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# Regulatory Institutions Roles & Powers

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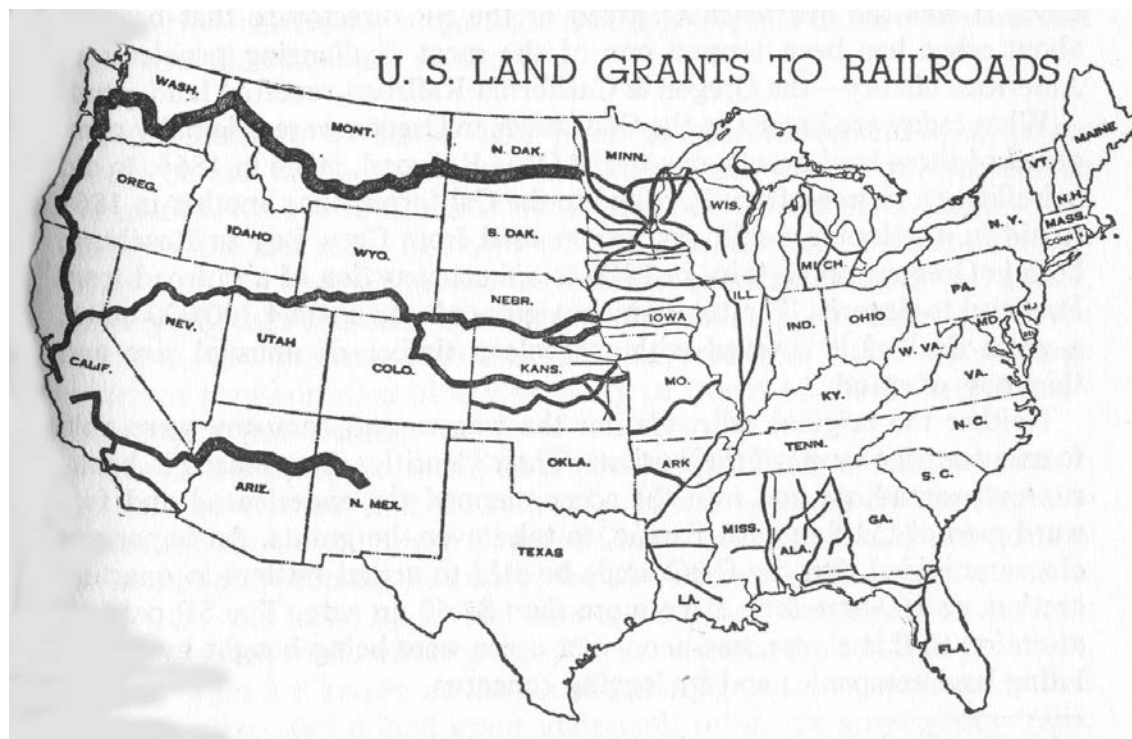


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- Economic regulation of privately-owned utilities formed in response to a series of major crises about railroads:
- Speculation
  - After the U.S. Civil War (1860s), the country turned its attention to developing transportation networks to link the rural western United States with the coasts
  - Government & investors were over-ambitious: In 1840, there were 6,194 people per 1 mile of RR; by 1880, 571; by 1890, 375.





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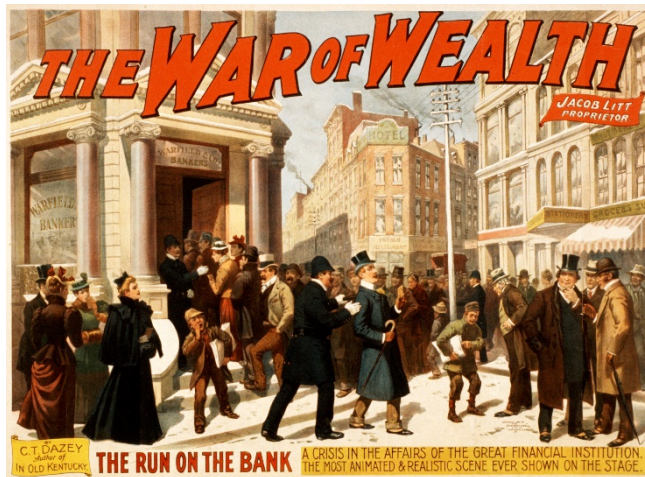
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## • Corruption & Insider Trading

- Many of the railroads were not corporate vehicles “devoted to the efficient sale of transportation but rather corporate containers for financial manipulation and political networking” (Richard White)
- In 1873, a financial crisis that had begun in Europe reached America. The first industry to tumble was the railroads.

» The problem:

- » Government subsidies and small-investor money were used to fund a railroad, on the promise of a fixed return (similar to bonds).
- » This capital would then be further leveraged through a complex financial instrument.
- » Proceeds, in turn, would be used to pay back the fixed return and also to pay dividends on stock and high interest rates on bonds held by large private investors, who would control the company.



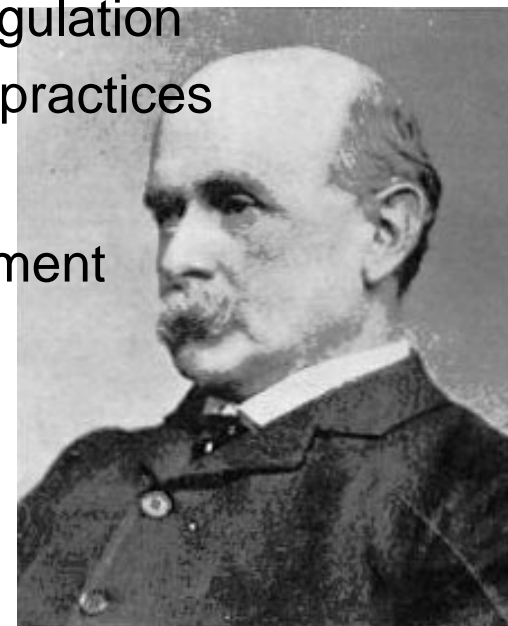


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- “Corruption” and “Monopoly” became synonymous in late 19<sup>th</sup> century United States
- Political reaction: throughout the States, government commissions were created:
  - Early attempts were “sunshine commissions”: able to “name and shame” but with no coercive powers of regulation
  - Eventually had power to regulate rates & practices
- Commissions were intended to be:
  - Independent of other branches of government
  - Experts in the field
  - Investigatory



Charles Francis Adams  
*Railroad Commissioner  
Massachusetts*



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## The Beginnings of Economic Regulation

- In early 1900s, states began to give their commissions additional, coercive powers.
- Powers of State Commissions expanded from Railroads to Electric and Natural Gas Utilities.
- Safety regulation gave way to *Economic* regulation.
- Although there are 50 states, and several other self-governing jurisdictions, many state laws share identical language concerning the basic principles of ratemaking.





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## “J&R” & Undue Discrimination

- The laws that empower Commissions (both federal and state) to create the rates that electric and gas utilities charge are deceptively simple. Their two foundational principles are:
  - **Just and Reasonable Rates.** Almost all utility regulation statutes at the state and federal level have a generic formulation that “all rates and charges...shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful” (Sec. 205, Federal Power Act)
  - **Undue Discrimination.** Likewise, nearly all statutes prevent rates or practices that are unduly preferential or discriminatory



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## Theory...

- Economic regulation is a substitute for competition.
- Theory: A liquid, competitive market would cause the price of products to be equal to the long-run cost of making them
- Therefore, most U.S. economic regulation is based on the idea that ***the price of a monopoly's product should be the cost to produce it.***



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## ...and Practice

- Most economic regulators in the United States calculate a total amount of revenue or “Revenue Requirement” that is equal to a monopoly’s annual cost to produce/deliver its product.

$$RR = O + T + D + r(RB)$$

- O= Operating Expenses
- T = Taxes
- D = Annual depreciation expenses
- r= fair rate of return (weighted cost of capital)
- RB= Rate Base
  - **value of utility plant assets** minus **accumulated depreciation**





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## ...And More Practice

- The “Revenue Requirement” is then broken apart in specific prices, or “tariffed rates,” for services, such as a kilowatt-hour of electricity.
- After those prices are fixed for monopoly products (based on an attempt to match *past costs* to *past sales volumes*), there will inevitably be changes to both *costs* and *sales volumes*. U.S. regulators employ many other mechanisms to track these deviations.
- In addition, monopolies will be incented to cut costs to make more profit. That’s a good thing—usually—because it promotes economic efficiency, even in a monopoly.
- However, if cost-cutting affects quality of service, that is a bad thing. Thus, U.S. regulators also have measures of “quality of service” in addition to price-setting as part of their regulation



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## Other Legal Standards

- Are transactions in the “Public Interest”?
  - mergers and acquisitions
  - licensing/siting & certificates to operate
- Is utility spending...
  - Used & Useful (for capital assets)
  - Prudently Incurred (for expenses)



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## The Role of Competition

- Telecommunications, trucking, and railroads have been substantially “de-tariffed”
  - no longer subject to economic regulation as described above
  - focus on competition policy & fair trade practices
- Restructuring of electricity and natural gas utilities
  - “Market-based rates” considered Just & Reasonable for wholesale transactions.
  - In 2/5ths of states, retail choice policies allow consumers to pick a provider of electricity.



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## Let's Talk Institutions...beginning with NARUC

- Established in 1889 – we are celebrating our 129<sup>th</sup> Anniversary.
- It represents the 50 state public utility commissions (PUCs), and the District of Columbia and Territories,
- Provides educational training to Commissions and publishes manuals that advise on the best practices for the regulation of utilities.
- Advocates before federal agencies and the Congress
- Works with regulators internationally to improve utility regulation.



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## State Public Utility Commissions

- Each of the 50 U.S. states has a commission that economically regulates utilities.
  - Appointed vs. elected
  - Number of members ranges from 3 to 7 commissioners
  - All told, the U.S. has about 200 state utility commissioners, with 8,000 staff
- Jurisdiction usually includes “cost-of-service” & “quality of service” regulation of investor-owned firms **distributing** basic utility services (electric, gas, water).
- State commissions often have some oversight over:
  - Generation of electric power (esp. in vertically integrated states)
  - Some telecommunications (“landlines”)
  - Motor carriers (taxis, limousines, garbage haulers, moving companies)
  - Miscellaneous other industries: grain terminals, ferries, railroads (for safety), even cemeteries!



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## Regulation by Federal Government

- The United States Constitution provides that only the federal government may regulate commerce between states.
- Over the years, the U.S. Congress has defined more and more topics (railroads, gas pipelines, electric transmission lines) as being part of “interstate commerce” —even while it has sometimes delegated its powers to states to implement those laws.



Congress shall have the power “to regulate Commerce with foreign Nations, and among the several States, and with the Indian Tribes.” Art. I, Sec. 8, Cl. 3





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- The two main federal authorities in the electric power sector are:
  - The Federal Energy Regulatory Commission
  - The North American Electric Reliability Corporation
- However, there are other agencies that affect the electric power sector dramatically:
  - The Environmental Protection Agency, which issue rules regulating the emissions of power plants.
  - The Nuclear Regulatory Commission, which regulates and licenses nuclear reactors, materials and waste disposal
  - The U.S. Department of Energy
  - Bonneville Power Administration, the Western Area Power Administration, the Southeastern Power Administration, and the Southwestern Power Administration: 4 federal agencies which own large parts of the electric transmission grid and market power from federally owned dams
  - The Army Corps of Engineers, which owns and operates many federal hydroelectric power plants



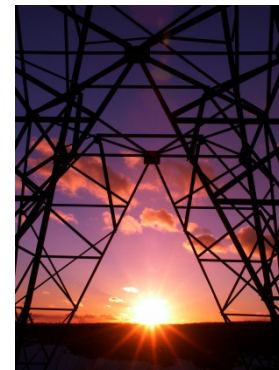
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## Federal Energy Regulatory Commission (FERC)

- Regulation of wholesale sales of electricity and transmission of electricity in interstate commerce
- Oversight of mandatory reliability standards for the bulk power system
- Promotion of strong national energy infrastructure, including adequate transmission facilities
- Permitting/licensing of LNG, gas pipelines, and Hydroelectric facilities





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- FERC & Electric Reliability
  - Mandatory reliability and security standards
  - The Commission monitors and directs the Electric Reliability Organization (ERO), which is NERC
  - Users, owners, and operators of the bulk power system (~100+ kV)



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# Gas Pipeline & Liquid Natural Gas (LNG) Export Terminals

- Regulation of pipeline transportation, storage, facility construction and abandonment
- Interstate regulation of natural gas transportation
- Establish rates for transmission services





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# Hydroelectric Licensing & Safety

- Licenses for new construction
- Licenses for the continuance of existing projects (relicensing).
- Conducts oversight of ongoing project operations, including dam safety inspections and environmental monitoring.
- Environmental Impact Statements





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# NERC



- Established 1968
- 2000 - NERC appointed primary point of contact with US government
- August 8<sup>th</sup> 2005 - US Energy Policy Act
- July 20<sup>th</sup> 2006 - NERC appointed “electric reliability organization” with FERC oversight
- June 18<sup>th</sup> 2007- Compliance with North American Electric Reliability Corporation standards becomes mandatory and enforceable





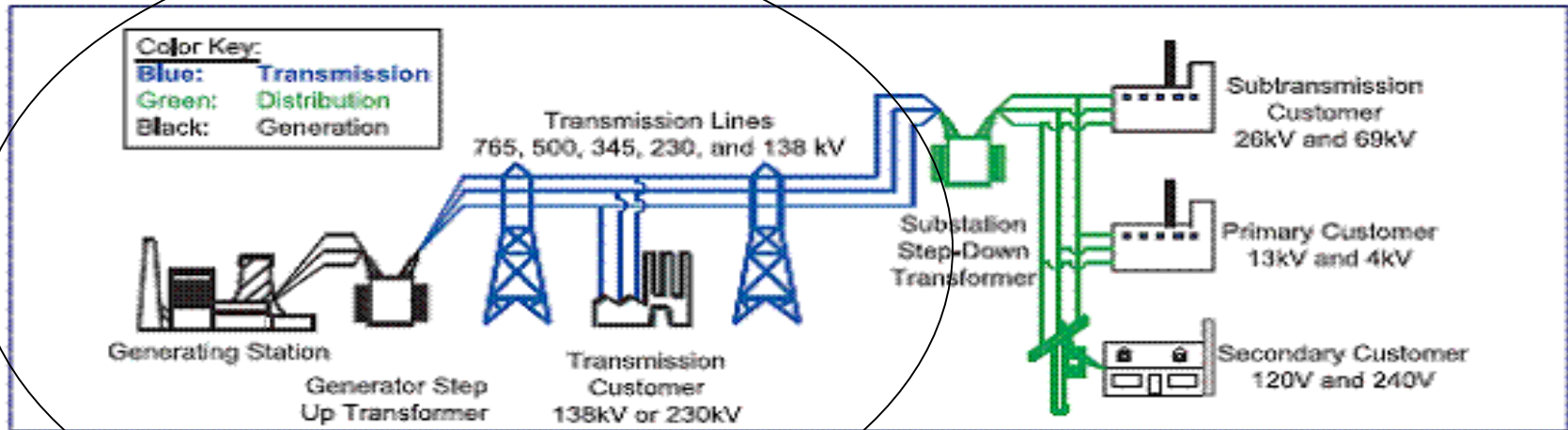


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# NERC's Area of Influence: The Bulk Electric System



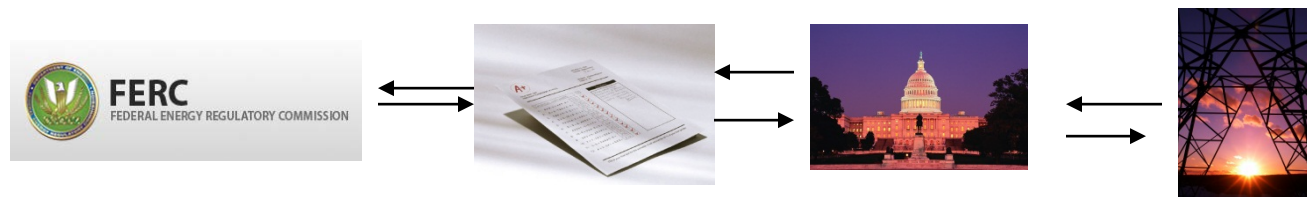


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## How do FERC/NERC Fit Together?



- FERC suggests regulation or policy
- NERC, non-government, works with industry to establish standards that will fulfill compliance with FERC regulations/policy
- FERC may veto NERC
- NERC also has oversight over regional reliability entities throughout North America



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## Thank you! – Questions?

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