



PSERC WEBINAR

Design and Valuation of High-Capacity HVDC Transmission to Connect Eastern and Western US Electric Grids

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This webinar will report on a recently completed multi-organization project to quantify benefits of increasing transmission capacity between the US Eastern and Western Interconnections under a high-renewables future. Given the existing “seam” between the two interconnections, a co-optimized infrastructure planning model was developed to assess tradeoffs between investments in cross-seam HVDC transmission, AC & DC transmission needs within each interconnection, generation investment costs, and operational costs, while satisfying different policy compliance constraints. This work was performed using industry-vetted expansion planning and production cost models of the North American power grid. Results from the analysis indicate that, under high wind/solar growth scenarios, the cost of cross-seam transmission is outweighed by the generation-related savings it produces. The presence of other benefits related to grid reliability, resilience, and adaptability, suggest that cross-seam transmission would be a highly attractive infrastructure development. We conclude this talk identifying ways to move forward on developing high capacity cross-seam HVDC transmission.

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James McCalley received the B.S., M.S., and Ph.D. degrees from Georgia Tech in 1982, 1986, and 1992, respectively. He was employed with the Atlanta Gas Light-Company from 1977-1982 and with Pacific Gas and Electric Company, San Francisco, from 1985 to 1990 as a transmission planning engineer. He is an Anson Marston Distinguished Professor and the London Professor of Power Systems Engineering in the Department of Electrical and Computer Engineering at Iowa State University where he has been employed since 1992. He was elected as an IEEE Fellow in 2003 and was a registered professional engineer in California.

