

## **Full-Cost Pricing**

© Janice A. Beecher, Ph.D.

Institute of Public Utilities, Michigan State University

Presented at the 2007 National Drinking Water Symposium

La Jolla, California ▪ October 1-2, 2007

[beecher@msu.edu](mailto:beecher@msu.edu) ▪ [ipu.msu.edu](http://ipu.msu.edu)

### **Rising costs and price pressure**

- › The water industry is a “rising-cost” industry, with prices rising faster than the rate of inflation.
- › Costs are associated with infrastructure replacement, regulatory compliance (treatment), and population growth (for some areas).
- › Labor, energy, and chemicals are major operating expenses.
- › For many systems, rising costs are coupled with flat or declining demand (conservation), another source of price pressure.
- › Water demand is relatively price inelastic; however, large-volume and discretionary use may fall due to price response.
- › Water customers experience the combined and regressive effect of water, wastewater, and stormwater charges.

### **Challenges of full-cost pricing**

- › Full-cost water pricing is essential for sustainability, as well as economic efficiency; accurate price signals encourage efficient production and use.
- › In the absence of full-cost pricing, subsidies can flow to or from water systems and sustainability is questionable.
- › Regulated water utilities, many of which are nongovernmental, are likely to charge customers for the full (accounting) cost of service.
- › Many government-owned (but not all) water systems are reluctant to charge the full cost of service through rates.
- › Census Bureau data illustrate a persistent gap between expenses and revenues for water and wastewater services (comparatively).
- › Ratemaking can be politicized (“willingness to charge” and “NIMTO”), which may play a role in cost avoidance, including investment deferrals.
- › Cost allocation and rate design are technical skills; political skills are needed too (communications, participatory processes, and accountability).

### **Subsidies**

- › Subsidies are common in the U.S. political economy to address market failure and promote social goals.

- › Subsidies may be more obvious (grants) and less obvious (federal projects, tax breaks, intergovernmental transfers).
- › Subsidization of costs for “marketable goods” (as compared to public goods), reflects inefficiency (loss of social welfare).
- › Subsidies allow for under-pricing, which in turn will be associated with over-consumption (“watering in the rain”).
- › Subsidies should be made explicit and understood, particularly with respect to which activities are subsidized, who benefits, who pays, and consequences (i.e., inefficiency).
- › Subsidies can be more or less efficient (systems v. households).
- › Accounting and reporting systems should provide transparency for public disclosure and full and fair debate.

### **Structural opportunities for water**

- › The fragmented structure of the water industry has implications for costs.
- › Many water systems are very small and lack scale economies, which are especially apparent in central treatment.
- › Local control of water systems comes at a price; in many cases, regional solutions would be potentially advantageous.
- › Regional solutions require workable and accountable governance structures, as well as accepted pricing (spatial differentiation)
- › A variety of ownership options are also available to water systems; these include public, private, and nonprofit forms and also hybrid forms, such as municipal corporations and contractual arrangements
- › The private sector offers financial capital for meeting infrastructure investment needs, as well as expertise and regionalization potential, but income taxes and returns on equity must also be paid.
- › Privatization is not competition and economic regulation is essential.

### **Economic regulation**

- › Forty-five state commissions regulate water systems; about a dozen have some jurisdiction for nonprivate systems, but authority varies.
- › Economic regulation emphasizes cost-based pricing and provides a system of accountability and incentives.
- › For regulated private utilities, concerns about *over*-investment usually outweigh concerns about *under*-investment.
- › Regulation provides a significant degree of stability for investors in infrastructure-intensive industries.
- › An important building-block of regulation is the NARUC uniform system of accounts, which provides for essential “cost knowledge” – many unregulated systems actually follow this system.
- › Expanded regulatory jurisdiction, modified as appropriate, would promote full-cost pricing , depoliticize ratemaking, increase accountability.

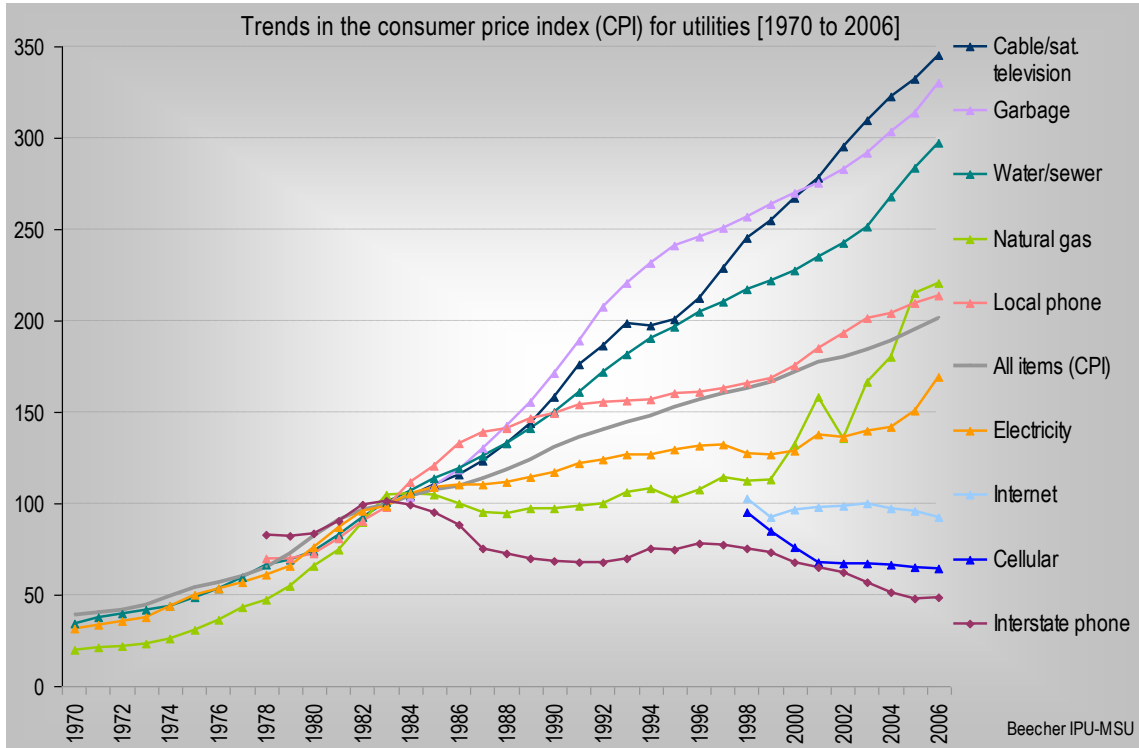
- › Regulation can be (and has been) adapted and modified to meet industry needs, including differences between private and public systems.

### **Implementing full-cost pricing**

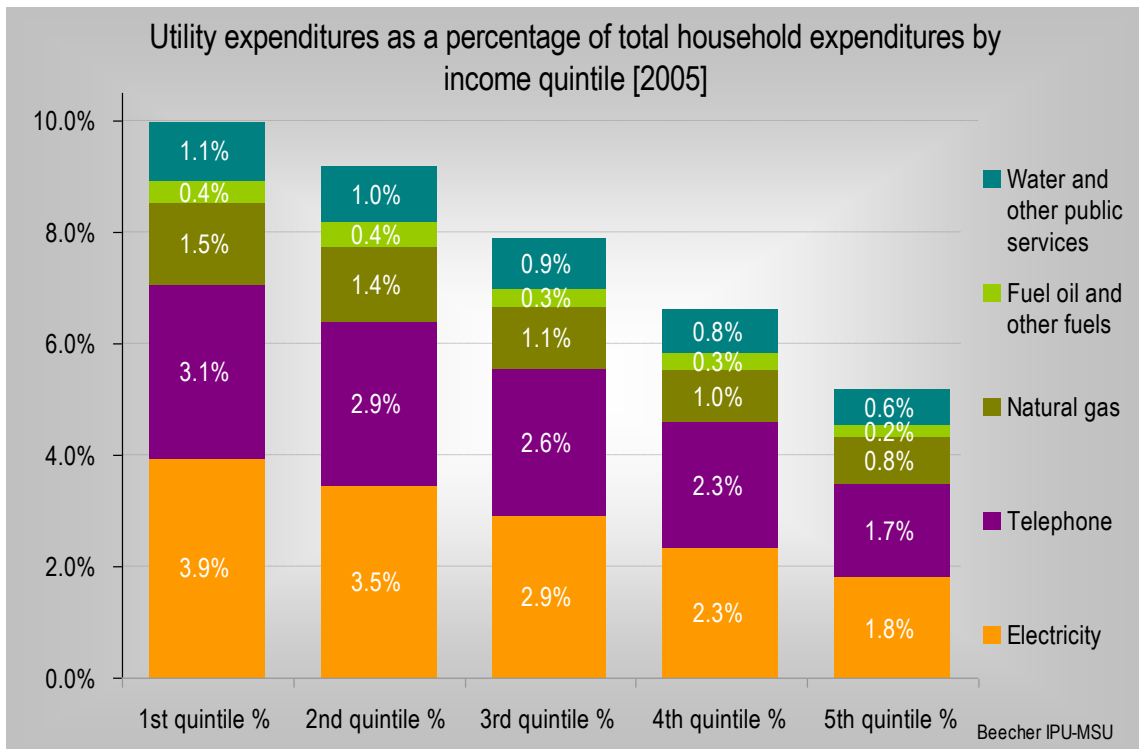
- › The ratemaking process involves the allocation of costs to customers.
- › Many good educational resources are available to water systems.
- › In ratemaking, the different stakeholders of the process see it differently.
- › Utility costs are regressive and affordability is a legitimate concern.
- › All ratemaking involves averaging for classes (groups) and judgment.
- › A well designed rate can achieve multiple policy goals.
- › Pricing can be coupled with nonprice programs.
- › Different types of rates can achieve full-cost pricing (marginal-cost)
- › Metering and billing systems support better pricing, but not every technically feasible option is economically or socially desirable (time-of-day pricing for water)
- › Techniques can be used to help implement changes in water rates, including communication, information, and phase-in plans (“gradualism”).
- › Rate design need not be overly complex or expensive in order to be effective in achieving policy goals, including full-cost pricing.

### **Special issues in costing and pricing**

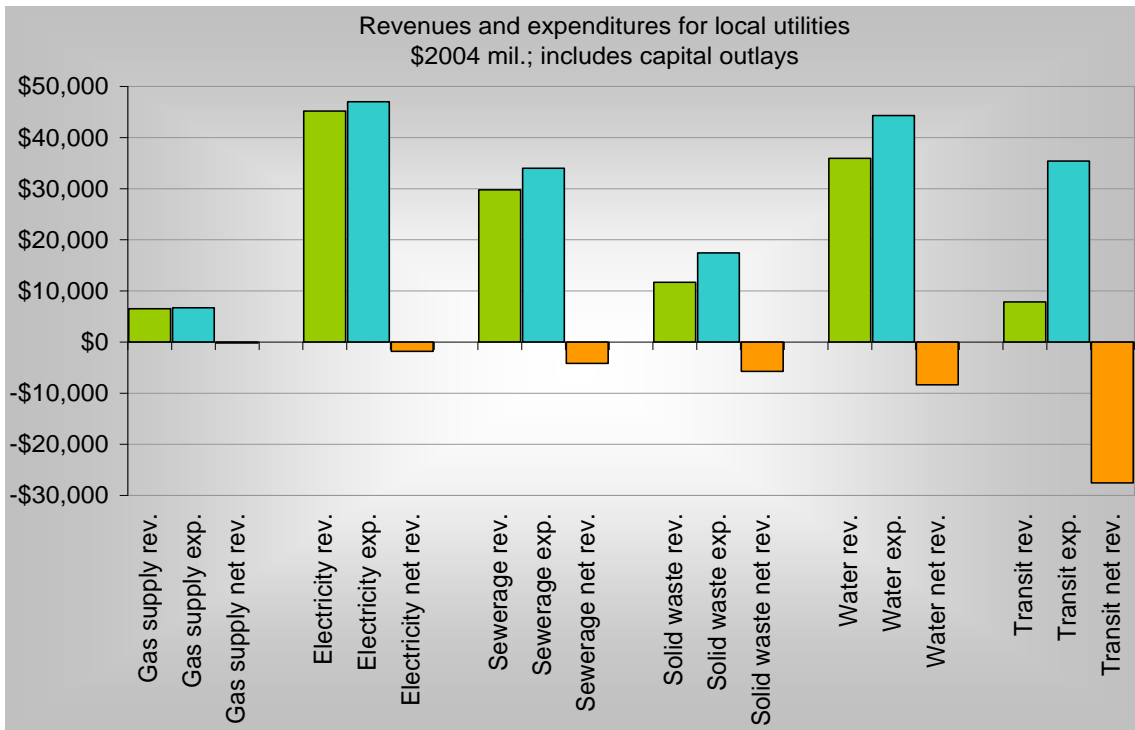
- › Controlling rising costs across all functions
- › Allocating costs over flat or declining demand
- › Allocating costs inter-generationally
- › Allocating costs across types of usage (discretion, class)
- › Reducing subsidies and associated inefficiency
- › Improving accounting and accountability
- › Sustaining water resources within watersheds
- › Balancing efficiency and affordability
- › Exploring innovative and alternative technologies
- › Addressing water needs of the energy sector



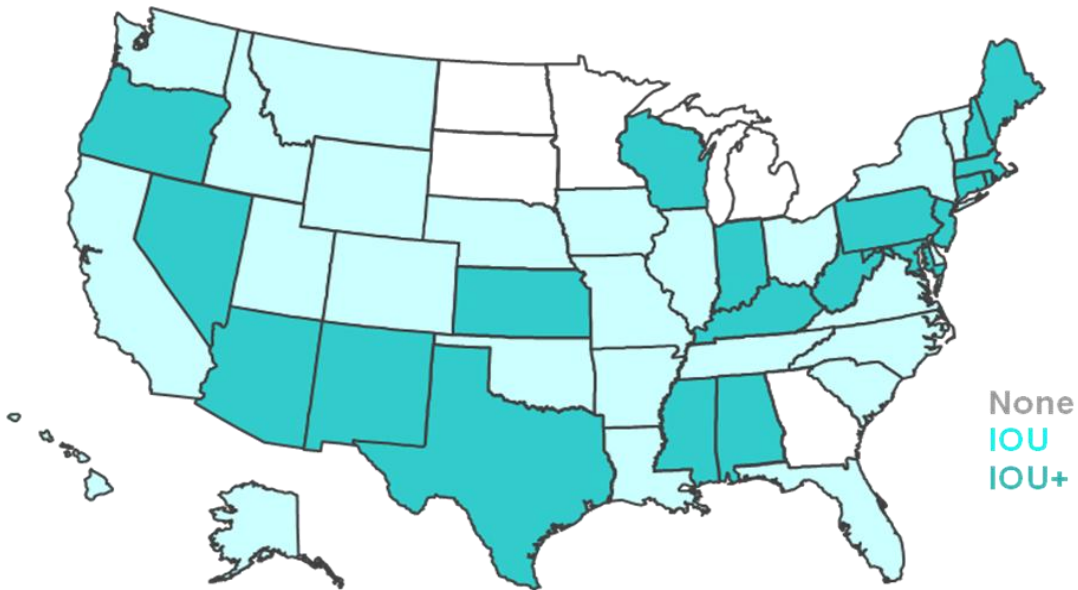
Source: U.S. Bureau of Labor Statistics.



Source: U.S. Bureau of Labor Statistics.



Source: U.S. Census Bureau.



Source: Survey by Beecher. States without shading have no jurisdiction; with darker shading have jurisdiction beyond investor-owned.