

WHITE PAPER / **FERC ORDER 1000 MARKET ASSESSMENT**

# ASSESSING THE EFFECTIVENESS OF FERC ORDER 1000

**BY Josh Rawley**

Years into FERC Order 1000, criticism remains. While intended to promote more efficient and cost-effective transmission development, critics believe the administrative load, regional differences and lack of clarity impede progress. This market assessment focuses on RTO/ISO regions and the limited functions, control and resources of non-RTO/ISO regions, which have yet to award a competitive transmission project.



In 1996, the Federal Energy Regulatory Commission (FERC) issued orders that laid the foundation to open the U.S. energy industry to competition. Order 888 and Order 889 were companion directives issued that unbundled electricity services, opened access to rate schedules, and made transmission services available on the open market. Standards were set requiring utilities to openly share information and allow wholesale energy markets to reserve capacity on regional electricity grids.

Continuing the momentum of restructuring and open access, FERC issued Order 2000 in late 1999. To realize the FERC vision for a competitive and reliable transmission grid, utilities were encouraged to create and join a regional transmission organization (RTO). RTOs were tasked with adopting a range of functions aimed at allowing transmission grid access to all market participants; all transmission operators and regions were encouraged to participate.

Given the trajectory toward an open and competitive electricity market for the U.S., FERC Order 1000 (issued in July 2011) was not a surprise.

## FERC ORDER 1000

Where previous FERC directives lay the foundation, Order No. 1000 strives to provide rules that will result in increased market competition.

“Order No. 1000 sought to provide consumers and our economy with more efficiently priced and delivered electricity by introducing greater competition in the provision of transmission services,” stated FERC Commissioner John R. Norris.

FERC Order 1000 focuses on three areas of reform for utilities: planning process reform, cost allocation reform, and nonincumbent developer reform.

**Planning process requirements** now include mandatory regional and inter-regional transmission cooperation among utility transmission providers. This new multistate or multi-RTO planning process also now incorporates a top-down approach that must consider federal and state energy public policy mandates.

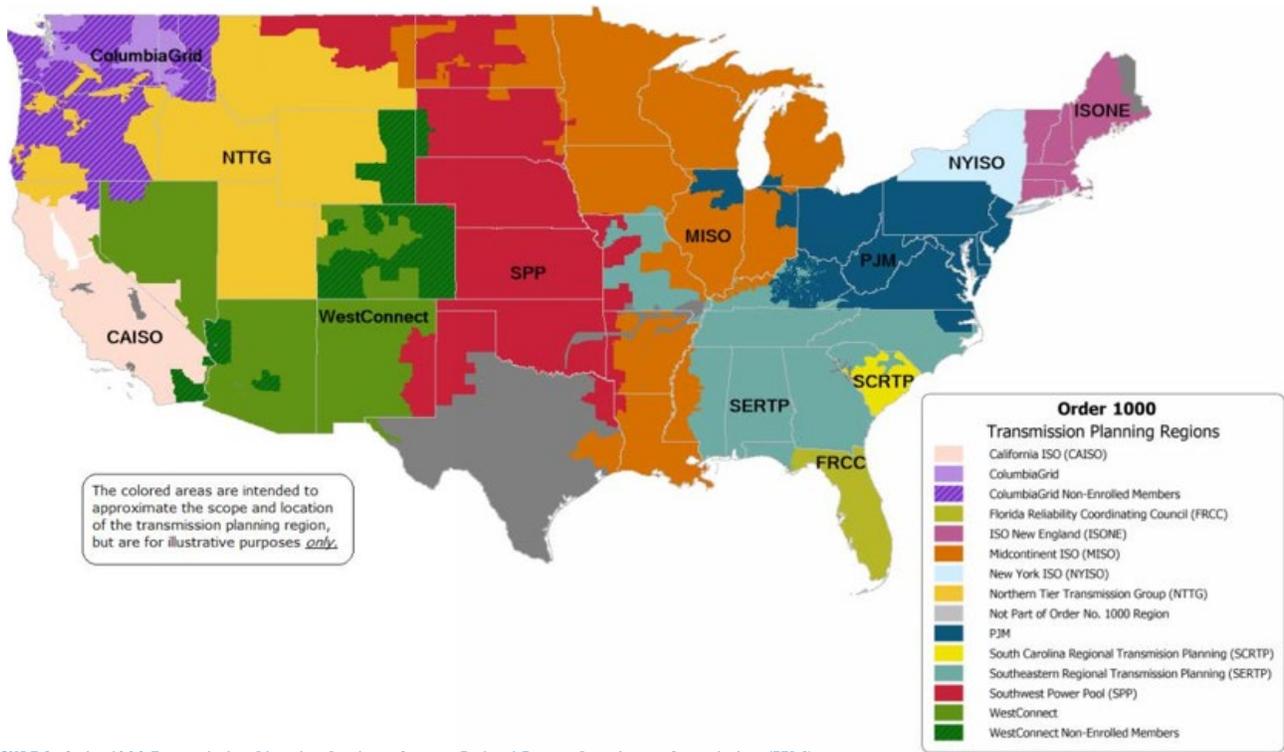


FIGURE 1: Order 1000 Transmission Planning Regions, Source: Federal Energy Regulatory Commission (FERC)

**Cost allocation reform** focuses on making sure utility costs are distributed among those customers who benefit from a project. FERC has identified regional cost allocation principles that each project must meet.

**Nonincumbent developer reform** comes in the form of removing the right of first refusal (ROFR) from tariffs and agreements for public utilities. Whereas previously utilities maintained the ROFR to construct, own and operate transmission project in their areas, this provision, though still in existence in some states, is now opening transmission projects to competition.

### PLANNING FOR CHANGE

As part of Order 1000 compliance, FERC seeks planning coordination and cost allocation among neighbor transmission planning regions. The directive expects regions will determine what cost-effective and efficient planning solutions exist and work together to create mutually agreeable ways to allocate transmission facility costs to those areas receiving the most benefit. Unfortunately, it's been challenging to implement. Only a few interregional projects have been developed, with criticism attributed to regional control, disconnect in state policies, planning models and ineffective overall coordination.

FERC has accepted interregional coordination filings for the creation of 12 transmission planning regions across the U.S. Of these regions, half are RTOs. The remainder are known as "transmission coordinators" and have comparatively limited function and resources in terms of impact to Order 1000.

### COMPETITION IN RTO/ISO REGIONS VS. NON-RTO/ISO REGIONS

While both RTO/ISO and non-RTO/ISO regions operate under FERC jurisdiction, in practice, non-RTO/ISOs have comparatively limited functions and resources that have impacted transmission competition.

- In integrated regions, transmission competition has been more effective, relatively. Planning is more regional in nature in integrated regions where an organized market and numerous state policies exist, such as those served by an RTO/ISO.

Regional Transmission Planning	Origin and Planning Cycle
California ISO (CAISO)	<ul style="list-style-type: none"> <li>• ISO</li> <li>• 15-month cycle</li> </ul>
ColumbiaGrid	<ul style="list-style-type: none"> <li>• Pre-Order 890 (10 parties)</li> <li>• 2-year cycle</li> </ul>
Florida Reliability Coordinating Council (FRCC)	<ul style="list-style-type: none"> <li>• Regional reliability entity and planning coordinator</li> <li>• 2-year cycle</li> </ul>
ISO New England (ISO-NE)	<ul style="list-style-type: none"> <li>• ISO</li> <li>• No set cycle</li> </ul>
Midcontinent ISO (MISO)	<ul style="list-style-type: none"> <li>• RTO</li> <li>• 18-month cycle</li> </ul>
New York ISO (NYISO)	<ul style="list-style-type: none"> <li>• ISO</li> <li>• 2-year cycle</li> </ul>
Northern Tier Transmission Group (NTTG)	<ul style="list-style-type: none"> <li>• Order 890 (6 parties)</li> <li>• 2-year cycle</li> </ul>
PJM	<ul style="list-style-type: none"> <li>• RTO</li> <li>• 2-year cycle long term; 1-year cycle short term</li> </ul>
South Carolina Regional Transmission Planning (SCRTP)	<ul style="list-style-type: none"> <li>• Order 890 (2 parties)</li> <li>• 2-year cycle</li> </ul>
Southeastern Regional Transmission Planning (SERTP)	<ul style="list-style-type: none"> <li>• Pre-Order 890 (10 parties)</li> <li>• 1-year cycle</li> </ul>
Southwest Power Pool (SPP)	<ul style="list-style-type: none"> <li>• RTO</li> <li>• 18-month cycle</li> </ul>
WestConnect	<ul style="list-style-type: none"> <li>• Order 890 (18 parties)</li> <li>• 2-year cycle</li> </ul>

**FIGURE 2:** Planning cycle length and type of region for FERC classifications.

- Competition has been less effective, relatively, with zero competitively solicited or awarded projects. Planning is done more locally in bilateral markets where vertically integrated, monopoly utilities exist, such as those served by a non-RTO/ISO.

### ORDER 1000 IN ACTION

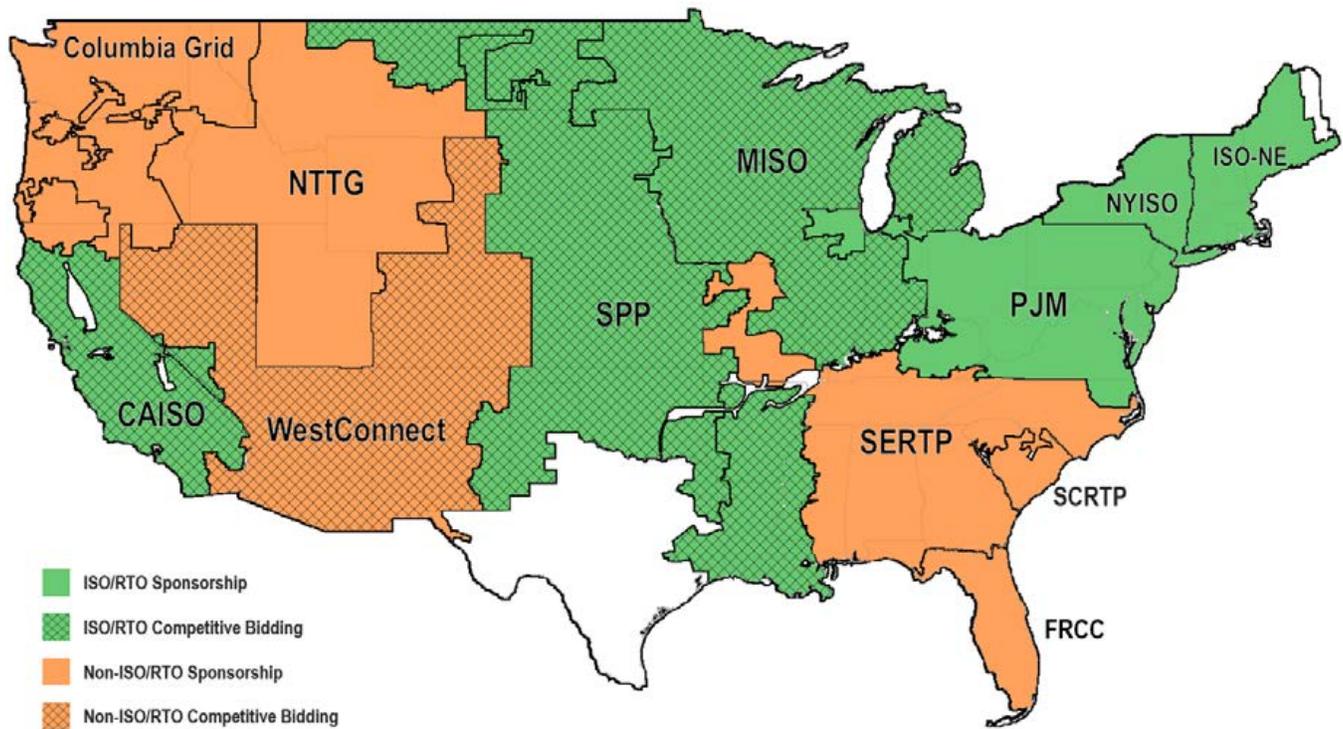
The elimination of the ROFR for inter-regional projects has utility providers (incumbent and nonincumbent) implementing different ways of operating to manage change in a competitive environment.

Regions across the country are working with two operating models, with each having its own perceived advantages and challenges:

- **Competitive bid model** generally refers to solicitations for a transmission project that have been identified by the regional planning entity (ISO or RTO). Regions using this model have awarded more projects and proponents see the process as being clearer,

eliminating biased positions or interpretations and typically has shown to be easier for regions to manage and control.

- **Sponsorship bid model** allows a solution to be proposed during the planning phase and, if selected, the project sponsors secure the right to build, own and operate the project. This model was developed to drive a lower cost approach by allowing stakeholders to develop solutions. Of the regions in Figure 3 that operate under this model, only PJM and NYISO have awarded projects. Proponents believe this model brings the lower cost option(s) by allowing stakeholders to develop solutions.

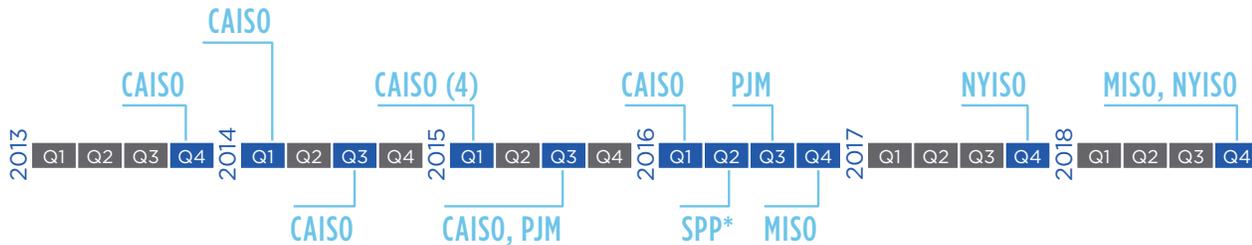


**FIGURE 3:** Transmission planning regions sponsorship approach. Source: Regional Transmission Planning, Energy Analysis and Environmental Impacts Division Lawrence Berkeley National Laboratory, 2017.

## PROJECTS TO DATE, AS OF DECEMBER 2018

Since 2011, when FERC Order 1000 was passed, RTO and ISO regions have awarded 16 competitive transmission projects. Across these territories, both competitive and sponsorship bid models have been used with

the competitive model awarding 12 projects and the sponsorship model awarding four projects. It's important to note that within PJM, stakeholder solutions can be combined into a portfolio of projects that solve an identified need.



FERC Order 1000 Awards	Date Awarded	Region	Developer	Process Model
<b>Gates to Gregg 230-kV Transmission Project</b>	2013, Q4	CAISO	PG&E/MidAmerican Transmission/Citizens Energy	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Several qualified project sponsors submitted into CAISO’s first competitive solicitation process but incumbent (PG&amp;E/MidAmerican Transmission/Citizens Energy) won.</li> <li>• The incumbent winner outranked competition with a California-based project resume and existing right-of-way (ROW) for much of the proposed corridor as significant advantage.</li> <li>• Project on hold. In CAISO’s 2017-2018 transmission plan, the ISO stated, “The recommendation is for Gates-Gregg 230 kV Line project to remain on hold with detailed renewable integration assessment to be conducted in the 2018-2019 TPP to address the uncertainties and renewable integration benefits for the project.”</li> </ul>				
<b>Sycamore to Penasquitos 230-kV Transmission Project</b>	2014, Q1	CAISO	SDG&E/Citizens Energy	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Incumbent utility (SDG&amp;E/Citizens Energy) competed against two international companies and one developer.</li> <li>• All met initial requirements but incumbent ranked higher in major evaluation categories.</li> <li>• Incumbent exhibited strength in permitting experience, relevant construction and maintenance experience and cost containment planning.</li> <li>• In-service date, June 2018.</li> </ul>				
<b>Miguel 500-kV Reactive Power Support</b>	2014, Q3	CAISO	SDG&E	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Project bid window opened simultaneously with another CAISO project (Suncrest 230-kV Reactive Power Support).</li> <li>• Incumbent SDG&amp;E was the only project sponsor application received and was selected.</li> </ul>				

FERC Order 1000 Awards	Date Awarded	Region	Developer	Process Model
<b>Suncrest 230-kV Reactive Power Support</b>	2015, Q1	CAISO	NextEra	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Very competitive project solicitation between two project sponsor applicants, both with strong project experience and balance sheets.</li> <li>• Award decision focused on detailed specifics around cost risk and cost containment.</li> <li>• Nonincumbent project sponsor, NextEra, was awarded project.</li> </ul>				
<b>Estrella 230-kV Substation Project</b>	2015, Q1	CAISO	NextEra	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Project was part of the second bid window for three substations in PG&amp;E service territory.</li> <li>• All applicants submitted complete and compelling proposals with few differences in qualifications, permitting experience, finance ability or project delivery schedule.</li> <li>• Cost containment became the core determining factor from a proposed binding cost cap and lower interconnection costs from proximity to interconnection points.</li> <li>• Nonincumbent project sponsor, NextEra, was awarded project.</li> </ul>				
<b>Wheeler Ridge Junction Project</b>	2015, Q1	CAISO	PG&E	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Project was part of the second bid window for three substations in PG&amp;E service territory.</li> <li>• All applicants submitted complete and compelling proposals with few differences in qualifications, permitting experience, finance ability or project delivery schedule.</li> <li>• Cost containment became the core determining factor from lower operations and maintenance (O&amp;M), site preparation and development costs.</li> <li>• Incumbent project sponsor, PG&amp;E, was award this project.</li> </ul>				
<b>Morgan Hill Area Reinforcement Project (previously, Spring Substation Project)</b>	2015, Q1	CAISO	PG&E	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Project was part of the second bid window for three substations in PG&amp;E service territory.</li> <li>• All applicants submitted complete and compelling proposals with few differences in qualifications, permitting experience, finance ability or project delivery schedule.</li> <li>• Cost containment became the core determining factor from lower O&amp;M, site preparation and development costs.</li> <li>• Incumbent project sponsor, PG&amp;E, was award this project.</li> </ul>				
<b>Delaney to Colorado River 500-kV Project</b>	2015, Q3	CAISO	Abengoa Transmission/ Starwood Energy	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• After initial bids were received, applicants were given a 20-day window to consider submitting a joint application.</li> <li>• Proposals were received from five entities, including one joint proposal between Southern California Edison and TransCanyon DCR LLC.</li> <li>• Selection greatly emphasized cost containment strategies. Primary selection factor was with regard to cost containment, particularly the commitment to binding cost measures.</li> <li>• DCR Transmission (a joint venture of Abengoa Transmission and Starwood Energy) won the award, despite slight disadvantages compared to selection factors of other sponsors, by proposing an all-in binding cost containment proposal based on lower capital costs and no offramps or exceptions in cost commitment.</li> </ul>				

FERC Order 1000 Awards	Date Awarded	Region	Developer	Process Model
<b>Artificial Island</b>	2015, Q3	PJM	LS Power	Sponsorship
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• 26 proposals received from seven entities for PJM’s first competitive solicitation.</li> <li>• Project costs estimated from \$116 million to \$1.5 billion.</li> <li>• PJM modified proposals during evaluation to improve performance or reduce cost and improve constructability plus provided cost estimates for each proposal.</li> <li>• Review criteria priority order: performance, cost and constructability.</li> <li>• Nonincumbent project sponsor, LS Power, was awarded the project.</li> </ul>				
<b>Harry to Eldorado 500-kV Transmission Project</b>	2016, Q1	CAISO	DesertLink LLC	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Three qualified project sponsors submitted proposals including a joint proposal from NextEra and Southern California Edison.</li> <li>• Primary selection factor was with regard to cost containment, particularly the commitment to binding cost measures. This factor was particularly important because the justification of this project was based on economic benefits to ratepayers.</li> <li>• Nonincumbent project sponsor, DesertLink LLC and LS Power Company, was awarded the project.</li> <li>• Planned in-service date is Q2 2020.</li> </ul>				
<b>Walkemeyer to North Liberal Transmission Line Project*</b>	2016, Q2	SPP	Mid-Kansas Electric (electric consortium cooperatives)	Competitive Bid
Project solicitation at a glance: <ul style="list-style-type: none"> <li>• Eleven proposals were received for the first competitive project issued by SPP with incumbent Mid-Kansas Electric (operated by Sunflower Electric Power) winning the project.</li> <li>• Due to a drop in forecasted oil and gas exploration loads (27 percent drop in load forecasts from 173 MW to 25 MW since the initial study), the project was canceled.</li> <li>• Project was approved by the board in April 2016 and canceled in July 2016.</li> </ul>				
<b>Independence Energy Connection (Southern PA/MD)</b>	2016, Q3	PJM	Transource (AEP/Great Plains Energy)	Sponsorship
Project at a glance: <ul style="list-style-type: none"> <li>• In October of 2014, PJM opened the first Order 1000 Long Term Market Efficiency proposal window to solicit proposals to address future congestion. Prior to the implementation of Order 1000, RTEP Market Efficiency projects were assigned to the incumbent transmission owners.</li> <li>• There were 93 proposals submitted during the long term window, ranging in costs from \$100,000 to \$432 million. Proposals included both transmission owner upgrades and greenfield projects by incumbent and nonincumbent transmission owners.</li> <li>• PJM approved 11 market efficiency projects. These projects consisted of upgrades and were designated to the incumbent transmission owners.</li> <li>• Following the approval of these 11 projects, PJM continued to assess a group of projects submitted to address congestion. Forty-one projects were proposed with 11 projects being competitive. Ultimately, the project that provided the most benefits was proposed by Transource Energy LLC, project 9A.</li> <li>• According to PJM, project 9A showed a B/C ratio of 4.67 with an estimated cost of \$320 million and is expected to mitigate at least \$622 million in energy market congestion over 15 years.</li> <li>• Pending state approvals, construction is expected to begin Q4 in 2019 with expected project in-service date Q4 2020.</li> </ul>				

\*Project was cancelled

FERC Order 1000 Awards	Date Awarded	Region	Developer	Process Model
<b>Duff to Coleman</b>	2016, Q4	MISO	Republic Transmission	Competitive Bid
<p>Project solicitation at a glance:</p> <ul style="list-style-type: none"> <li>• Eleven comprehensive proposals received for MISO’s first competitive solicitation with the winning proposal rating highest on all four evaluation criteria.</li> <li>• Nonincumbent Republic Transmission was awarded the project based on low cost, lowest risk, project implementation and O&amp;M.</li> <li>• Republic Transmission is a wholly owned subsidiary of LS Power Associates. Republic Transmission’s proposal includes one proposal participant: Big Rivers Electric Corporation. In addition, to help execute the project, LS Power and Big Rivers Electric partnered with Hoosier Energy.</li> <li>• Per MISO’s selection report, Republic Transmission’s performance was unmatched by any other proposal, scoring 95/100 compared to the other proposals ranging from 80 to 41 points.</li> </ul>				
<b>Empire State Line (Western NY)</b>	2017, Q4	NYISO	NextEra	Sponsorship
<p>Project at a glance:</p> <ul style="list-style-type: none"> <li>• November 2015, NYISO solicited proposals to address their Public Policy needs to fully utilize renewable energy from the Robert Moses Niagara Hydroelectric Power Station as well as imports from Ontario.</li> <li>• Twelve proposals were submitted by seven entities (incumbent and nonincumbent).</li> <li>• The NYISO board selected nonincumbent NextEra as the more efficient or cost-effective solution. This selection was the first transmission project under Order 1000.</li> <li>• Twenty miles of transmission in Niagara and Erie counties in New York and will be capable of transmitting 3,700 MW of renewable energy from Niagara hydroelectric facility and imports from Ontario.</li> </ul>				
<b>AC Transmission Projects (2 segments)</b>	2018 Q4	NYISO	Segment A: NAT/NYPA Segment B: National Grid/ Transco	Sponsorship
<p>Project at a glance:</p> <ul style="list-style-type: none"> <li>• The New York State Public Service Commission (PSC) and the New York Independent System Operator (NYISO) issued an order in December 2015 identifying the AC Transmission Public Policy Transmission Needs. This was a multiyear joint effort that resulted in the AC Transmission Projects, Segment A and B.</li> <li>• Through this multiyear development, four entities proposed 22 proposals. Cost estimates for the proposed transmission projects ranged from \$491 million to \$863 million for Segment A and \$373 million to \$536 million for Segment B.</li> <li>• After modifications from initial approvals, the NYISO Board of Directors as of December 2018 selected the following entities as having the most cost-effective solution: Segment A: Northern American Transmission (NAT) an affiliate of LS Power and New York Power Authority (NYPA). Segment B: National Grid and the New York Transco (Transco).</li> </ul>				
<b>Hartburg-Sabine 500-kV Project (WOTAB)</b>	2018, Q4	MISO	NextEra	Competitive Bid
<p>Project at a glance:</p> <ul style="list-style-type: none"> <li>• In February 2018, MISO solicited proposals for its second competitive project under Order 1000.</li> <li>• The Hartburg-Sabine Junction 500 kV Competitive Transmission Project consists of five new high-voltage transmission lines and one new substation.</li> <li>• MISO received 12 proposals from nine MISO qualified transmission developers with total project implementation costs ranging from \$95.4 million to \$133.9 million.</li> <li>• MISO selected NextEra as the selected developer. From MISO’s selection report, NextEra’s proposal offered an outstanding combination of low cost and high value with a total project cost of \$114.8 million.</li> </ul>				

## UNDERSTANDING THE IMPACT

Utilities, operators and the market are still adjusting to operating in a FERC Order 1000 world. Given the significance of the directive, organizations are evaluating and reporting findings as additional insight is uncovered.

### FERC TECHNICAL CONFERENCE

On June 27, 2016, FERC held a technical conference to discuss issues related to the competitive transmission development process, including the use of cost containment, the relationship of competitive transmission development to transmission incentives and other issues. In addition, participants had the opportunity to discuss issues relating to interregional transmission coordination, regional transmission planning and other transmission development issues.

The conference produced a variety of feedback from stakeholders as it still does today. Some stakeholders expressed major changes to the Order while some believed it was too early to tell. One of the main takeaways that the majority of stakeholders requested from FERC was to improve transparency in the regions' selection process, issues that regions still face today.

### FERC STAFF REPORTS

In assessing impact, FERC presented Transmission Metrics: Initial Results Staff Report<sup>1</sup> in March 2016 and the FERC 2017 Transmission Metrics Staff Report<sup>2</sup> in October 2017. While these reports were the first of their kind and aimed to report on the state of the nation's transmission system and project development, the latter report acknowledges: "It is difficult to assess whether the electric industry is investing in sufficient transmission infrastructure to meet the nation's needs and whether the investments made are more efficient or cost-effective."

Regardless, the reports focus heavily on nonincumbent participation in transmission development as a metric to evaluate progress. The following are a few key findings identified in the October 2017 report:

- Nonincumbent proposals were received by PJM for new competitive proposals between 2013 and 2016.
- NYISO received more proposals from nonincumbents than incumbents in 2015, but the reverse was true in 2016.
- Nonincumbents submitted the majority of proposals in response to MISO proposal window in 2016.
- The percentage of selected proposals that nonincumbents submitted declined from 20 percent in 2013 to 6 percent in 2014, to 3 percent in 2015, and to zero in 2016 for planning regions with competitive proposal windows.

### DEPARTMENT OF ENERGY REPORT

The report, Planning Electric Transmission Lines: A Review of Recent Regional Transmission Plans,<sup>3</sup> prepared for offices of the U.S. Department of Energy in September 2016, assessed transmission plans directly affected by FERC Orders 890 and 1000. The report, recommended by the first Quadrennial Energy Review (QER) task force, was a national review of transmission plans and noted several key findings:

- **Finding 1:** It is premature to draw conclusions, including barriers and incentives, of the outcomes of the FERC Orders given changes to project selection processes.
- **Finding 2:** Assessment of regional progress should focus on monitoring and tracking of identified process elements, including economic and cost modeling tools, project selection process and stakeholder engagement.
- **Finding 3:** Variation exists among the evaluation of transmission benefits during the planning process and consideration should be given to evolving the scope of benefits and means to evaluate benefits.
- **Finding 4:** Growing sophistication of advanced analysis techniques and additional insight should be considered in evaluating transmission benefits in regional transmission planning processes.

<sup>1</sup> <https://www.ferc.gov/legal/staff-reports/2016/03-17-16-report.pdf>

<sup>2</sup> <https://www.ferc.gov/legal/staff-reports/2017/transmission-investment-metrics.pdf>

<sup>3</sup> <https://www.energy.gov/sites/prod/files/2017/01/f34/Planning%20Electric%20Transmission%20Lines--A%20Review%20of%20Recent%20Regional%20Transmission%20Plans.pdf>

## HOUSE ENERGY SUBCOMMITTEE REVIEW

The House Energy Subcommittee<sup>4</sup> held a hearing on the state of transmission infrastructure and transmission planning in May 2018 and concluded that Order 1000 has not yet incentivized transmission development as intended and refinements were needed.

The House Energy Subcommittee hearing included testimony from former FERC Commissioner Tony Clark and a recent white paper issued on the state of Order 1000.<sup>5</sup> Clark summarizes: “Given the changes in the electricity industry over the last decades, now is a good time for the Commission to consider an Order 1000 reassessment.”

While evaluation is being undertaken to understand the effects, refinements to Order 1000 may still be required to fully realize the intention of the directive. Creating a competitive market to eliminate long-standing monopolies and incentivize cost-effective projects is underway

## WILKINSON BARKER KNAUER LLP REVIEW

Clark, the senior adviser at the law firm Wilkinson Barker Knauer and former FERC commissioner, provided a comprehensive assessment and review paper titled, “Order 1000 at the Crossroads: Reflections on the Rule and Its Future”<sup>6</sup> in April 2018.

The report offers critiques, lessons learned and suggestions for the future of FERC Order 1000. As a key finding, the paper states, “After laying out the background of Order 1000 and discussing the myriad of goals that the rule was meant to support, this paper identifies one of the major pitfalls of the rule: it imposes bureaucratic planning requirements on the national transmission system, largely without considering that each region’s needs, priorities and processes are different.”

In considering the future way forward, the paper identifies different perspectives but aligns itself as supporting the view that “no matter how well-intentioned the rule, the

cumulative weight of it can no longer be justified by its results, or lack thereof.”

## WIRES RESPONSE TO ENERGY SUBCOMMITTEE (COMMITTEE ON ENERGY AND COMMERCE) HEARING

WIRES, the non-profit international trade association, submitted formal observation of the U.S. House of Representatives Energy Subcommittee hearing, “Examining the State of Electric Transmission Infrastructure: Investment, Planning, Construction and Alternatives.”<sup>7</sup> Key points made by James J. Hoecker, executive director and counsel of WIRES and a former FERC chairman, of Order 1000 include:

- The level of transmission investment in recent years essentially made up for a quarter century of underinvestment [and] continued investment is not optional.
- We are building an integrated, regional and multistate network under laws and a jurisdictional division of labor based on a completely outdated business model of local and state monopoly.
- Failure [of Order 1000] to produce more interregional projects to sustain broader markets is a major problem.
- Order 1000 instituted the regionalization of grid planning and allocation of costs to true beneficiaries that are, and should remain, the touchstones of grid regulation. It has generated many successes, and now we should move beyond it.
- The decentralization of electric generation resources ... do not spell the end of the wired network of transmission lines.

## THE BRATTLE GROUP REPORT

In assessing the impact to transmission competition, The Brattle Group released details of an Order 1000 analysis. The study, “Transmission Competition Under

<sup>4</sup><https://energycommerce.house.gov/hearings/examining-the-state-of-electric-transmission-infrastructure-investment-planning-construction-and-alternatives/>

<sup>5</sup> <http://www.wbklaw.com/uploads/file/Articles-%20News/2018%20articles%20publications/WBK-%20TC-Order%201000%20whitepaper%20Final.pdf>

<sup>6</sup> <http://www.wbklaw.com/uploads/file/Articles-%20News/2018%20articles%20publications/WBK-%20TC-Order%201000%20whitepaper%20Final.pdf>

<sup>7</sup> <https://docs.house.gov/Committee/Calendar/ByEvent.aspx?EventID=108283>

FERC Order 1000: What we Know About Cost Savings to Date,” found that project eligibility criteria under the ISO/RTO competitive transmission planning processes remain restrictive, greatly limiting the scope of competition and the potential for customer savings. The Brattle Group noted several additional key findings:

- **Finding 1:** U.S. transmission investments have grown from \$2 billion per year in the 1990s to over \$20 billion per year in the last five years, with 85 percent of that investment located within an ISO/RTO region. Yet only 2 percent of transmission investments within an RTO/ISO were bid competitively since the FERC Order 1000 mandate.
- **Finding 2:** ISO/RTO-planned transmission projects not subject to competition have experienced cost escalations, with final project costs — including inflation — exceeding the projects’ initial cost estimates by 34 percent on average.
- **Finding 3:** Winning bids of competitive transmission projects have been priced on average 40 percent below initial project cost estimates and have been accompanied with cost caps or other cost-control mechanisms.
- **Finding 4:** Roughly one-half of the approximately \$70 billion of aggregate FERC-jurisdictional investments over the past five years were made based on local planning processes of incumbent transmission owners with limited ISO/RTO review and stakeholder input, resulting in less scrutiny in assessing the needs and cost-effectiveness of the investments.
- **Finding 5:** Expanding the share of competitive projects from existing 2 percent of total transmission investment to 33 percent would provide \$8 billion in customer benefits over five years.

The study recommends reducing qualification thresholds under each RTO/ISO competitive process and developing consistent criteria, drawing from best practices from least-restrictive RTOs to expand scope of competition to capture the potential savings alluded to in the study. In addition, having consistent reporting requirements to facilitate better tracking of project costs across all regions will build on those potential cost savings.

## CONCLUSION

FERC Order 1000 aims to achieve more cost-effective and efficient transmission development in the U.S. by transforming how electric transmission projects are planned, costs allocated and integrated across regions. As the electric grid is extensively planned and regulated at many levels, however, industrywide reform is difficult to achieve. Because the electric industry is regional in policy and practice, the impact of change, big or small, differs greatly by region.

In building on FERC Order 890, and to achieve greater market competition, the removal of ROFR from FERC tariffs for incumbent transmission providers strives to eliminate monopolies and build a more level playing field. Challenges remain. One challenge is utilities with service territories can and are obligated to, plan transmission systems and recover costs as part of their cost of service, without a defined process for competition.

Some regions have been successful, relatively, in the competitive process to identify savings for well-defined projects. Other regions have struggled, many due to ongoing process changes to accommodate state, federal, stakeholder direction and regional politics.

For ISOs, RTOs and stakeholders striving to implement or propose in a FERC Order 1000 environment, a strategic and integrated approach has shown to be critical.

- System planning and economic analysis give a big picture view of project impact on transmission systems, optimal technology needed and expected returns.
- Routing selection examines construction issues, environmental and public concerns, permitting, and cost analysis to identify the most competitive routes available.
- Permitting requirements and approach can differentiate a proposal to be the most competitive with the greatest return.

- Public involvement helps to identify risks and rewards early on that can affect all parts of a proposal and lower risk.
- Cost estimates must consider market conditions, local climate, price fluctuations and be prepared quickly to be competitive.
- Schedule development lowers risk and offers a competitive advantage when it considers all inter-related components and is aggressive but realistic.

While FERC Order 1000 offers good intentions, unfortunately a handful of its challenges are inherent to the industry structure and processes. The business model of the U.S. electric industry is highly regional in policy and practice and, therefore, can be problematic to implement industrywide change.

## BIOGRAPHY

---

**JOSH RAWLEY** is a market analyst in the Transmission & Distribution Group focused on pre-positioning clients and teams on the developments and solutions for competitive transmission. His background includes experience as a substation engineer, leading and managing the substation design efforts for competitive and noncompetitive projects in the western U.S.