

Expanding the capacity of the transmission system between the Interior and the Lower Mainland will:

- ensure a continued safe and reliable source of electricity for BC’s growing communities
- reduce costs and enhance flexibility for transmission line maintenance
- reduce the risk of disruptions and outages to the system Province-wide
The preliminary cost of the Project is estimated to be up to $400 million. The cost may vary depending on which alternative is selected.

**How is the project funded?**
The costs of new transmission facilities or upgrades to existing facilities are shared by all users of the system through their electricity bills.

The BC Utilities Commission ensures that rates charged for energy are fair, reasonable and just.

The amount the ILM Project will add to electricity customers’ bills will be influenced by a number of factors such as:

► the alternative selected
► the life expectancy of the assets

While the final costs cannot be determined in more detail until a decision on the preferred alternative is made, preliminary calculations indicate that the ILM Project could add as much as:

► 50 cents a month on the bill of a residential customer currently paying about $33 a month
► $2 a month on the bill of a residential customer currently paying about $133 a month

Increases would not take effect until the Project goes into service.
The new transmission line alternative

The proposed new transmission line would involve:

- a 240 kilometre, single-circuit transmission line on steel towers
- new circuit terminations and related equipment within the existing substation boundaries at Nicola and Meridian
- a new capacitor station near the mid-point of the transmission line

The majority of the route would be constructed on an existing right-of-way.

Approximately 30km of new right-of-way would be required — all of it on Crown land.

There are several sections along the existing route, mostly on Crown land, that would require widening of approximately 36 metres to accommodate an additional line.
It’s time

The new transmission line alternative

Technology options

Different technology options are being considered for the new transmission line alternative:

- a new 500 kV Alternating Current (AC) line, or
- a new High Voltage Direct Current (HVDC) line and two converter stations.

For an HVDC line, two large new converter stations, to convert the HVDC power back to AC power, would need to be constructed at each end of the line.

Whatever the technology option, the route would be the same.

The new transmission line and stations would be operated and maintained by BCTC and owned by BC Hydro.
Can transmission lines be underground?

Putting transmission lines underground presents a number of challenges:

► In urban areas there is often other existing infrastructure such as water mains, sewers, gas lines, etc. that limit our ability to put lines underground.

► Rugged terrain along coastlines and over mountains can make undergrounding lines impossible.

► For higher voltages such as 500 kV, there are technical limitations on the length of line that can be put underground.

► The cost to underground transmission lines can be 8 to 10 times more expensive than overhead lines. This additional cost is unlikely to be supported by ratepayers or the BC Utilities Commission.
The new transmission line alternative will undergo a rigorous review by the Canadian Environmental Assessment Agency (CEAA) and the British Columbia Environmental Assessment Office (BCEAO).

The review process will be harmonized with Federal and Provincial agencies co-operating to consider the potential effects of the new line including such things as:

- aquatic species and habitat
- terrestrial ecosystems, vegetation and wildlife
- land use and socio-economic/socio-community conditions
- forestry
- visual landscape and recreational resources
- First Nations traditional use
- heritage and archaeological resources
- public health and safety
It’s time

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Upgrades to four existing transmission circuits, substations and other facilities would allow more electricity to travel to the Lower Mainland.

All upgrade work would be take place within existing rights-of-way and boundaries of existing substation properties.

Upgrades could include:

► Replacing and upgrading some equipment at several substations
► Replacing some existing overhead lines
► Selectively raising some existing towers (3 to 8 metres)
► Selectively adding some new towers
► Recontouring land under the lines in some locations (reducing by half a metre to a metre)
It’s time

**Interior to Lower Mainland Transmission Reinforcement Project**

Deciding on a preferred alternative

Over the next few months BCTC will be completing additional studies and gathering input from First Nations and the public before a decision on a preferred alternative is made in May 2007.

In determining a preferred transmission solution, BCTC will consider the following factors:

- Capacity
- Reliability
- Cost
- Losses
- First Nations input
- Public input
- Social and environmental effects
- Transmission customer benefits
- The outcome of the BC Utilities Commission review of BC Hydro’s 2006 power supply plans

**Capacity:**
the amount of electricity that can transfer from one point to another at any given time

**Losses:**
the amount of power lost as the electricity flows through the wires; the higher the losses, the more generation must run to compensate

**Reliability:**
ensuring that electricity is delivered when customers need it
**It's time**

**Interior to Lower Mainland Transmission Reinforcement Project**

### Preliminary project schedule

<table>
<thead>
<tr>
<th>Event</th>
<th>Date</th>
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<tbody>
<tr>
<td>Commence First Nations engagement and public consultation</td>
<td>Summer 2006</td>
</tr>
<tr>
<td>Initiate environmental assessment process for new transmission line alternative</td>
<td>December 2006</td>
</tr>
<tr>
<td>Commence environmental assessment field studies for new transmission line alternative</td>
<td>March 2007</td>
</tr>
<tr>
<td><strong>BCTC decision on a preferred alternative</strong></td>
<td>May 2007</td>
</tr>
<tr>
<td>Commence government consultation, First Nations engagement and public consultation on a preferred alternative</td>
<td>June 2007</td>
</tr>
<tr>
<td><strong>If preferred alternative is upgrades to existing transmission lines and station facilities:</strong></td>
<td></td>
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<tr>
<td>File Project application with BC Utilities Commission (BCUC)</td>
<td>Fall 2007</td>
</tr>
<tr>
<td>Target BCUC Approval</td>
<td>Fall 2008</td>
</tr>
<tr>
<td>Construction Period</td>
<td>Fall 2008 - 2014</td>
</tr>
<tr>
<td>Target In-Service Date</td>
<td>Fall 2014</td>
</tr>
<tr>
<td><strong>If preferred alternative is a new transmission line:</strong></td>
<td></td>
</tr>
<tr>
<td>File Project application with BCUC</td>
<td>Fall 2007</td>
</tr>
<tr>
<td>Target BCUC Approval</td>
<td>Fall 2008</td>
</tr>
<tr>
<td>File Application with BC Environmental Assessment Office and Canadian Environmental Assessment Agency</td>
<td>Fall 2008</td>
</tr>
<tr>
<td>Target Environmental Approvals</td>
<td>Fall 2009</td>
</tr>
<tr>
<td>Construction Period</td>
<td>Fall 2009 - 2014</td>
</tr>
<tr>
<td><strong>Target In-Service Date</strong></td>
<td>Fall 2014</td>
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The Project will require approval from the BC Utilities Commission (BCUC).

The BCUC is an independent regulatory agency of the Provincial government. It is responsible for:

- the regulation of energy utilities under its jurisdiction
- ensuring that the rates charged for energy are fair, just and reasonable
- ensuring that utilities provide safe, adequate and secure service to their customers

In determining if the Project is in the best interest of the public, the BCUC will examine:

- the alternatives examined
- the need and justification for the preferred alternative
- capital and operating costs
- a broad range of socio-economic and non-financial factors

The public is encouraged to participate in the Project review process.
It’s time

Interior to Lower Mainland Transmission Reinforcement Project

Public information and consultation

BCTC is committed to developing mutually beneficial relationships with First Nations, stakeholders and the communities in which we operate.

The goal of our public consultation activities is to provide information and obtain input on projects and plans for maintaining and improving the transmission system.

For the Interior to Lower Mainland Project we are:

► discussing the Project at our regional planning meetings and at our annual Provincial Planning Forum

► consulting with local governments along the proposed new transmission line route and in areas where upgrades to existing circuits have been proposed

► actively engaging in discussions with First Nations

► consulting through public open houses and small meetings with interest groups

► providing regular project updates to inform interested parties about ongoing developments

► providing additional opportunities for feedback through the project website (www.bctc.com), or by contacting BCTC Community Relations by mail, fax or phone

Input received will assist BCTC in deciding on a recommended alternative.
It’s time
Interior to Lower Mainland Transmission Reinforcement Project

Have your say... Feel free to share your comments with everyone.

British Columbia Transmission Corporation
It’s time

Interior to Lower Mainland Transmission Reinforcement Project

Thank you for coming

The information gathered this evening will be taken into consideration as the project unfolds.

Based on the input received and the results of its studies, BCTC will decide on a preferred alternative in May 2007.

A summary of open house sessions will be available on our project website in March 2007 (www.bctc.com).

If you haven’t done so already, please take a moment to fill out a comment form and drop it in the box provided. Be sure to include your contact information if you would like us to send you updates on the Project.

You can also provide feedback via the Project website at www.bctc.com or by contacting our Community Relations Department:

Phone: 604.699.7300
Toll-Free: 1.866.647.3334
Fax: 604.699.7540
e-mail: community.relations@bctc.com
Mail: Suite 1100, Four Bentall Centre
1055 Dunsmuir Street, PO Box 49260
Vancouver, BC V7X 1V5

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