



Transmission to distribution interconnections

We have received numerous requests from distribution companies for new transmission to distribution interconnections. These interconnection requests generally are categorized into one of three different types of projects:

1. *Constructing new T-D substations.* Typically, these new interconnections involve constructing a new T-D substation adjacent to an existing transmission line and looping the transmission line into the new substation. In some instances, the new substation cannot be sited adjacent to the transmission line and we are required to construct a transmission line to the new substation site. Since this type of interconnection is a way for a distribution company to redistribute load between the two existing substations, it typically does not materially affect transmission system performance. In some instances, however, the optimum site for the new substation, from a distribution planning perspective, is such that a new transmission line from two substations that were not previously interconnected is warranted, forming a new network line, which can materially affect transmission system performance.
2. *Adding T-D transformers at existing substations.* These new interconnections involve expanding an existing T-D substation to accommodate a new T-D transformer. Typically, this type of interconnection is a way for a distribution company to improve reliability by providing redundancy, lowering the loading on existing T-D transformers and meeting increasing customer demand.
3. *Replacing existing T-D transformers at existing substations.* These are not technically new interconnections since no expansion is required at the existing T-D substation; it's merely a means of increasing transformer capacity. This type of project is a way to reliably serve increasing customer demand.

In some instances, the reason for a new T-D interconnection request is driven by a large new customer load, such as a new industry with a large demand for electricity. In these instances, there may be a need for other transmission system reinforcements to reliably serve the new load.

Several economic development projects in ATC's territory have prompted new D-T interconnections:

- a new manufacturing facility in the Michigan Upper Peninsula Keweenaw area,
- a new mine development north of Marquette (under construction),
- a gas separation facility in the Janesville area (recently completed),
- a large natural gas pumping facility to support a pipeline extension to the Fox Valley (ATC facilities are complete),
- several ethanol plants in various stages of development, and
- several oil pumping substation expansions for oil pipeline load increases.

T-D interconnection requests that have been jointly evaluated to the point of Best Value Planning agreement between ATC and the LDC are shown in [Figures PR-11 through PR-15](#) for Zones 1-5, respectively.



10-Year Assessment

An annual report summarizing proposed additions and expansions to the transmission system to ensure electric system reliability.

2009

October 2009 10-Year Assessment
www.atc10yearplan.com

A corresponding list of these interconnection requests is available on ATC's Web site: www.atcllc.com. For the most part, those shown are on the Planning and Project Management worksheets of the D-T queue.