Potential Transmission Reinforcement in southern Alberta

For more information please contact the AESO at 1-888-866-2959
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Who is the AESO?

Alberta's transmission system, sometimes referred to as the Alberta Interconnected Electric System (AIES), is planned and operated by the Alberta Electric System Operator (AESO). The transmission system is comprised of the high-voltage lines, towers and equipment (generally 69 kV and above) that transmit electricity from generators to lower voltage systems that distribute it to cities, towns, rural areas and large industrial customers. Our job is to maintain safe, reliable and economic operation of the provincial transmission grid.

Why is transmission system reinforcement needed for southern Alberta?

Interest in wind development in southern Alberta is increasing. We are now planning the transmission system to interconnect new wind farms; however, since the existing transmission system in the south is at capacity (i.e., the system cannot carry additional electricity); system reinforcement is needed to move new wind generated power to areas that need it.

What's happening right now?

The AESO has received applications for wind power development of over 11,500 megawatts (MW) in Alberta, with more than 7,500 MW distributed across southern Alberta. Currently, 497 MW of wind generation is installed on the Alberta grid. The AESO anticipates that up to 2,700 MW of additional wind generation may develop in southern Alberta over the next 10 years.

In response to the need for additional transmission capacity, the AESO developed possible transmission reinforcement solutions to integrate the additional wind generation anticipated for southern Alberta. These transmission system alternatives were developed to not only interconnect new generation but also to provide additional, reliable, bulk system capacity from generation sites to areas where power is needed. These potential solutions included two 240,000 volt (240 kV) alternating current (AC) alternatives; one 500 kV AC alternative; and one high-voltage direct current (HVDC) alternative.

A preferred option identified

The AESO conducted technical, economic and land impact studies on these alternatives to determine a preferred option to address the transmission challenges in southern Alberta. The AESO also gathered feedback from a broad range of stakeholders, including local landowners, as part of its investigation. ***The AESO concluded that a 240 kV Loop system is the best way to integrate new wind generation anticipated for southern Alberta.*** Our studies have identified areas where transmission lines and other related facilities could be added to improve the system. A map on the next page shows the wind interest in southern Alberta and the AESO's preferred option for integrating it into the grid.

When did the AESO file its application for this reinforcement?

We submitted our application, known as a Needs Identification Document, to the Alberta Utilities Commission (AUC) on December 30, 2008. We will also submit individual applications to connect wind projects that successfully meet AESO interconnection milestones.

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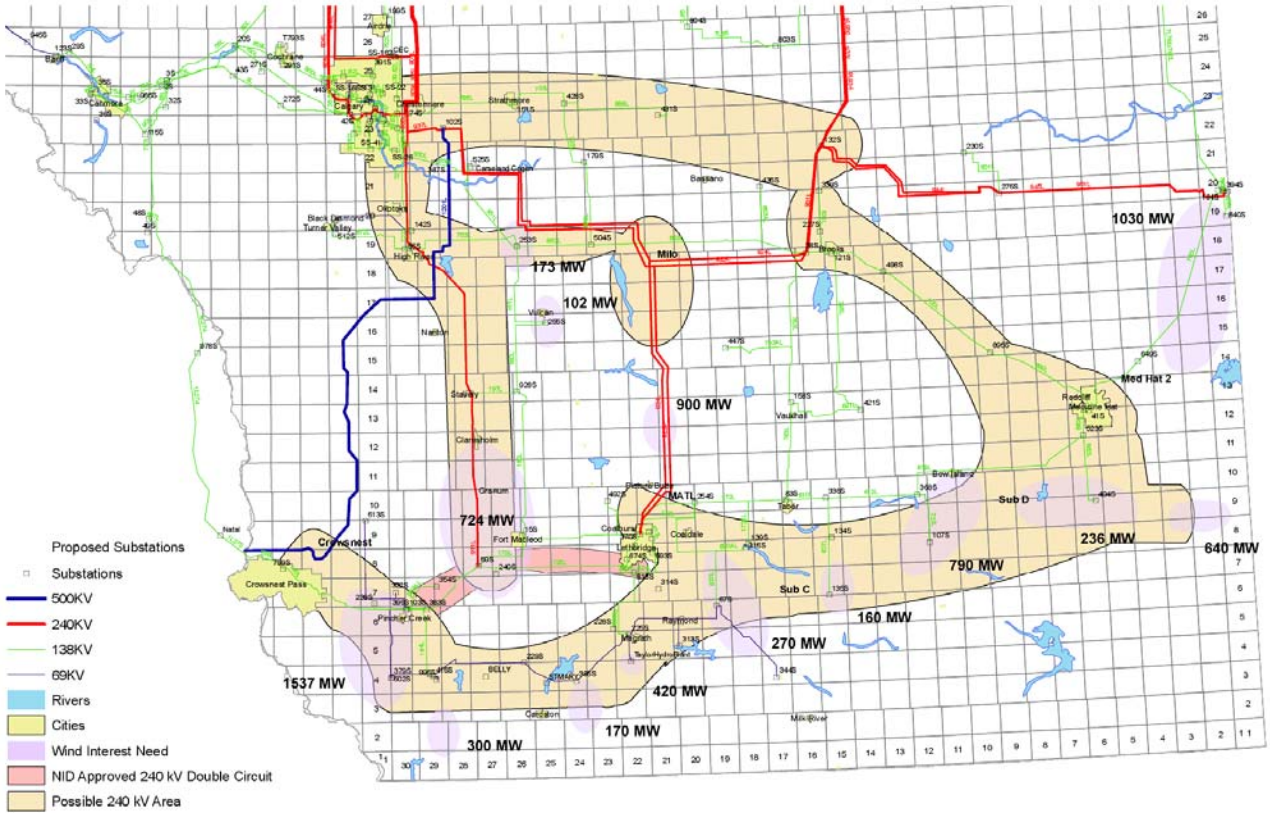
A staged approach to developing transmission to integrate wind

This transmission development will be staged to integrate increasing levels of wind generation development, with the first stage proceeding as quickly as possible. The first stage is designed to connect over 1,200 MW of additional wind generation in southern Alberta. Facilities applications to build transmission described in this application are underway. Additional stages of transmission development would be implemented as additional generation develops.



The map above shows areas where wind power developments have been proposed; these areas are otherwise known as planning zones. The map also shows the AESO's preferred option for addressing the need to integrate these wind developments.

Current situation

We have directed Transmission Facility Owner AltaLink to begin developing facility applications for transmission development described in our need application; this direction includes the search for line routes in or near the areas identified above. Before AltaLink can begin constructing these facilities, however, it must develop and submit Facility Applications to the AUC for approval. Further consultation with stakeholders, particularly on routing of transmission lines, will form a critical component of this application process.

The AUC is reviewing our need application, and has chosen a hearing date of June 22, 2009. For more information on the AUC's review process, please visit their web site at http://www.auc.ab.ca (under "Items of interest" see "Southern Alberta Transmission Reinforcement"); email filings@auc.ab.ca or call (780) 427-4903 (for toll free access in Alberta first dial 310-0000).