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## **Coordinating Regulation of the Gas and Electric Industries: What are the Benefits? What are the Options?**

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- I. Five Commercial or Physical Relationships Between Gas and Electricity**
- A. Gas is an input to electricity production: Questions arise concerning price volatility, supply reliability, efficiency of usage (heat rate in electricity production), and the best use of scarce gas resources.
  - B. Electricity is an input to gas production, transportation, and distribution.

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- C. Gas and electricity are competitors in retail service. Customers have switching capability (some in the short term, many more in the long term).
- D. Gas and electricity can be a single "energy service" product. Residential customers especially can view "energy service" as their consumer objective.
- E. Gas and electricity are competitors for capital.

## II. Seven Regulatory Challenges Common to Gas and Electricity

- A. **Purpose of regulation:** To align private behavior with the public interest; to induce high-quality performance by the regulated utilities
- B. **Market structure:** Who is permitted to sell what products, and under what rules?

- 1. *Monopoly market or competitive market?*

The "central, continuing responsibility of legislatures and regulatory commissions" is "finding the best possible mix of inevitably imperfect regulation and inevitably imperfect competition."

A. Kahn, *The Economics of Regulation: Principles and Institutions*, Vol. I, Introduction at xxxvii; Volume II at 114 (1970; 1988 edition).

Considerations include:

- a. economies of scale and scope (taking into account physical, commercial and consumer characteristics)
  - b. relationship between static efficiency and dynamic efficiency
  - c. regulatory agency's ability to convert and manage the transition
  - d. possibility of different answers at the retail and wholesale levels
- 2. *Processes for introducing competition:* Subjects include "unbundling," mandating access to "bottleneck facilities," reducing entry barriers, and creating and applying metrics to measure competitiveness.

3. *Role of "bottleneck facilities"*: Subjects include the economic and physical features of a bottleneck facility; challenges in granting access to newcomers while preserving benefits paid for by historic customers.
4. *Asset ownership and corporate structure*: Should regulators allow a player to engage in both competitive and noncompetitive services, and/or in unrelated services?
5. *Vertical integration and divestiture*: Regulators must address the tension between two factors: the efficiency and reliability benefits of vertical integration, and the pain of regulating monopoly ownership of assets that are competitively strategic.

**C. Quality of service:** What level of performance does the regulator require?

1. Since regulation is about performance, regulators must judge performance. "Cost" is an imprecise and potentially inaccurate measure, because "low-cost" could mean avoiding expenditures necessary for quality, in the short term and long term.
2. Regulators therefore must define, in both and gas industries—
  - a. *the obligation to serve*: What products, at what quality level, must the provider provide? To whom?
  - b. *reliability*: What are the expectations and the measurements?
  - c. *customer service*: What are the expectations and the measurements?
  - d. *innovation*: Is "average" performance acceptable, or must the providers be innovators? If the regulated entity has no obligation to innovate, then what is the path for innovation?

**D. Cost recovery:** How does the regulator (a) create a flow of dollars from the customer to the utility, sufficient to attract capital, while (b) conditioning that dollar flow on high-quality performance?

1. The central tension in cost recovery is the tension between financial viability and commercial performance. Capital markets insist on a predictable flow of dollars sufficient to retire debt and earn a reasonable return on shareholder investment. Regulators are supposed to insist on high-quality performance.

2. What happens when the regulator imposes financial penalties for low-quality performance?

**E. Infrastructure planning**

1. Utilities must plan their infrastructure, both physical (production, transportation, and distribution assets) and human resource (e.g., work force development).
2. Regulators must create processes, such as "scenario planning" and "integrated resource planning," that support utility planning with regulatory decisions that the providers can "take to the bank."

**F. Procurement practices:** Procurement of inputs such as fuel involves volatile costs. Insurance against volatility is available through hedging. Regulatory decisions must give guidance on what utility procurement actions and hedging actions are acceptable.

**G. Consumption efficiency:** Regulators regulate sellers, not buyers. But consumer behavior is now receiving more attention from regulators because consumer behavior affects utility costs.

1. *Rate design*—what customers pay and what they get—involves the methods of allocating responsibility for fixed costs and variable costs.
2. *Revenue decoupling* accommodates the dual goals of reducing consumption while maintaining the utility's financial viability.
3. *Efficiency programs*, whether run by the utility or by third parties, conflict with the traditional utility instinct, and imperative, to sell more. Regulators must resolve this conflict.

**III. Regulatory Infrastructure: Professional Skills Required to Regulate Both the Gas and Electric Industries**

**A. Economics**

1. What rate designs cause what behavioral changes in customers?
2. What are the economies and diseconomies of scale for the various components of utility service—production, transmission, distribution, customer relations?
3. What are the economies and diseconomies of scope among various utility and nonutility activities that might take place in the same corporate family?

**B. Engineering**

1. What are the physical capabilities of the various stages of production and delivery?
2. What are the feasible sizes of the various physical components? How does unit cost change with size?
3. What are the innovation breakthroughs necessary to increase efficiency of production, transportation, and delivery?
4. There are reports of shortages in skilled crafts necessary for electricity plant construction and maintenance, among other things. Is it necessary to identify these shortages, company by company, so as to ensure that corporate managers devote resources to the problem prior to putting resources into nonutility businesses?

**C. Finance and accounting**

1. What are appropriate mixes of finance sources for the various businesses within a utility company? How does the appropriate mix vary depending on business responsibilities and market conditions?
2. In corporate acquisitions, there is a risk of financial circularity: the acquiring company pays a premium for a utility, knowing that the premium can be recovered from monopoly ratepayers. Premium payments are capped less by market forces (where product prices limit what the acquirer will pay for the acquisition) than by predictions of success persuading regulators to allow the premium in rates. Given this risk, what methods exist for determining the appropriate size of acquisition premia? What regulatory policies best line up the acquirer's desire to pay a premium, the acquiree's insistence on a premium, and the ratepayer's legal right to protection from rate increases associated with the premium? (Such policies should encourage efficient mergers—meaning mergers that lower costs—and discourage inefficient mergers.)

**D. Law**

1. Do present statutes accommodate the full range of regulatory options?
2. What commission procedures are most likely to answer these questions effectively? Options are rulemakings, policy statements, case-by-case adjudication.

**IV. Risks of Regulatory Non-Coordination**

**A. Confusion of purposes**

1. Encourage production or discourage production?
2. Increasing an industry's market share vs. insisting on cost-effectiveness

**B. Reduced independence**, as the dominant industry has excess influence over the regulatory agency

**C. Reduced objectivity**, if the regulatory agency becomes an advocate for a particular industry instead of an advocate for objective engineering and economic principles geared toward the goal of high-quality performance

**D. Inconsistent policies** on market entry and exit, rate design, consumption efficiency, performance, and cost recovery

**E. Failure to learn lessons**, such as in the transitions from monopoly to competition, and in missed opportunities to achieve inter-sector efficiencies

**F. Regulatory uncertainty** in both industries, if it becomes unclear which principles and precedents applied to one industry will apply to the other

**V. Benefits of Regulatory Coordination**

**A.** Common staff for both industries can provide analysis more efficiently than two separate staffs.

**B.** A common staff obligated to master the differences between two industries will become more nimble intellectually.

- C. If a company provides both services (electricity and gas), there is more assurance of consistency, as well as attention to the company's productivity factors and financial health.
- D. To the extent that the two products compete, coordination avoids inconsistency that can cause distortion of the competitive market.
- E. Caution: It is necessary to avoid applying too casually the precedents from one industry to the other. We can avoid this problem if the agencies have experts in each industry as well as generalists familiar with both industries.

**VI. Options: Given the Benefits of Coordination, Is It Necessary, Desirable, or Undesirable for Coordination to Occur Through a Multi-Sector Agency?**

**A. Options without agency merger**

- 1. Have each agency comment on the major initiatives of the other. Should this step be mandatory or voluntary?
- 2. In addition to (or instead of) the separate staffs of each agency, create a single dual staff with responsibility for advising both agencies on coordination opportunities.
- 3. More formally, create a process by which a third entity is obligated to identify opportunities for coordination and risks of non-coordination. This entity would have a statutory mandate that discourages inconsistencies that impede the common regulatory mission of efficient, reliable delivery of service at reasonable cost.

**B. Options with agency merger**

Note: Some of these options can overlap; they are not all mutually exclusive.

- 1. Retain existing separate statutes? Or create a common statute with some specifics related to the specific industries?
- 2. Agency merger with separate technical divisions but common commissioners and common staff for law, economics, and management?

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For over 25 years, Scott Hempling has provided legal and policy advice to public and private sector clients involved in regulated industries. His research emphases include mergers and acquisitions, the introduction of competition into formerly monopolistic markets, corporate restructuring, ratemaking, utility investments in nonutility businesses, and state-federal jurisdictional issues.

Mr. Hempling received a B.A. *cum laude* in (1) Economics and Political Science and (2) Music from Yale University, where he was a recipient of a Continental Grain Fellowship and Patterson research grant. He received a his J.D. *magna cum laude* from Georgetown University Law Center, where he was a recipient of an *American Jurisprudence* award for Constitutional Law.

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Mr. Hempling's articles publications include "Joint Demonstration Projects: Options for Regulatory Treatment," *The Electricity Journal* (June 2008); "Corporate Structure Events Involving Regulated Utilities: The Need for a Multidisciplinary, Multijurisdictional Approach," *The Electricity Journal* (Aug./Sept. 2006); "Reassessing Retail Competition: A Chance to Modify the Mix," *The Electricity Journal* (Jan./Feb. 2002); *The Renewables Portfolio Standard: A Practical Guide*, National Association of Regulatory Utility Commissioners (with Nancy Rader) (Feb. 2001); *Promoting Competitive Electricity Markets Through Community Purchasing: The Role of Municipal Aggregation*, American Public Power Association (with Nancy Rader) (Jan. 2000); *Is Competition Here? An Evaluation of Defects in the Market for Generation* (National Independent Energy Producers, Jan. 1995) (co-author); *The Regulatory Treatment of Embedded Costs Exceeding Market Prices: Transition to a Competitive Electric Generation Market* (Nov. 1994) (co-author); "Depolarizing the Debate: Can Retail Wheeling Coexist with Integrated Resource Planning?," *The Electricity Journal* (Apr. 1994); and "Making Competition Work," *The Electricity Journal* (June 1993).

Mr. Hempling has taught electricity law to thousands of students at the introductory and advanced levels. Attendees at his courses have come from all 50 states and from all sectors and professional disciplines within the electric industry. More information is available at [www.nrri.org](http://www.nrri.org).