HARVARD LAW SCHOOL
Environmental Law Program
POLICY INITIATIVE

Distributed Energy Resources and Public Utility Regulation

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Why DERs?

- *Edison Electric Institute:*

Electric system benefits (e.g. cost savings) attributable to DG can include energy, capacity, transmission and distribution system deferral, and line loss reductions, as well as environmental and other benefits as assessed in each jurisdiction.

What Is Utility Regulation?

- Economist Alfred Kahn: "The essence of regulation is the **explicit replacement of competition with governmental orders** as the principal institutional device for assuring good performance."
- What is "good performance"?
  - Price?
  - Service quality?
  - Innovation?

How Does Regulation Work? Utility Ratemaking Process

Two-Step Process

1. Establish the Revenue Requirement
2. Set the Rate Design

- Revenue requirement reimburses utility for its operating expenses and provides **a rate of return on capital investments**.
- Rate design allocates the revenue requirement.

Utility Ratemaking Process

<u>Two-Step Process</u>

1. Establish the Revenue Requirement
2. Set the Rate Design

Court decisions have historically focused on step 1:

- Are rates confiscatory? Or do they over-compensate?
  - What costs are properly included/excluded?
  - What is an appropriate rate of return?
  - Legal standard: “fixing ‘just and reasonable’ rates involves a balancing of the investor and consumer interests . . .”

Rate Design: How Closely Must Rates Align with Costs?

Alfred Kahn: "The central policy prescription of microeconomics is the equation of price and marginal cost."

BUT

Regulators do not set retail rates at marginal cost because:

- Marginal cost rates would not recover the utility's revenue requirement and
- Public policy reasons.

Rate Design: How Closely Must Rates Align with Costs?

- *Professor James Bonbright*:

Marginal cost is itself a highly ambiguous term.

- *NARUC Cost Allocation Manual:*

There is considerable difference of opinion as to whether short-run or long-run marginal cost is appropriate for use in cost allocation.

Rate Design: How Closely Must Rates Align with Costs?

- What are marginal costs?
  - Are they long-term or short-term costs?
  - How do they value externalities? Which ones?

Rate Design: How Closely Must Rates Align with Costs?

- *Professor Alfred Kahn*:

It is not simple matter to measure marginal costs – that is probably the understatement of the year.

Rate Design: How Closely Must Rates Align with Costs?

Jean Tirole:

Regulators face a double asymmetry of information:

1. Regulated firms have superior knowledge about the cost of their inputs and the demand for their products and services.
2. They take actions that affect cost and demand.

Regulatory Assistance Project (RAP):

There are as many way of [allocating costs] as there are analysts doing cost-allocation studies.

Rate Design: How Closely Must Rates Align with Costs?

- How do we calculate marginal costs?
  - Data comes from the utility.
  - No agreement on how to allocate costs to ratepayer groups.

Rate Design: How Closely Must Rates Align with Costs?

U.S. Supreme Court –

Allocation of costs is not a matter for the slide-rule. It involves judgment on a myriad of facts. It has no claim to an exact science (1945).

Rate Design: How Closely Must Rates Align with Costs?

- There are numerous “cross subsidies” embedded in utility rates.
- When you hear that DERs cause cross subsidies:
  - Compare them to other cross subsidies;
  - Ask if the measure of cross subsidies account for the full range of costs and benefits?
    - Cost-benefit studies can identify the most beneficial opportunities for DER deployment.

Principles for DER Deployment

1. Maximize long-term benefits.
2. Scrutinize cross-subsidy claims.
3. Recognize that the broader public interest may not always align with the utility’s private interest.
4. Price is an important tool to achieve policy goals but not the only mechanism for encouraging innovation and competition.