

# Transmission Superhighways

Brattle study highlights the benefits of extra high voltage overlays in the Midwest

## OVERVIEW

In spring 2009, The Brattle Group released a study evaluating and quantifying the environmental benefits associated with EHV transmission overlays such as ITC Holdings Corp.'s recently announced Green Power Express. The findings underscore the need for extra high voltage transmission to access higher capacity renewable energy sources to reduce carbon emissions. In the study, Brattle analyzed the impact of different types of transmission development – incremental versus large scale, extra high voltage lines – and compared the potential benefits of each type of development.

## KEY FINDINGS

- Extra high voltage transmission lines will grant consumers access to higher quality renewable resources such as higher capacity factor wind found in the Great Plains.
- Increased access to higher capacity factor wind resources means that wind can be economically competitive relative to conventional fossil fuels when a modest price on carbon emissions is assumed.
- Increased access to wind resources helps the regional power system to achieve significant fuel and CO2 emissions savings.
- EHV transmission is an essential factor to align electricity generation with our national interest in minimizing climate change potential by reducing GHG emissions.

## ADDITIONAL BENEFITS

- **More wind capacity:** Over 23,000 MW more of installed wind capacity can be built between 2010 and 2030 due to the presence of multiple EHV overlays.
- **Reduced emissions:** If 23,000 MW of additional wind is interconnected via EHV overlays, more than 6,600 million MMBtus of fuel and 370 million metric tons of CO2 emissions can be saved between 2010 and 2030.
- **Greater diversity in fuel mix:** Allowing the interconnection of greater wind resources allows for greater diversification of the existing fuel mix.
- **Supply consistency:** EHV overlays would allow for access to geographically diverse renewable resources which in turn decreases the simultaneous rise and fall of wind power output across the regional grid.
- **System benefits:** EHV additions provide other system benefits, such as greater reliability and market liquidity.

Low and High Transmission Scenario Renewable Generation vs. RPS Requirement, 2010-2030 (GWh)

