Green Power Express

• 3,000 miles 765 kV
• 10-12 GW transfer capacity to support over 20 GW of new wind generation
• Crosses 7 states, 20 utility service territories, 2 RTOs and non RTO areas
• Expected cost of $10-12 billion
Agenda

- Who is ITC?
- Why Green Power Express and Why Now?
  - Identified Benefits
  - 765 kV and 345 kV
  - AC and DC
- Impediments and Solutions
  - Regional Transmission Impediments
  - Energy Policy Needs
- GPE Activities
Who is ITC?
Who Is ITC?

- Only fully independent transmission company in the U.S.
- Sixth largest transmission-owning company in the U.S.
- Operate almost 15,000 miles of transmission serving peak load of over 25,000 MW.
- Established in March 2003 when DTE Energy sold transmission subsidiary ITC Transmission.
- Acquired all transmission assets of Interstate Power & Light Company (IP&L) in December 2007 forming ITC Midwest.
- ITC currently is seeking opportunities to build, own, operate, and maintain transmission assets in Kansas, Oklahoma and Texas.
ITC is the first and largest fully independent transmission company in the U.S.

Independence is defined as:

- De minimis ownership or truly passive ownership by market participants
- Minimal operating dependence, ongoing market participant relationship/affiliation

The company, its employees and their immediate family members do not hold any market participant investments

Through ITC’s independence, we have been able to focus on our goals (reliability, efficiency, equal access, lower cost).

In essence, the independent model aligns the interests of the company with those of the customer which are in turn in line with those of shareholders.

- A non-independent model cannot do this; they are faced with conflicting interests.
Alignment of Interests

Business model aligns interests of company, employees and shareholders with those of customers, end-use consumers and regulators.
Why GPE and Why Now?
“One of... the most important infrastructure projects that we need is a whole new electricity grid. ... if we’re going to be serious about renewable energy, I want to be able to get wind power from North Dakota to population centers, like Chicago.”

Timing of Filing - Why GPE Now?

◆ Over a year of internal study prior to filing
  — Submitted to MTEP in compliance with Order 890
  — Discussions with developers and stakeholders ongoing
◆ Initiated by federal policy discussions
  — Private capital is available for major transmission investment
◆ Financial disclosure and competitive considerations
◆ Regional planning initiatives (UMTDI, RGOS, JCSP, CARP/RECB)
  — ITC supports these efforts
  — Timing concerns
  — Studies do not build transmission
◆ Development of project evaluation and cost allocation criteria
  — Current methodologies not conducive to broad regional projects to move renewable sources
  — GPE can spur development of alternate metrics to refine the evaluation and cost allocation proposals for large-scale transmission overlays
◆ Global economy
  — Placing orders during global economic contraction can result in accelerating delivery and reducing costs
U.S. Wind Map

United States Annual Average Wind Power

Classes of Wind Power Density

<table>
<thead>
<tr>
<th>Wind Power Class</th>
<th>10 m (33 ft)</th>
<th>50 m (164 ft)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wind Power (W/m²)</td>
<td>Speed (m/s)</td>
<td>Speed (mph)</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>2</td>
<td>1.1 - 1.5</td>
<td>4 - 5.5</td>
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<tr>
<td>3</td>
<td>1.6 - 2.3</td>
<td>5.6 - 8.5</td>
</tr>
<tr>
<td>4</td>
<td>2.4 - 3.0</td>
<td>8 - 10.9</td>
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<tr>
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<tr>
<td>11</td>
<td>11.5 - 14.3</td>
<td>31.7 - 35.6</td>
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</tbody>
</table>

ALASKA

Principal Hawaiian Islands

Puerto Rico
GPE Moves the Wind to the Load
Facilitates the movement of large amounts of high efficiency wind throughout the footprint

Reduces carbon emissions by approximately 37 million metric tons annually, equivalent to seven to ten 600 MW coal plants or nine to twelve million automobiles

Largely resolves Midwest ISO generation interconnection queue issues for region

Promotes efficient use of land

Addresses concerns with system congestion as wind comes online

Increases electric reliability

The Green Power Express would effectively be the energy superhighway for wind.
Benefits: Reduced Carbon Emissions

Annual CO₂ Savings (Emissions) by Fuel, 2010-2030
(High Transmission Scenario Over Low Transmission Scenario)

[Graph showing annual CO₂ savings (in millions of metric tons) for Oil, Coal_Seq, Natural_Gas, Coal, and Total from 2010 to 2030.]

Source: The Brattle Group
Why 765kV instead of 345kV?

- 765 kV provides greatest capacity increases with least land consumption
  - One 765 kV facility can carry as much power as six 345 kV lines
  - Reduced right-of-way lowers cost as well as impacts to consumers and environment

- Supports competitive markets, reliability, and renewable energy development

- Power carried greater distances and facilitates renewable resources market

- Availability is greater than 99% of the time

- “On-ramps” and “off-ramps” provide for easy generation connections and future transmission integration
Why Not DC for GPE?

- DC is a good technology for certain applications, namely point to point without off ramps
  - GPE has a number of pick-up and drop-off points for power along the path
- DC does not allow for easy redirection of power in the case of a line outage
  - Could make system vulnerable from a reliability standpoint if used as a first step
  - May require a significant system below
- DC overlays may be required in the Eastern Interconnect once a robust backbone system exists to accommodate renewable development
Impediments and Solutions
Regional Transmission Impediments

- Lack of collective industry vision / stated energy policy; energy policy inertia
- Influence of market participants
- Fallacy of generation vs. transmission debate
- Sandbox mentality
- Siting challenges
- Lack of regional cost recovery mechanism for regional projects
- Voluntary nature of RTO membership
ITC’s Top Public Policy Priorities:

- **Independent regional planning:** Interconnection-wide regional planning using existing infrastructure

- **Cost allocation:** Method that harmonizes costs of regional transmission with benefits

- **Federal siting authority:** Allows states to continue to site transmission but after one year, FERC would have backstop authority
GPE Activities
Green Power Express Activities

- On April 10th, ITC received FERC approval of several portions of its Section 205 application
  - Base ROE, incentive ROE adders, capital structure, and several non-ROE incentives (Regulatory Asset, CWIP, Abandoned Plant) were approved
  - Formula Rate and corresponding protocols were set for hearing before a settlement judge
- Future activities include the following:
  - Negotiations with potential partners and gathering of input from incumbent utilities and stakeholders
  - Participation in MISO regional planning studies
  - Implementation of a multi-regional cost allocation mechanism
  - Routing studies, EIS, and preliminary engineering
  - Application for transmission line siting in accordance with existing state protocols
  - Detailed design of the first phase of the project, including right-of-way acquisition and ordering of long-lead items
  - Construction
    - Phase 1 can be placed in service in as little as 2 to 3 years from when construction begins
The Green Power Express (GPE) is a project conceived by ITC to reach the wind-rich areas of the upper Midwest with extra-high voltage transmission. The GPE aligns with the development of renewable resources and supports a national energy vision for the development of renewable resources. GPE integrates with other Regional planning processes and visions: MISO Planning processes (e.g., MTEP), National green energy vision, Joint Coordinated System Plan (JCSP) transmission overlay for a 20% Renewable Energy Standard, Upper Midwest Transmission Development Initiative in the states of ND, SD, MN, WI, IA. ITC intends to add local partners on the GPE to bring the project to fruition. ITC is uniquely positioned, independent, and qualified to see this project built, without government money.
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