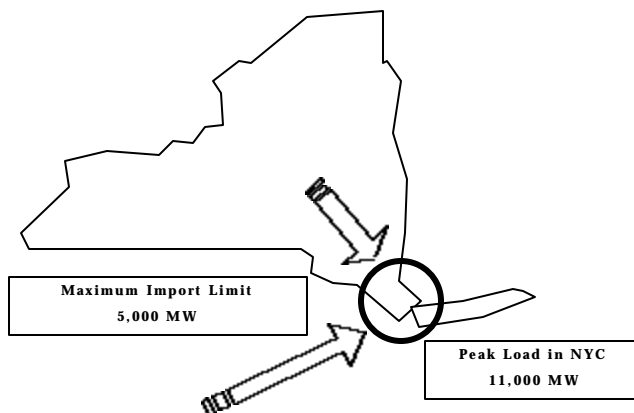


New York's Electricity Picture

Significant transmission constraint for electricity imports to NYC

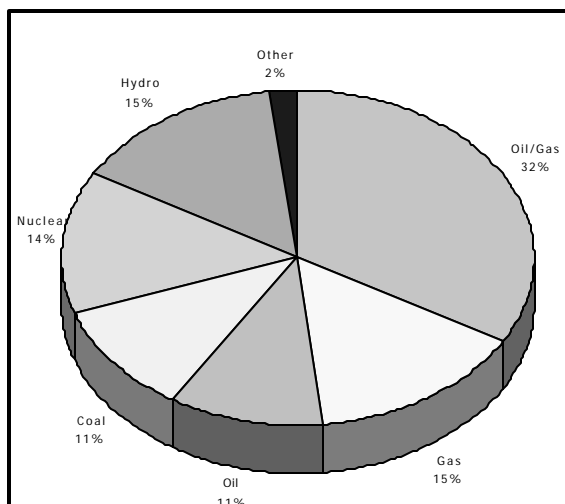


- Must rely on significant amount of in-city generation most hours
- 80% of NYC peak load must be capable of being served by in-City generation (95% for Long Island)

3

New York's Electricity Picture

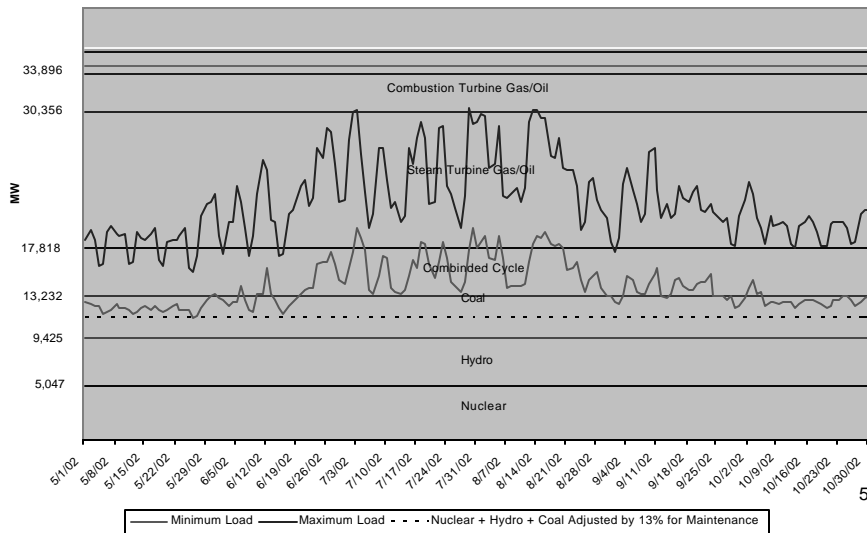
Fuel Diversity



- New York is a highly fuel diverse state
- Most proposed new generation plants are gas fired

4

Summer Months 2002 Generation Capability and Min & Max Load



New York: Overall Energy Profile

- New Yorkers spent \$38 Billion on energy in 2000.
 - 32000 MW peak demand for electricity
- Most energy efficient state in energy use per-capita.
 - Expertise delivering clean energy technologies
 - NYC - a world financial trading center
- Carbon emissions in 2000 were 234 million tons, down 2% from 1990, while total primary energy use rose by 8%.
- Energy for electricity generation is 38% of total, transportation 28%, renewables 10%.

What Does the Commission Do?

- The New York State Public Service Commission (PSC) regulates privately-owned companies that supply electricity, natural gas, steam, telephone, and water services throughout New York State.
- The PSC is committed to protecting the rights of New Yorkers while ensuring access to reliable and low-cost utility services.

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What Does the Commission Do?

(continued)

- The Commission is charged by law with responsibility for setting utility rates and ensuring that adequate service is provided by New York's utilities.
- The Commission also exercises jurisdiction over the siting of major gas and electric transmission facilities and has responsibility for ensuring the safety of natural gas and liquid petroleum pipelines.
- The Chair of the PSC is also the Chair of the New York State Board on Siting of Electric Generation and the Environment.

8

Why the Commission Was Established

- The PSC was established in 1907 to protect utility consumers from potential abuse of monopoly power.
- Utilities were allowed to operate as regulated monopolies within their service territories.
- This avoided costly and unsightly duplication of the vast networks of pipes and wires, and provided for regulated energy prices.

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Makeup of the Commission

- The Commission currently consists of five Commissioners selected by the Governor and confirmed by the State Senate for six year terms.
- One Commissioner is designated as Chairman by the Governor and serves as chief executive of the Department of Public Service.
- William Flynn is currently Chair of the PSC; the Commissioners are James Bennett, Thomas Dunleavy, Neal Galvin, and Leonard Weiss.

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What is the Department of Public Service?

- The Department of Public Service (DPS) is the State Agency that houses the Public Service Commission and provides the staff resources for the Commission.
- It consists of about 550 employees, including accountants, economists, engineers, environmental specialists, consumer representatives, attorneys, administrative law judges, and support personnel.
- Department offices are located in Albany, Buffalo, Delmar, Syracuse, and New York City.
- Staff members are also on site at most major gas, electric, and telephone utilities.

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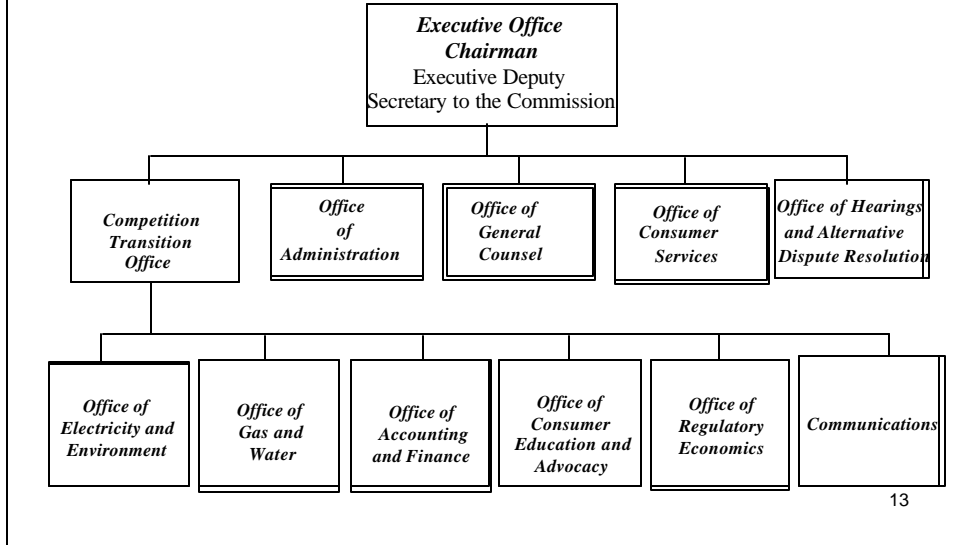
Department of Public Service **Twelve Offices**

- Executive Offices
- Competitive Transition Office
- Office of Administration
- Office of General Counsel
- Office of Consumer Services
- Office of Hearings and Alternative Dispute Resolution
- Office of Electricity and Environment
- Office of Gas and Water
- Office of Accounting and Finance
- Office of Consumer Education and Advocacy
- Office of Regulatory Economics
- Communications

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Department of Public Service

Current Organization



Range of Staff's Responsibilities

- Represents public interest in all Commission proceedings
- Sets service and operating standards for utilities
- Administers regulations issued by the Commission
- Receives, investigates & resolves complaints
 - *billing*
 - *service*
 - *other utility practices*
- Audits utilities'
 - *accounting practices*
 - *management functions*
 - *day to day operations*

Range of Staff's Responsibilities

(continued)

- Represents Commission in court proceedings
- Advises Commission on all decisions...
 - *rate determinations*
 - *utility financings*
 - *certificates of environmental compatibility & public need*
- Maintains active role in State and Federal proceedings
 - *development & implementation of State Policies*
 - *expert testimony in proceedings before State or Federal entities*
 - *participation in national regulatory organizations (NARUC)*
- Implements the Commissions policies to develop competitive markets (major staff emphasis)

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NYS Department of Public Service

Mission Statement

- Vision - *Promote competitive markets and streamline regulation*
- *We believe customers are best served by competitive markets. Therefore we will promote their development and will increasingly use output oriented, performance based approaches to regulate areas that are not competitive. Once markets become sufficiently competitive, we will eliminate regulatory involvement to the extent permitted by law.*

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Regulatory Staff Functions

Executive Offices

- Commission
- Secretary to the Commission - Under the direction of the Chairman, the Secretary's Office is responsible for coordination of administrative actions that ensure all parties have a fair opportunity to be heard in Commission proceedings and ensure utility and staff compliance with Commission orders and directives.
- Public Information Office - Serves as a public advocate of the Commission's and Department's regulatory policies and programs, conducts an external communications program with the public and other constituencies, and ensures that the external communications effort accurately represents the Commission's policies.

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Regulatory Staff Functions

Competition Transition Office

- Coordinates policy related to development of competitive markets, especially among different industries.
- Ensures multi-disciplinary teams are adequately staffed and project schedules are reasonable.
- Coordinates policy issues with other states and at the federal level.

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Regulatory Staff Functions

Office of Administration

- Provides administrative support to the Commission and operational support to the Department.
 - Human Resources Management - staff development and performance, employee relations, job classification and compensation.
 - Information Services - develops and supports the Departments computer hardware and software network, including user training and support, and geographic information services.
 - Administrative Management - manages Commission records, document processing, files, and the planning and contracting for Department space and services.
 - Finance & Budget - develops and monitors the Department's budget and spending plans, administers payroll, travel, revenue collections, and vendor payments.

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Regulatory Staff Functions

Office of General Counsel

- Represents and appears on behalf of the people of the state in all legal matters involving any question related to the Public Service Law or jurisdiction of the Commission.
- Provides the Commission with legal advice regarding day to day decisions.
- Represents the agency in court and before federal agencies.
- Advises Department staff on legal issues related to utility regulation.
- Prepares proposed regulations and legislation.
- Reviews issues related to ethics.

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Regulatory Staff Functions

Office of Consumer Services

- Seeks to ensure that the Department and the utilities are responsive to the needs of individual consumers and the public.
- Provides direct and timely assistance to consumers in resolving individual disputes with utilities.
- Responds to customers who call, write or visit the Department.
- Provides statistical information regarding customer complaints to the Commission, utilities and the public.
- Analyzes customer service concerns and brings them to the attention of the Commission.
- Provides an informal hearing and appeal process to consumers who are not satisfied with the results of initial complaint resolution processes.

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Regulatory Staff Functions

Office of Hearings and Alternative Dispute Mediation

- Consists of Administrative Law Judges (ALJs) assigned to all proceedings in which hearings are held or where disputes require special mediation.
- ALJs oversee development of the official case record, analyze arguments and evidence offered by the parties, and offer advice and recommendations about issues that should be resolved by the Commission.
- Participates in a broad range of cases and disputes in which Alternative Dispute Mediation may be employed to help interested parties reach decisions by themselves.

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Regulatory Staff Functions

Office of Gas and Water

- Ensures gas, steam and water utilities provide safe and adequate service at fair and reasonable rates.
- Emphasis placed on technical and operational issues.
- Monitors utilities to ensure they operate in accordance with Commission and statutory requirements.
- Conducts field investigations regarding gas safety issues.
- Ensures utilities are effectively implementing the Commission's policies regarding gas competition.

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Regulatory Staff Functions

Office of Accounting & Finance

- Performs financial audits and examinations related to utility rate changes, including mergers/acquisitions, prudence reviews, and tax changes.
- Reviews petitions from utilities requesting special accounting treatment and issuance of financial securities.
- Participates on interdisciplinary teams to analyze the effects of the transition of regulated utility functions to competitive operations.

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Regulatory Staff Functions

Office of Consumer Education and Advocacy

- Promotes consumer access to essential services through consumer education and input, advocating for consumer needs, and ensuring appropriate consumer protections.
- Reviews tariff filings for reasonableness from a consumer perspective.
- Provides consumers with information to assist in choosing among competitive energy suppliers.
- Advocates for business and for economic development in areas related to energy and telecommunications.

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Regulatory Staff Functions

Office of Regulatory Economics

- Attempts to ensure that the markets will be competitive, that there will be no significant barriers to entry, that market participants will not be able to exercise undue market power to the detriment of customers, and that markets will work efficiently.
- Involved in incentive regulation, marginal costs and rate design, and econometric forecasting.

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Regulatory Staff Functions

Office of Communications

- Oversees the performance of telephone and cable TV companies. Office comprised of five sections:
 - Inter-Carrier Coordination - Responsible for resolving issues that arise between competing telephone companies.
 - Dominant Carrier Performance - Examines the investments that dominant local telephone companies make in their facilities and ensures customers receive quality service.
 - Competitive Carriers and Market Analysis - Reviews the certification applications, tariff filings, service quality, and proposed mergers of competitive, non-dominant local phone companies. Monitors development of local competition.
 - Municipal Assistance - Assists cities and towns with television cable issues.
 - Video and Broadband Systems - Conducts cable system technical and safety evaluations

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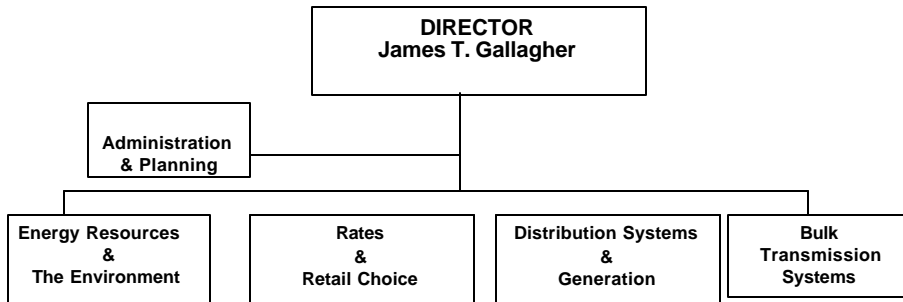
Regulatory Staff Functions

Office of Electricity and Environment

- Oversees the performance of electric corporations under Commission jurisdiction.
- Ensures that utilities provide safe, reliable, and efficient service, at just & reasonable rates, with concern for the environment.
- Responsible for rate design, tariff review and competitive unbundling of rates.
- Reviews applications for new power plant and transmission facilities. Monitors construction.
- Coordinates with the New York Independent System Operator (NYISO) on wholesale market development.
- Develops and implements retail competition initiatives.
- Oversees energy efficiency and renewable energy efforts.

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Office Of Electricity and Environment Organization



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Issues Confronting the PSC: Electric

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Issues Confronting the PSC: Electric

- Reliability
 - Blackout Inquiry
 - Transmission Planning
 - Transmission Investments (who pays?)
 - Load Pockets
 - Short circuit mitigation
 - Interconnections with distributed generation
 - Role of NYISO
 - Regional Transmission Organization (RTO)
 - Storm restoration
 - Distribution system adequacy/Infrastructure investments

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Issues Confronting the PSC: Electric (continued)

- Adequacy of Supply
 - Article X process (Generation Siting)
 - Article VII process (Transmission Siting)
 - Distribution Generation
 - Interconnections
 - Standby Service
 - Demand Reduction Programs
 - Financing Difficulties
 - Pipeline Capacity
 - Regional installed capacity procurement process development
 - Gas supply adequacy
- Fuel Diversity
 - Renewables (Renewable Portfolio Standard)
 - Net Metering
 - Fuel Mix (increasing amount of gas used for generation)

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Issues Confronting the PSC: Electric (continued)

- Competitive Wholesale Market
 - Role of NYISO
 - Operations (See Reliability above)
 - Market Operations
 - Market Power
 - Adequacy Of Revenues To Support Generation
 - Demand Curve
 - Transmission Price Pancaking
 - RTO/Seams Issues
 - Regional (Broader) Markets
 - Contracting for Future Generation Output
 - Role of Government

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Issues Confronting the PSC: Electric (continued)

- Competitive Retail Markets
 - Real Time Prices
 - Uniform Business Practices
 - Electronic Data Interchange
 - Energy Service Company (ESCO) Licensing
 - Creditworthiness
 - Consolidated Billing
 - Competitive Metering
 - Increasing Penetration in Mass Markets
 - Role of Government

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Issues Confronting the PSC: Electric (continued)

- Environmental
 - Carbon Cap and Trade Program to Reduce Greenhouse Gas Emissions
 - Hudson River Cooling Water Agreements
 - Renewables (see Fuel Diversity)
 - Siting of Major Utility Facilities (see Adequacy of Supply)
- Public Benefits
 - Low Income Programs
 - Research and Development
 - Demand Management

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Issues Confronting the PSC: Electric (continued)

- Security
- General Regulatory Oversight
 - Utility Rate Setting
 - Long Range Planning/State Energy Plan
 - Interaction and Role with Respect to FERC/NYISO
 - Safety
 - Economic Development
 - Public Information
 - Complaints
 - Staffing Shortages

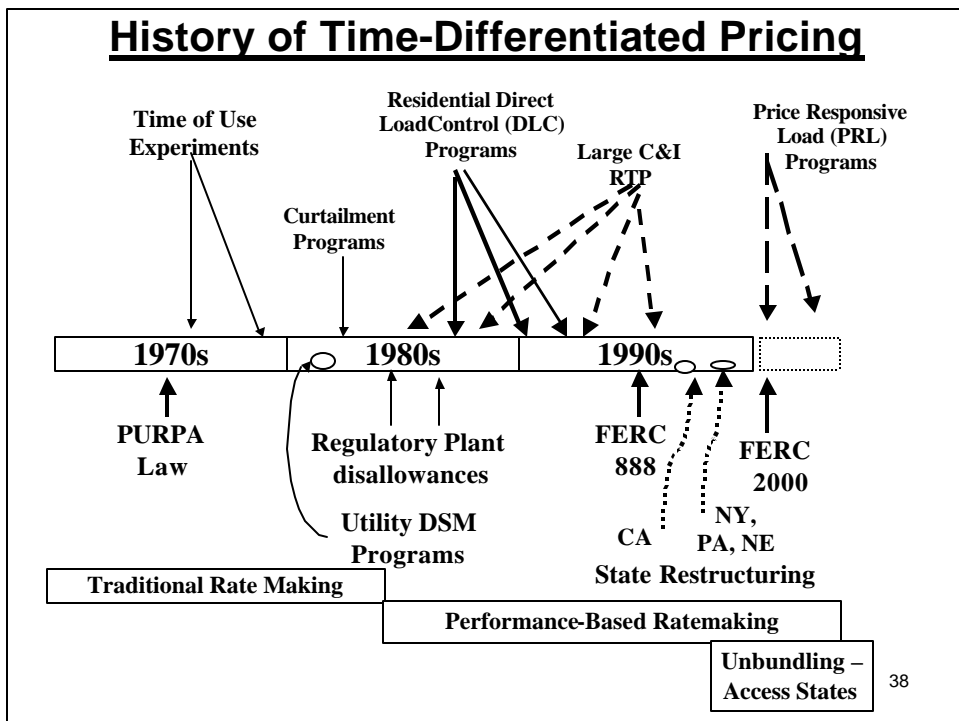
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Typical Electricity Pricing Prior to Restructuring

- Fully bundled tariff pricing
- One-size fits all
- Demand charges collect plant-based revenue requirements (straight kW pricing with ratchets)
- Average cost energy pricing, with blocks to reflect seasonal differences
- Utility avoided cost based load management programs

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History of Time-Differentiated Pricing



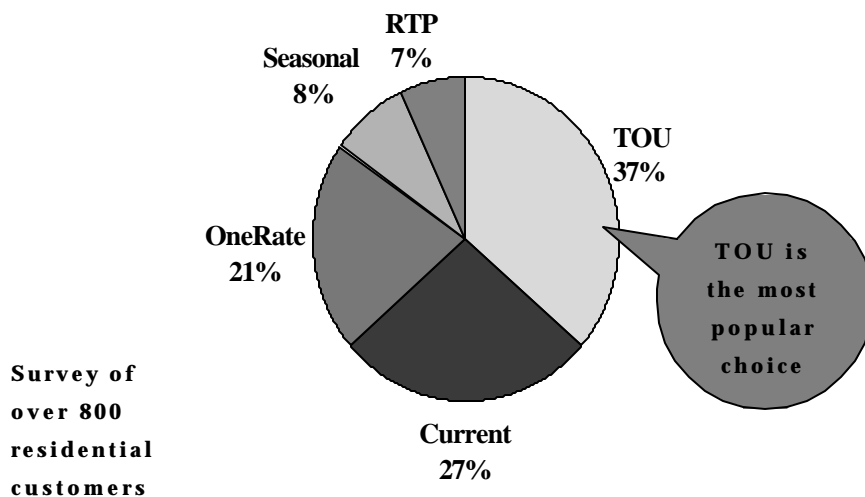
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Do Customers Really Want Time-Differentiated Pricing?

- Market research
- Time of Use (TOU) and RTP Experience and Design Challenges
- Solutions
- Market Fundamentals Driving New Pricing Product Development
- Review of Several Technology-Based TOU pilots

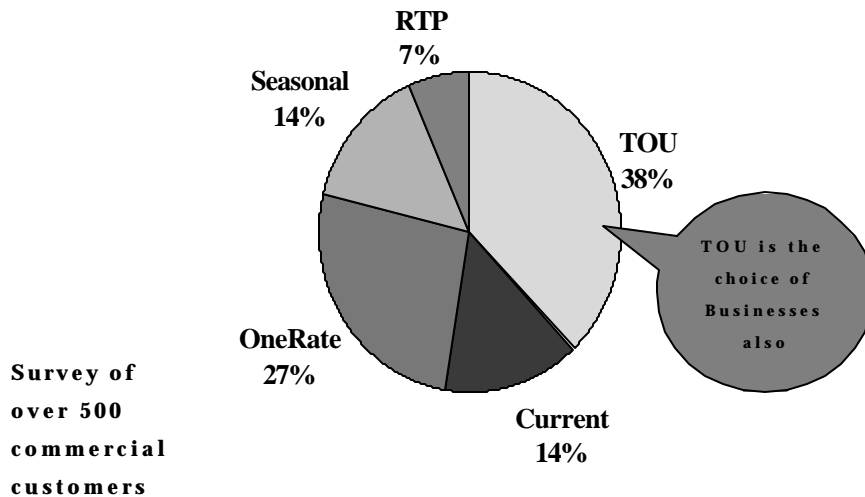
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Residential Choice Among Pricing Plans



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Small C/I Choice Among Pricing Plans



Problems with Conventional TOU Rates

- Class-level design bias
 - *Mandatory rates create winners and losers*
 - *voluntary "Self-selecting" rate can result in revenue drain*
- Very little peak to off-peak price variation
 - *Low incentive to shift usage to off-peak*
 - *Low incentive to increase off-peak usage*
- Rigid peak period covers too many hours of the day
 - *Prices usually do not reflect actual system costs*
 - *Resulting in few feasible energy management strategies*
- Demand charges can impede Demand Response
 - *Marginal peak price is often artificially high*
 - *Mistakes in the shifting of usage can be costly*

The Time Differentiated Rate Design Challenges

- Rates must induce sufficient shifting to justify the meter cost – *need large price differential.*
- Efficiency requires prices = Marginal Cost , *low price differential in an excess capacity situation.*
- Must be effective and revenue neutral designs.
- Must avoid “free ridership” – *mandatory programs may be needed in deficient capacity situation.*

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Real Time Pricing Experience

- **1985-1987 Pilots**
 - California C&I – low participation, design problems
 - Georgia Residential – technology and design problems
- **1988–1999 Pilots**
 - Georgia Power – grew to 1,600 customers
 - Florida Power & Light introduced flexible rate program
- **2000 until today**
 - Few new programs, price volatility reduces subscription
 - Hedges introduced to reduce migration, decrease volatility
 - Real Time Pricing for large Niagara Mohawk customers
 - Voluntary RTP Tariffs in NY for all customers over 100KW
 - Customer preference moving toward PRL programs

Solutions

- Increase Choices: Offer customer-specific or community of interest -specific rate designs
 - *Better match prices with true system costs*
 - *Eliminates windfall benefits and penalties*
- Allow customers choice of TOU design
 - *Length of the daily peak and off peak period*
 - *Peak price premium*
 - Customers tailor the rate to their capabilities and expectations*
- Emphasize Competitive Solutions

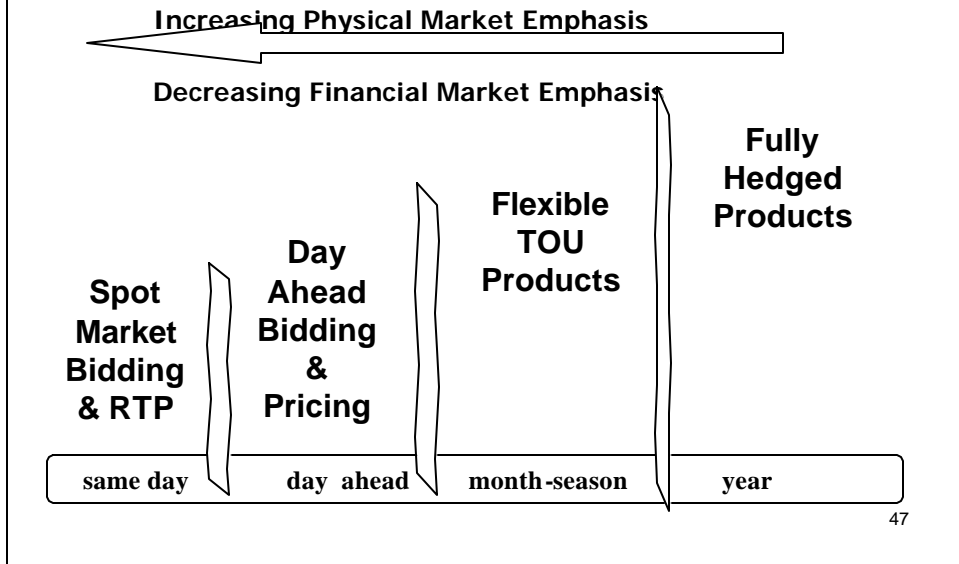
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Emerging Issues Driving Retail Pricing Design

- Competition & Unbundling of Rates
 - Wide Variety of Commodity Pricing
 - *Separate Delivery and Commodity Charges*
 - *Variable “Shopping Credit” or “Prices to Beat”*
 - *More Innovative Time-of-Use and Fixed Price Rates*
 - *Financial Hedges Against Volatility*
- Reduced dependency on demand charges
 - Fixed Access Charges for Delivery Service
- Load Acting as a Resource (Customer Load Becoming a Valuable Commodity)

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Retail Pricing “Product” Design Hierarchy



Conclusions

- Customer rate preferences and their ability to respond to prices vary greatly.
- Effective TOU pricing is a long-term investment in new consumption behaviors by customers.
- Enabling technology is important (e.g. Public Benefit Funds may be needed to reduce customer cost).
- Competition among suppliers has been demonstrated to increase value to the customer & increases choices.
- Price Responsive Load (PRL) programs may ultimately offer better value to customers, but increase information and technology requirements.

Issues Needing to be Addressed

- What is the expected demand response to improved pricing?
- Should real time pricing be voluntary or mandatory?
- What would participation be if voluntary, and customer and political reaction if mandatory?
- Should default customer service be provided on an average or “real time” basis? (hedges?)
- What changes are needed to utility metering and billing systems to handle more innovative pricing?
- What enabling technologies are needed to improve customer response to price signals? Who pays?

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