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The Juan de Fuca Cable Project Overview

Background

Improving our transmission system and embracing smart grid technology are critical elements in defining our energy future. The Juan de Fuca Cable Project that will connect Port Angeles on the Olympic Peninsula with the Greater Victoria area on Vancouver Island, British Columbia, Canada represents the very best in both innovation and technology. It is also one of the few major new transmission lines that has received all necessary major permits and is ready to move forward.

Benefits

Reliability Enhancing/Economy Stimulating

- Port Angeles and Victoria are each at the ends of radial transmission lines which makes them more prone to electrical outages. By interconnecting the two systems the JDF Cable not only will increase local reliability but will add to the transmission capacity in both areas as well.
- This new connection effectively becomes a new Blaine Intertie between the Pacific Northwest and British Columbia, allowing energy exchange and both directions and stimulating economic development on both sides of the border.

Environmentally Friendly/Socially Acceptable

- The combination of HVDC Light® technology and horizontal directional drilling capability provides the most ecologically benign and socially acceptable mechanism for transmitting bulk electrical power. The cable emits no varying EMF, and is out of sight - fully underground and underwater for its entire length.

Economically Viable

- The aggregate cost of providing comparable benefits through use of AC overhead lines and technology would be many multiples of the projected cost of this HVDC Light® (high voltage direct current) fully controllable IGBT-based system when all construction and regulatory permitting costs are included.

Renewable Energy Source firming/reinforcing

- The energy output from many renewable energy resources, such as wind, tends to peak at different times in geographically disparate areas. By providing more and better interconnections between such areas, the U.S. and Canada can mutually reinforce each other, allowing a higher penetration of renewable energy for both than either could achieve independently.

Shovel Ready/Easy to Implement

- The Project is fully permitted on both sides of the border (including regulatory and environmental requirements)
- This project will be constructed and in operation in between twenty and twenty four months from the point when the contracts and financing have been secured.

Additional benefits include: Autonomous voltage and frequency support capabilities, providing automatic stabilization of the existing AC network without human operator intervention; and Black Start capability, which can be used to restart the AC grid should natural or terrorist-induced disasters cause catastrophic power outages. The project also has the potential for relieving known areas of congestion.

Project Description and Status

The Juan de Fuca Cable is a 30 mile, 550 megawatt HVDC Light® submarine, electric transmission line. HVDC Light® is state-of-the-art transmission technology recognized internationally for its reliability, fast and accurate power control and low environmental impact. The total capital cost of the Project including reinforcements to the existing network, is estimated at \$450 million. The project has been under development since 2003 and is fully permitted. The Project is now in the last phase of project development and the team is holding bi-lateral negotiations for system benefits and the reservation of transmission capacity on the line.