

Distribution Tariffs and Energy Efficiency: Aligning Financial Incentives and Public Policy Objectives

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Statement of the Problem

1. Traditional tariff methodology links profitability to volume of sales, not efficiency
2. Efficiency gains in use of electricity means lost sales, and therefore, reduced profits for distributors
3. Thus, companies have incentive to promote consumption and discourage end use efficiency

Illustration Of Problem In Common Tariff Methodologies

- Rate of Return
 - Capital Investment – Depreciation (Rate of Return) + Expenses

- Price Cap
 - Cost Basis (RPI-X)

Illustration Of Problem In Common Tariff Methodologies (con't)

Common Denominators of Rate of Return and Price Cap

1. More Sales = More Revenues = Greater Profits
2. End Use Efficiency Gains = Less Revenues = Lower Profits
3. Profitability Inextricably Linked to Sales
4. Company Biased Toward Supply Side Options
5. Supply Side Efficiency Gains Internalized
6. Price per unit of Consumption is Regulated Variable

Scale And Scope Of Problem

- Exacerbated by vertical integration
- Distorts planning toward supply side options
- Certainty of supply options vs. Uncertainty of demand response
- Demand side options individualized / supply side socialized (possibility of cross subsidy?)

Barriers To More Effective Demand Side Measures

- Entry Barriers for Load Aggregators (i.e Barrier to Competition)
 - Marketing Costs
 - Customer Access Difficulties
 - Absence of Demand Side Bidding Opportunities
- Poor Price Signals Remove Incentives for Demand Side Investment By Users?
 - Real Time Price Information?
 - Prices Fully Reflective of Costs?
 - Fixed / Variable Cost Allocation?
 - Cross Subsidy Distortion of Price Signals?

Options For Alleviating The Disincentives For Demand Side Investment

Adjustments to Traditional Regulatory Treatment of Investments

Identical Treatment for all Capital Investment

or

Incentive Treatment for Desired Investment (e.g. Accelerated Recovery or Higher Return or Altered Fixed/Variable Cost Allocation)

or

Differential Treatment for Socialized Assets versus Individualized Assets

or

Adjust X Factor to Internalize Demand Side Efficiency

or

Establish Mandatory Efficiency Programs or Spending

Critique Of Adjustments To Traditional Treatment Of Investments

Identical treatment for all capital investment

- Biased toward supply side options
- Weak incentives for efficient management and resource selection

Incentive treatment for desired investment (e.G. Accelerated recovery or higher return or altered fixed/variable cost allocation)

- Government/ regulatory record in picking resource and technology winners

Critique of Adjustments to Traditional Treatment of Investments (con't)

Differential Treatment for Socialized Assets versus Individualized Assets

- Risk of Undue Discrimination
- Risk of Price Distortions and Cross Subsidies

Adjust X Factor to Internalize Demand Side Efficiency

- Risk of Arbitrariness
- Confusing Signals

Establish Mandatory Efficiency Programs or Spending

- Risk of Arbitrariness
- Requires Rigorous Regulatory Oversight to Enforce

Neutralizing Supply And Demand Incentives: Revenue Cap Tariff Methodologies

Pure Revenue Caps

- System for setting prices charged where total revenue, not price per unit consumed, is the regulated variable
- Cost Basis (RPI-X) *Capped* at Revenue Requirement

Adjusted Revenue Caps

- Same as pure revenue caps except that tariffs are adjusted at pre-determined time intervals to compensate for lost sales, by assuring revenue requirement
- Cost Basis (RPI-X) *Assured* at Revenue Requirement

Attributes Of Pure Revenue Caps

- Sales volume and profitability are unlinked
- Distributors' incentives neutralized between supply and demand side options
- Financial result linkage to performance largely internalized (i.e. risk of not obtaining revenue requirement)
- External factors (e.g. weather, macro economy) normalized

Attributes Of Adjusted Revenue Caps

- Sales volume and profitability are unlinked
- Distributors' incentives neutralized between supply and demand side options
- Financial result linkage to performance largely externalized (i.e. minimal risk of not obtaining revenue requirement)
- External factors (e.g. weather, macro economy) adjustable

Critique Of Revenue Requirements

- Risk reward asymmetry: privatized gain socialized of risk (especially adjusted revenue caps)
 - Depends on regulatory rigor in requiring proof of efficiency gains
- Increased risk of rate volatility and uncertainty (especially adjusted revenue caps)
- Complexity and cost of administration (especially if regulatory oversight is vigorous)

Note On Verifying Cost Basis And Efficiency Gains In All Tariff Methodologies

- Where actual cost are being used, regulatory verification is required
- Where cost basis is benchmarked based, it must be verifiably realistic in terms of achievability and attainability
- Determination of efficiency gains must be verifiably derived from cost basis and demand side efforts
- Verification requires full transparency, clear accounting, rigorous auditing, and regulatory oversight

Conclusion

- Traditional tariff methodologies fail to recognize value of conservation and efficiency
- Demand and supply options should be neutralized for distributors
- All tariff methodologies carry serious risks
- Successful implementation of demand side incentive require rigorous regulatory oversight and/or highly efficient price signals