How A For Profit ITC Can Provide Value to Customers


Thomas J. Gentile
Director Transmission Customer Services
National Grid USA
An RTO Proposal with an ITC

FERC

RTO

ISO
Split Functions
Non-profit

ITC
Split Functions
For-profit

Advisory Group +/- or NEPOOL
Responsibility Split Between The ITC and ISO
A Clear Functional Split, Based On Essential Requirements

<table>
<thead>
<tr>
<th>ISO</th>
<th>ITC</th>
</tr>
</thead>
</table>
| Power Markets  
- Tariff  
- Operations  
Short-Term Reliability  
Ancillary Services  
Regional Planning* | Transmission Markets  
- Tariff  
- Operations  
Regional Planning*  
Expansion |

Information is shared as necessary to perform functions
Independent, Complementary and Interrelated Organizations

*Shared several step process
RTO Structure

• The right structure with the right incentives is the key to delivering value

• A non-profit ISO in collaboration with a for-profit Independent Transmission Company (ITC).
  - Build upon work of past several years
  - Create strong financial incentives tied to producing customer value
  - Independence provides assurance to market participants
Why the RTO can unlock the value of transmission

The Investor-Owned ITC can:

• Enhance Wholesale Market Competition through
  ➢ Increasing system availability
  ➢ Improving system efficiency
• Reduce costs to customers
• Operate under incentive rates
• Facilitate new interconnections
Increasing Transmission System Availability

This can be achieved through:

• Optimization of maintenance practices
• Improve transmission / generation outage coordination
• Shorten transmission outages
Improving Transmission System Efficiency

Increasing system capability can be done by:

• Optimizing line ratings
• Investing capital to strengthen system “weak links”
• Researching, developing and introducing new technologies
Congestion Experience
- Costs in New England

Preliminary mitigated figures – subject to adjustment.

Source: ISO-NE web site
Congestion Lesson?

Today, in New England, for example

- Weak financial incentive to reduce congestion
- Congestion costs a “pass-through” to customers
- Responsibility and accountability for managing congestion unclear

Exactly the same was true in the UK prior to adoption of incentive arrangements
Relevant Lessons?

In England and Wales, the transmission company, i.e., National Grid ....

- Was given targets for congestion and ancillary services costs
- Received profits from beating targets and bore losses when target values were exceeded
- Adopted framework for benefit sharing with customers
Congestion (and ancillary services) costs in UK

Commercial incentive scheme first introduced
UK increase in system capability

- Scotland: 1991: 0.7 GW, 1999: 1.2 GW
- North-Midlands: 1991: 4.2 GW, 1999: 10.1 GW
- Midlands-South: 1991: 9.1 GW, 1999: 11.5 GW
- South-Estuary: 1991: 8 GW, 1999: 8.8 GW
- South-SW: 1991: 3.9 GW, 1999: 2.7 GW
Technology advances
- Line Rating Improvements

<table>
<thead>
<tr>
<th>Year</th>
<th>Conductor Type</th>
<th>Temperature</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1974</td>
<td>2xZebra ACSR</td>
<td>50°C</td>
<td>Highest L2 rating on vesting</td>
</tr>
<tr>
<td>1985</td>
<td>2xRubus AAAC</td>
<td>75°C</td>
<td>Resistivity &amp; calculation method</td>
</tr>
<tr>
<td>1992</td>
<td>2xRubus AAAC</td>
<td>75°C</td>
<td>Probabilistic tower loadings</td>
</tr>
<tr>
<td>1992</td>
<td>2xSorbus AAAC</td>
<td>75°C</td>
<td>Re-assessment of temperatures</td>
</tr>
<tr>
<td>1998</td>
<td>2xSorbus AAAC</td>
<td>90°C</td>
<td>'Gap type' conductor</td>
</tr>
<tr>
<td>2000</td>
<td>2xMatthew GZTACSR</td>
<td>170°C</td>
<td></td>
</tr>
</tbody>
</table>

Maximum Rating in MVA per Circuit @ 400 kV
Role for RTO in managing congestion?

• Create an ITC with a financial incentive to reduce congestion
• Share savings and risk with customers and shareholders
Role for RTO in management of Controllable Costs for transmission

Today
• Weak financial incentive to manage controllable costs
• Costs a pass-through to customers

RTO
• Create a stronger financial incentive to “get it right”
• Share savings between shareholders and customers
Does it work though?
Controllable Cost Reductions in England & Wales

Reduced unit cost of transmission by 37%
Incentive regulation in the US

Massachusetts Electric’s distribution rate settlement

• Long Term Plan
  Similar to CPI-X
  Price adjustments limited to exogenous factors

• Investors retain revenues from volume growth and new services
Facilitating New Interconnections

This can be achieved by adopting:

• Uniform, region-wide policies and contracts, based on today’s “best practices”
## Benefits of Incentive Rates

<table>
<thead>
<tr>
<th>Service Quality features</th>
<th>Generators</th>
<th>End Users</th>
<th>Marketer</th>
<th>Public Power</th>
<th>Transmission Owners</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Availability</strong></td>
<td>Predictability Access to Market</td>
<td>Long Term Lower Costs</td>
<td>Less Market Volatility</td>
<td>Lower Congestion Costs</td>
<td>Financial Performance</td>
</tr>
<tr>
<td><strong>Generator Interconnections</strong></td>
<td>Quicker access to the grid</td>
<td>Long Term Lower Costs</td>
<td>Additional Power to Market</td>
<td>Access to Greater Range of Generators</td>
<td>Financial Performance</td>
</tr>
<tr>
<td><strong>Safety</strong></td>
<td>Lower Costs</td>
<td>Long Term Lower Costs</td>
<td>Long Term Lower Costs</td>
<td>Long Term Lower Costs</td>
<td>Financial Performance &amp; Employee Safety</td>
</tr>
<tr>
<td><strong>Congestion Relief</strong></td>
<td>Greater Market Access</td>
<td>Lower Energy Costs</td>
<td>Less Market Volatility</td>
<td>Lower Energy Costs</td>
<td>Financial Performance &amp; Increased Capital Investment</td>
</tr>
</tbody>
</table>
What is the value of transmission that can be unlocked?

The answer depends on:

- The structure of the RTO
- How the RTO is incentivised
- How soon the RTO begins
- How good the RTO is at improving efficiency