

Regional Transmission Organizations: Successes and Challenges

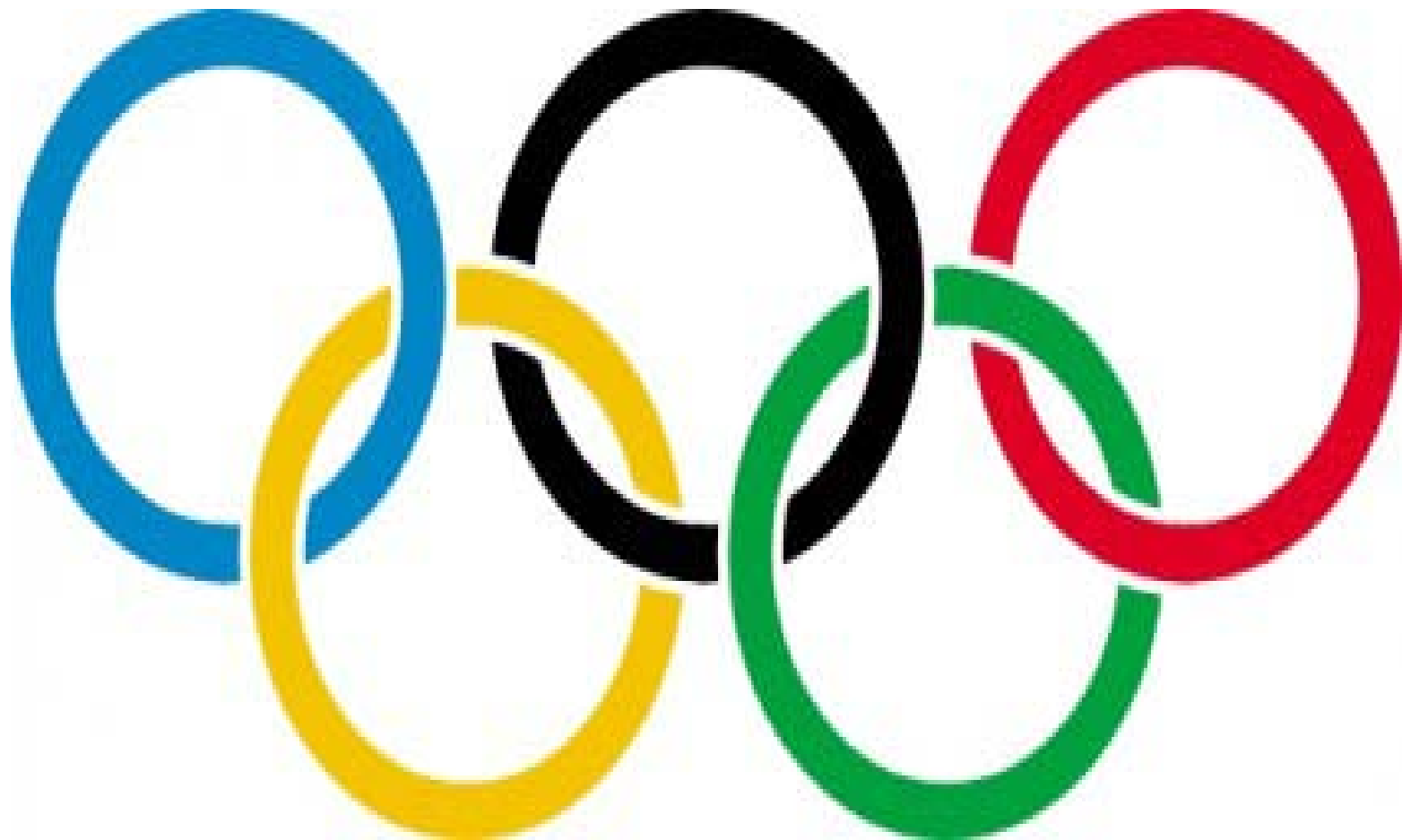
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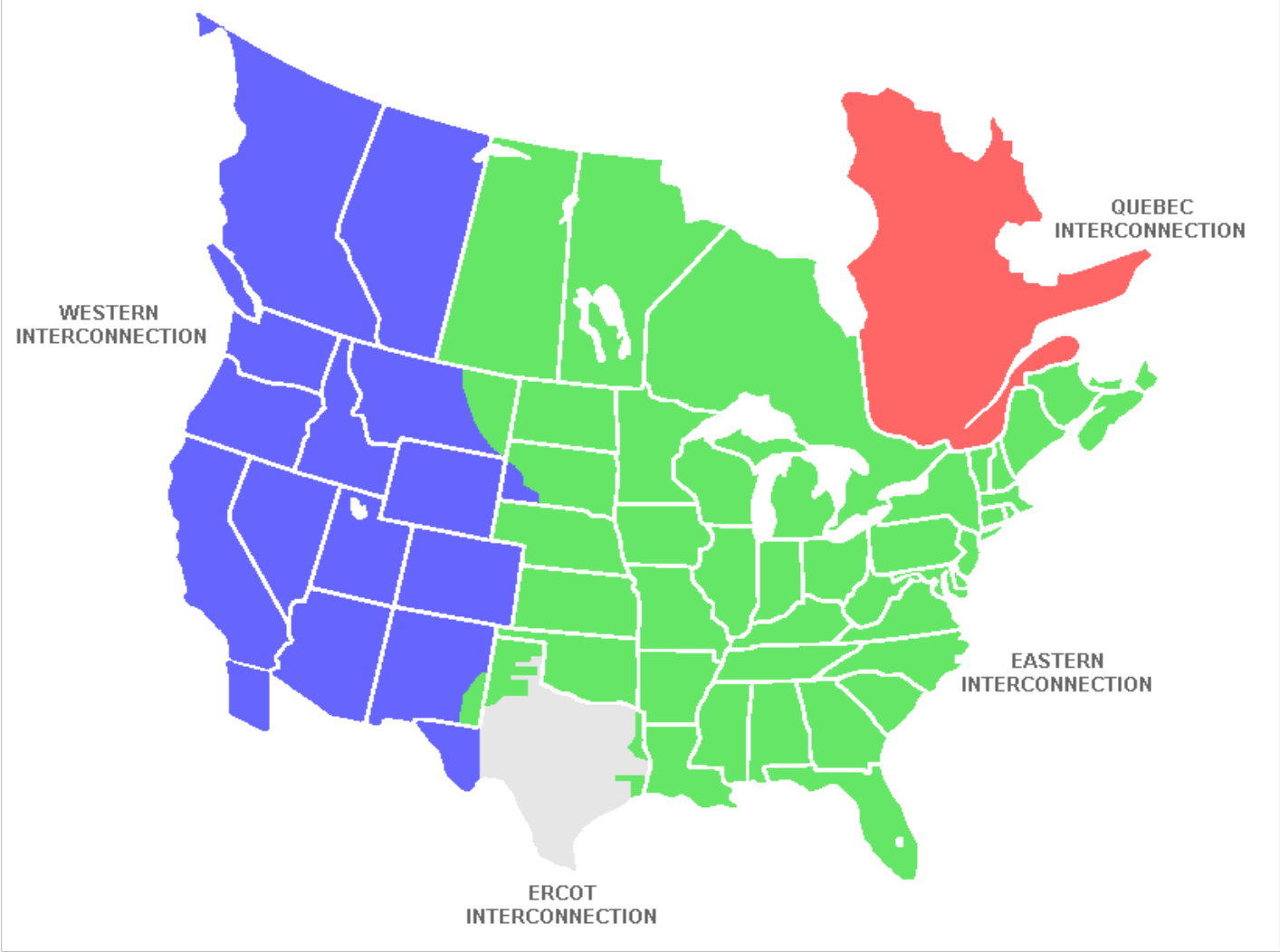
- Energy Policy Analyst New York State Energy Office 1978 – 1995
- Sithe Energies (IPP) 1995 – 2003
- New York Independent System Operator 2003 – 2007
- New York State Public Service Commission 2007 - Present

RTO “markets” attempt to account for at least 5 factors:

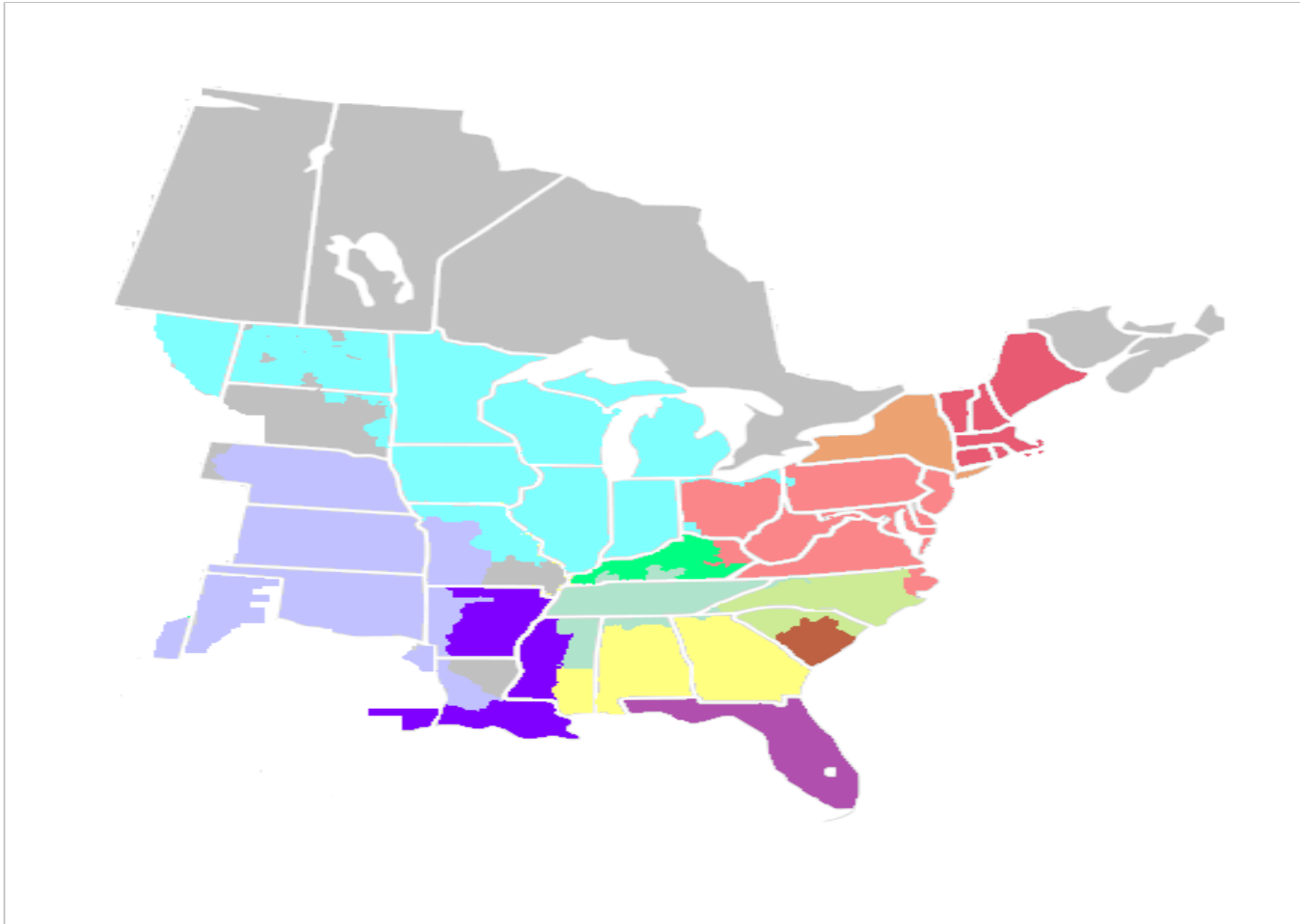
- ✓ Engineering Realities
- ✓ Market Theory
- ✓ Tariff Language/Legal
- ✓ IT Constraints
- ✓ Public Policy / Politics



Engineering



Eastern Interconnect With Regions



Model that Simulates Market

- Economic Theory | Pricing
- Church of Hogan vs. Tabors
- Critical Product | No Shortage Allowed

Legal

Tariffs need to accurately describe markets/engineering realities

- Frequent Disputes | FERC
- Market Manipulation Potential if Written Imprecisely (and sometimes if written well)

IT Constraints

- Much more prevalent than originally anticipated
- Often years to make changes
- Unanticipated outcomes can result in wrong price outcomes and open door for manipulation

Public Policy / Political

- RPS
- Bid / Price Caps
- Planning Responsibilities
- Retail Pricing Policy

The Case of the Missing Money



- Theory says that the market should have enough revenues to encourage new entry when supplies are tight
- Bids generally limited to marginal costs
- Reserve Margin Requirement
- Shortages are Inconceivable

Ways to Address “Missing Money”



- Capacity Markets
- Scarcity Pricing
- Demand Response Triggers

Capacity Markets

- ✓ De we need?
- ✓ Locational
- ✓ Time Duration
- ✓ Demand Curves
- ✓ Lumpiness

Demand Response

- ▶ Disconnect between wholesale and retail price
- ▶ Volatile Commodity Price

Success of RTO's

- Open Access
- Power Plan Operations
- Risk Shifting
- Cooptimization
- Price Signals at Wholesale Level
/Locational Signals

How has mission creep expanded or burdened the mission focus?

- Inadequate (or perhaps naïve) expectation that RTO's could function separate from public policy considerations.
- Expanded and burdened

What have been the major problems and hiccups along the way?

- Market Manipulations
- Imperfect Competition
- Getting the Seams Right
- Clunky Governance

If we could roll back the clock, what would we do differently?

- Better market monitoring/ financial settlements capability before start up
- Treatment of nuclear facilities

What are the most pressing challenges ahead for both operations and governance?

- More diversified system (demand response, on-site generation, increased penetration of renewables, smart grid, energy storage)
- Can rules and market models adopt?
- Are all voices being heard and considered in governance process?
- This is “rocket science”