



Order 2000 Revisited: FERC Market Expansion and RTO Policy **Where Are We Now?**

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April 20, 2021

Executive Summary



- RTO membership has grown over time
- FERC policy was initially a key enabler to early RTO growth
- FERC Order 2000 set clear expectations for the role of the RTO
- Current FERC policy practices do not appear to be creating incentives for RTO membership growth over alternative options, e.g., energy imbalance markets or non-market participation
- FERC has numerous policy opportunities to continue to support RTO membership and further de-balkanize the grid

RTO market and open-access policy drivers have evolved over time



Competitive generation opportunities



Stranded costs



Declining load growth



Retail competition



Renewable integration



New technologies



Transmission technologies



Consumer environmental objectives

Market policy constituents have changed as opportunities for participation expand with new policy priorities

Old School (Restructuring ~2000)

- Edison Electric Institute (EEI)
- Electric Power Supply Association (EPSA)
- National Rural Electric Cooperative Association (NRECA) and American Public Power Association (APPA)
- Electricity Consumers Resource Council (ELCON)
- American Wind Energy Association (AWEA)
- Consumer Advocates
- ENRON

New School (Grid transformation ~2025)

- Competitive Transmission Developers
- Advanced Energy Economy (AEE)
- Sustainable FERC (NRDC)
- Renewable Energy Buyers Association (REBA)
- American Clean Power Association
- Environmental Justice Advocates
- Google

Order 2000 outlined the minimum characteristics and primary functions for RTOs

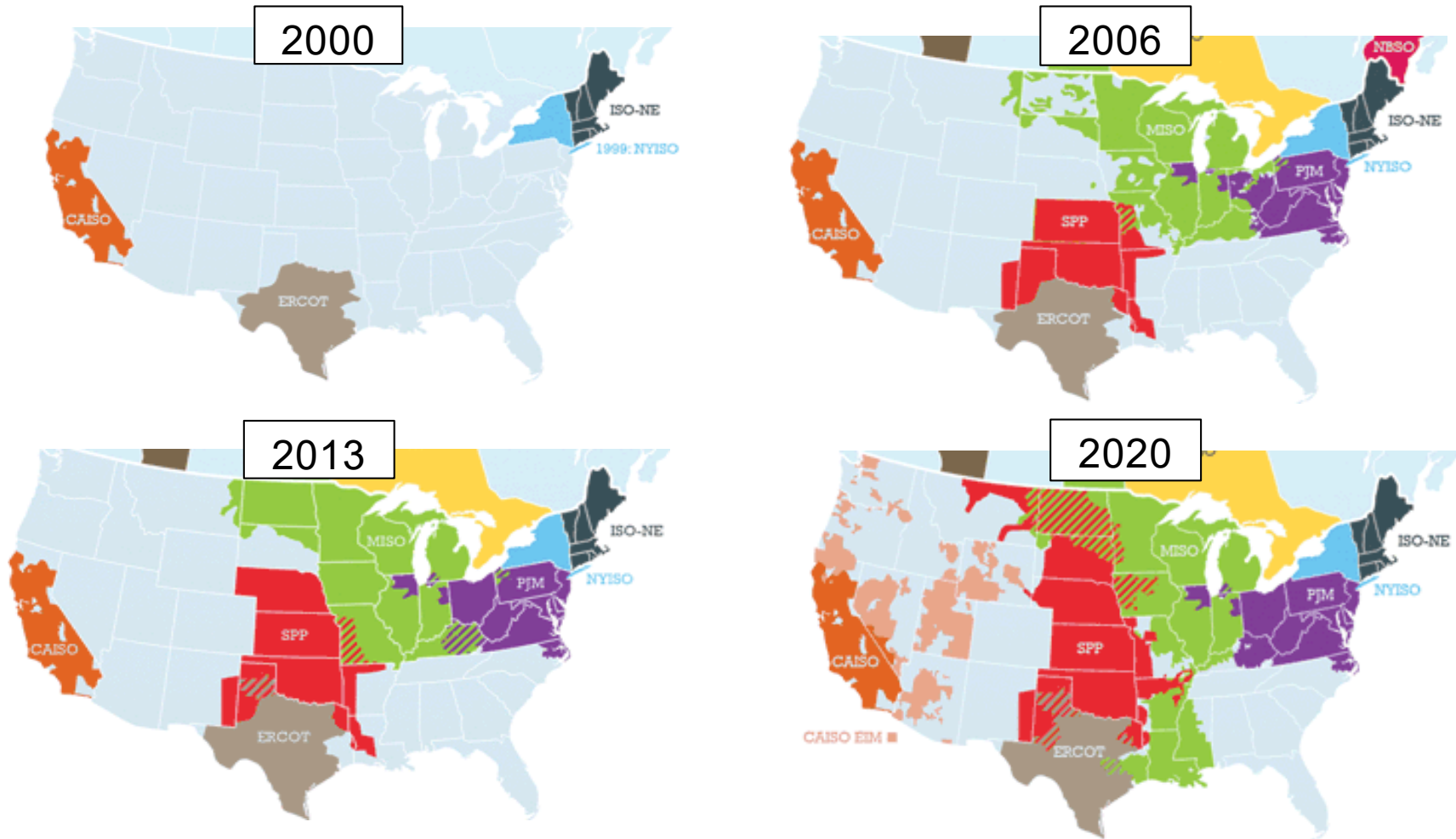
Minimum characteristics for RTOs

- Independence from market participants
- Appropriate scope and regional configuration
- Possession of operational authority for all transmission facilities under RTO control
- Exclusive authority to maintain short-term reliability of the grid

RTO functions in FERC Order 2000

- Tariff administration and design
- Market based imbalance and congestion management
- Provision of last resort for ancillary services
- Development of an open-access, same-time information system (OASIS)
- Market monitoring
- Responsibility for planning and expanding facilities under its control

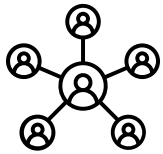
ISO/RTO membership has grown since Order 2000, but has slowed recently, with recent growth largely limited to EIMs



Significant FERC Electricity Policy advancements focus on RTO Markets rather than the Open Access Transmission Tariff

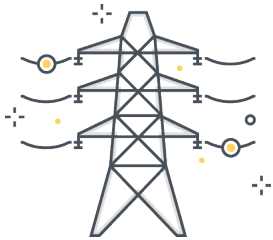
FERC Order	Applies to RTOs	Applies to Non-RTOs
Order 888- Open Access	X	X
Order 2000 – RTO Policy	X	X
Order 890 – Open Access 2.0	X	X
Order 719 – RTO Guidance (Governance, IMM, Demand Response)	X	
Order 1000 – Transmission Planning and Competition	X	X
Order 741 - Credit Reforms in Organized Wholesale Electric Markets	X	
Order 755 - Frequency Regulation Compensation in Organized Wholesale Power Markets	X	
Order 745 - Demand Response	X	
Order 764 - Integration of Variable Energy Resources	X	X
RTO Price Formations Suite (Order 831 Offer Caps, Order 844 Uplift Allocation & Transparency, RM 17-3 Fast Start Pricing)	X	
Order 841 – Energy Storage	X	
Order 2222 – Distributed Energy Resources	X	
PURPA Reforms	X	X

Future market expansion is dependent on actions and incentives



Customers

- End-Use: industrial, commercial, and residential
- Transmission-Dependent Utilities



Transmission Owners

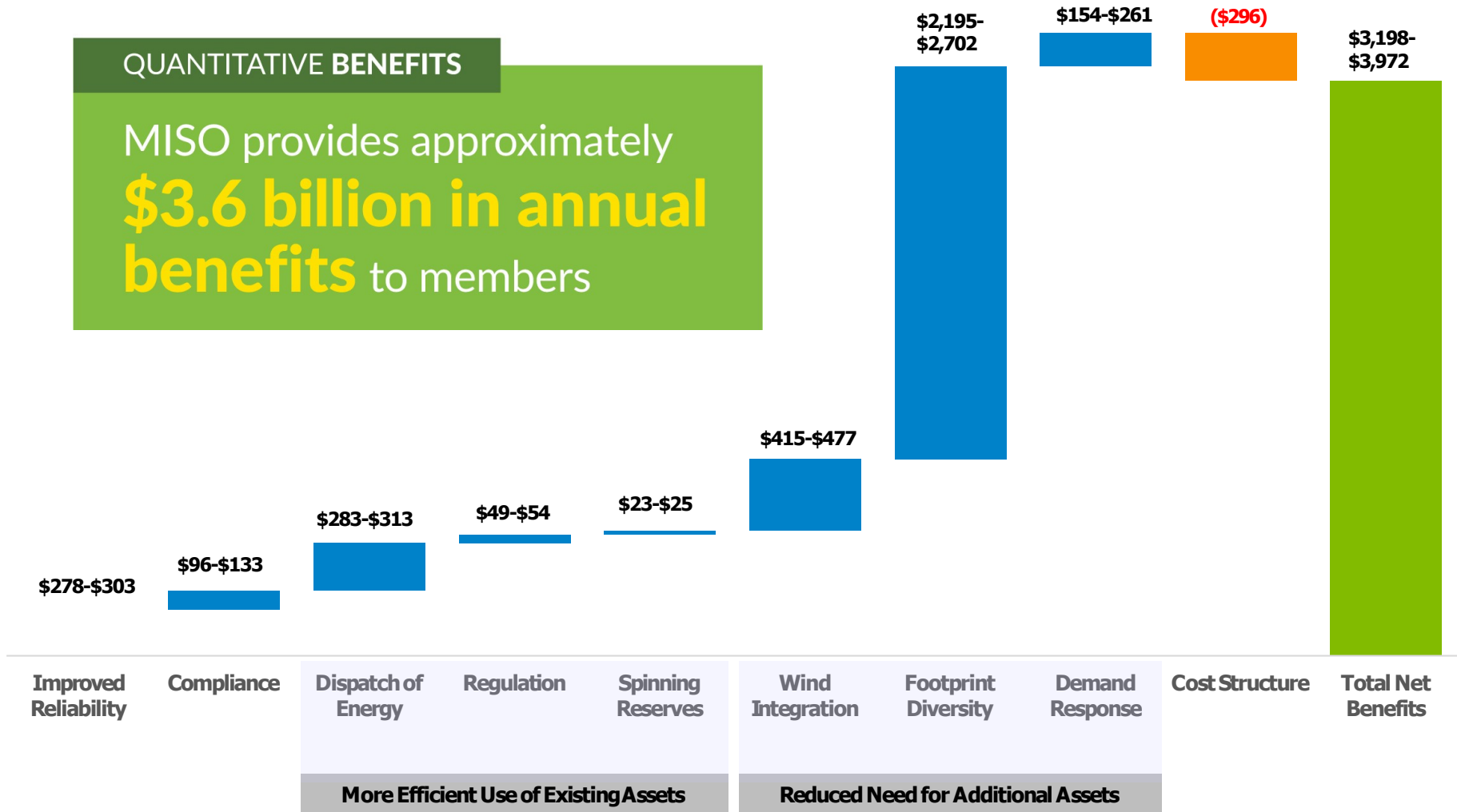
- Investor-Owned Utilities
- Public Power
- Cooperatives
- Federal Power Authorities



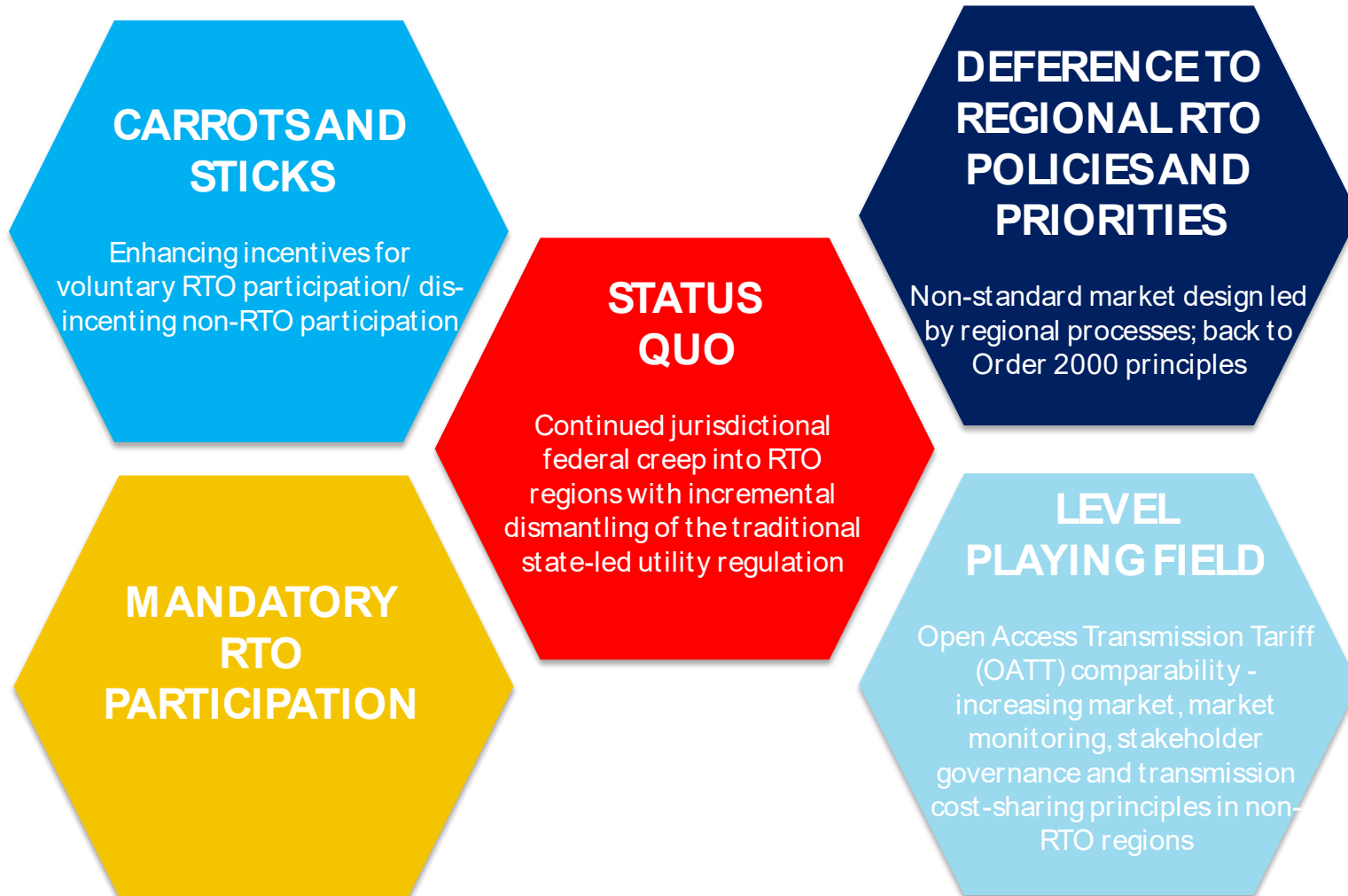
State and Federal Regulators

MISO 2019 Value Proposition

Benefit by Value Driver (\$ millions)



There are multiple RTO policy paths that may drive future market growth paths



Where will we go from here?

- **Most preferred outcome:** coordinated RTOs across the Nation
- **Practical outcomes:**
 - Incremental expansion of organized markets
 - EIM only
 - RTOs
 - Enhancements to Open Access Transmission Tariff (OATT)
- **Status quo:** balkanized grid

