



NEWS

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ATC transmission improvements double as major energy efficiency upgrades

Impact of energy savings on grid equivalent to combustion turbine; carbon emissions reduced

WAUKESHA, Wis. – American Transmission Co.'s \$1.7 billion investment in reliability and efficiency upgrades to the transmission grid over the past seven years also has contributed to energy savings and reduced carbon emissions. In figures released today, ATC demonstrates that its more robust high-voltage transmission system has helped reduce electrical output at peak times equivalent to a 125-megawatt generating plant.

"Our investment may be one of the largest energy savings programs in the Upper Midwest," said José Delgado, ATC president and chief executive officer. "The more efficient high-voltage lines and newer infrastructure that we've placed in service results in lower line losses. We can translate this into significant environmental benefits. With the recent approval of the final report by Wisconsin Governor Jim Doyle's Task Force on Global Warming, this is good news."

Flora Flygt, director of ATC Transmission Planning, explained, "Transmission system improvements also function as major energy efficiency upgrades on the electric system because of the sheer volume of energy they carry. Even a small increase in the efficiency of the grid's power-carrying capabilities can yield significant energy-saving and carbon-reducing results."

She said the savings are due to reduced electricity losses. "In simple terms, our improvements mean that the wires do not get as hot, which results in substantially lower electricity losses in the process of moving power into communities," said Flygt.

Lower losses between the generation source and the delivery point mean a reduction in the required electricity output needed to transport power and meet demand. If the generation source is a fossil-fueled power plant, the result is lower carbon emissions. Losses on ATC's high-voltage network are relatively low at around 2.2 percent of energy carried.

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ATC's energy savings calculation compares the company's system as it was in summer 2001 with the improved system in place by summer 2007. The reduced losses over the 40-year life of these projects equate to:

- **16.2 million megawatt hours of electricity** saved (enough to power 38,000 homes each year).
- **15 million tons of CO₂ emissions** associated with producing lost energy are eliminated¹.
- **The equivalent of a 125-megawatt generating plant** not having to be built to serve peak demand.

The figures above do not include the savings from the 220-mile Arrowhead-Weston 345-kilovolt transmission line, which ATC placed in service in January 2008. The reduction of losses associated with the Arrowhead-Weston transmission line is estimated at roughly 24 megawatts of on-peak usage.

ATC's program of rebuilding and up-rating existing transmission lines and constructing new ones results in power being carried more efficiently than it would be over the older, lower-voltage grid in three ways:

- **Rebuilding existing power lines** using a larger conductor enhances efficiency. The larger conductor reduces the resistance of the lines, which reduces losses.
- **Adding new transmission lines** to an overloaded system divides power flows over multiple paths, which reduces electric current and losses on each individual power line.
- **Installing higher voltage lines** allows demand to be met with lower levels of current and lower line resistance, which also reduces losses.

On the transmission system, extra-high voltage lines typically provide the greatest potential for energy loss reduction. ATC expects to add four additional 345-kilovolt transmission lines in the next five years, which will reduce losses even further:

- **Gardner Park – Central Wisconsin** is a 50-mile project in Central Wisconsin scheduled to be energized in spring 2009.
- **Morgan - Werner West** is a 50-mile project in Central Wisconsin scheduled to be energized in spring 2009.
- **Paddock - Rockdale** is a 35-mile project in Southern Wisconsin expected to be on line in April 2010.
- **Rockdale - West Middleton** is a 35-55 mile proposed project in South Central Wisconsin slated to be in service in spring 2013.

ATC owns, operates, builds and maintains the high-voltage electric transmission system serving portions of Wisconsin, Michigan, Minnesota and Illinois. Formed in 2001 as the nation's first multi-state transmission-only utility, ATC has invested \$1.7 billion to improve the adequacy and reliability of its infrastructure. ATC now is a \$2.2 billion company with 9,350 miles of transmission lines and 500 substations. The company is a member of the Midwest ISO regional transmission organization, and provides nondiscriminatory service to all customers, supporting effective competition in energy markets without favoring any market participant. For more information, visit our Web site at www.atcllc.com.

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¹ A value of 1,850 lbs of CO₂ per MWh (0.925 tons/MWh) was used to calculate the reduction in CO₂ emissions. This value comes from the Electric Generation Work Group of the Governor's Task Force on Global Warming.