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Electric Utility Reintegration: Vertical Market Power and Potential Market Foreclosure

David W. DeRamus, Ph.D.

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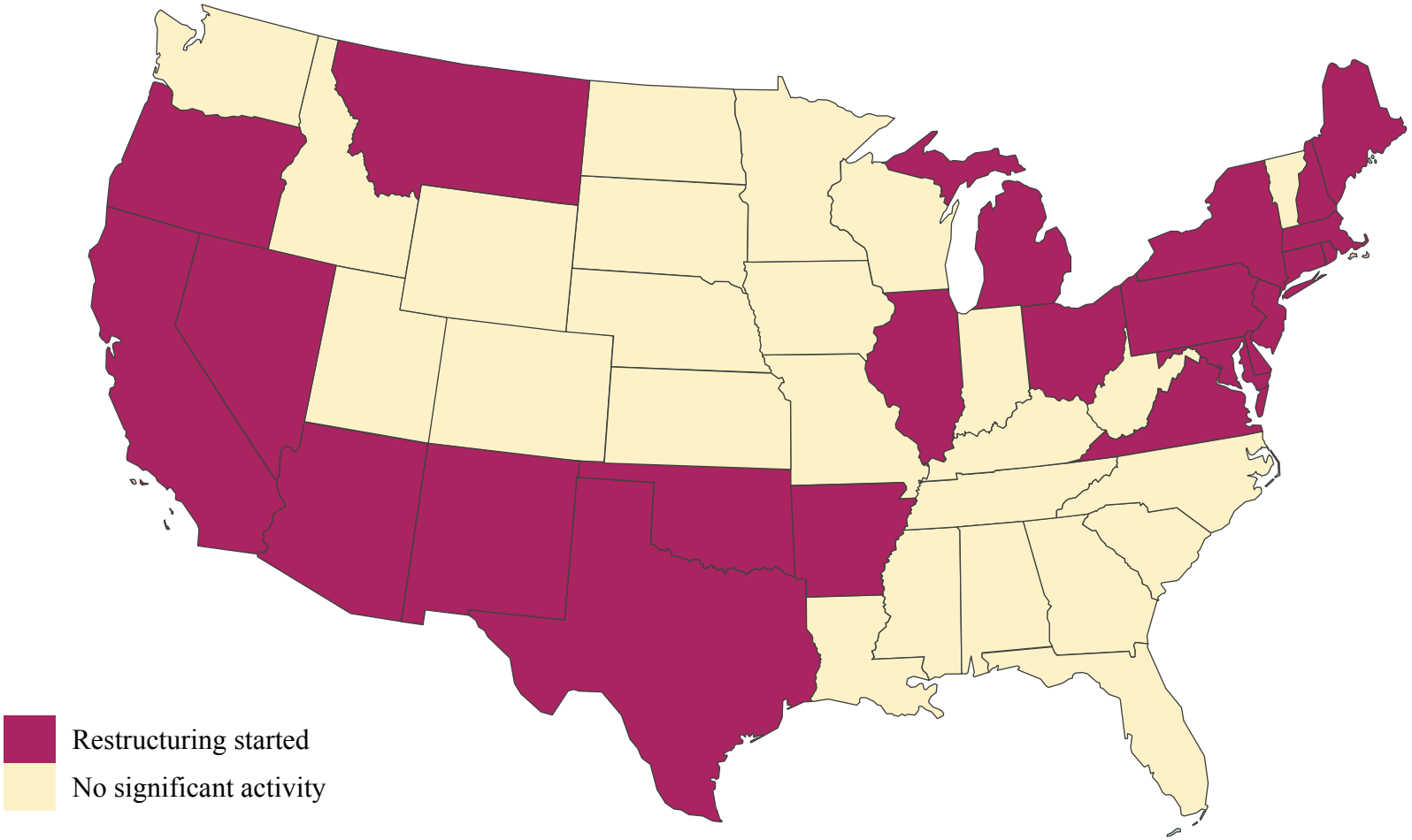
Recent Market Developments: Vertical Reintegration of Electric Utilities

In the late 1990's, about half of the states started restructuring electricity markets



Restructuring most often included efforts to encourage utilities to divest generation

As expected, restructuring led to numerous asset transactions and significant market reconfiguration

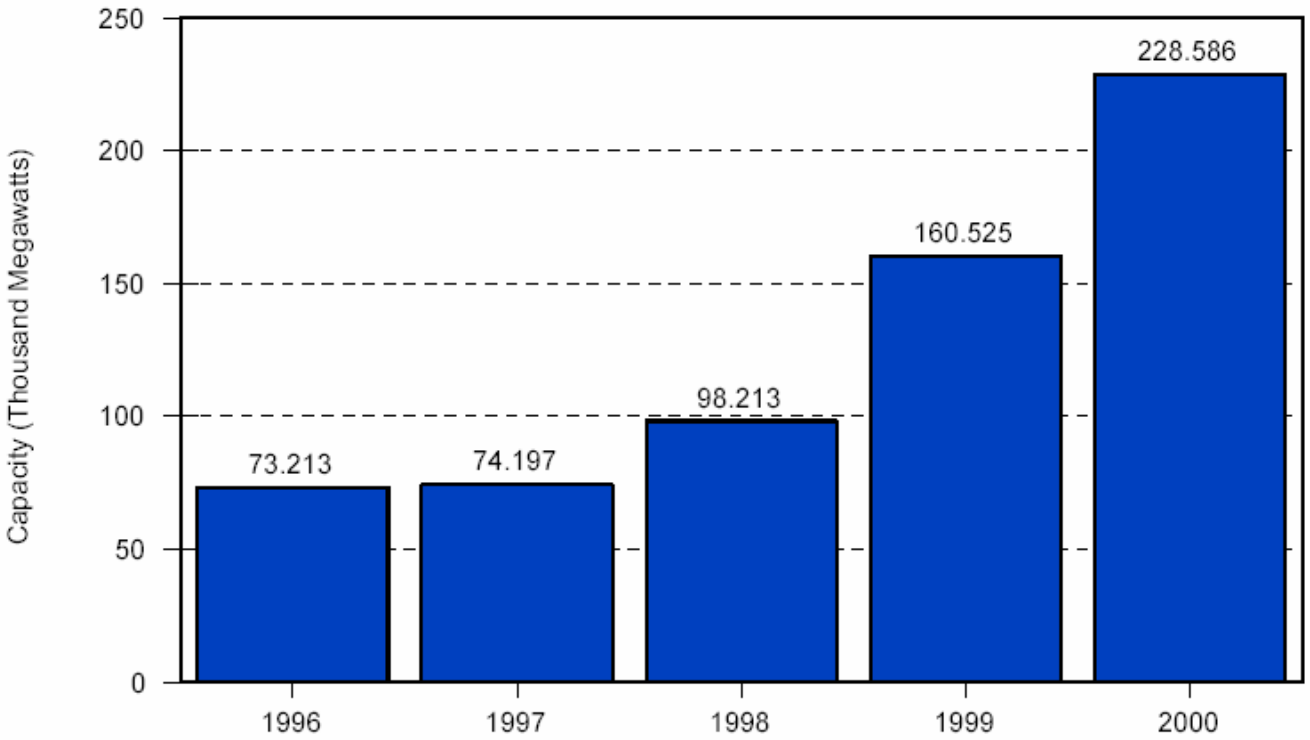
Generation Asset Sales
(1997-2002)

Energy Source	Number of Transactions	Total Capacity (MW)	Average Price/KW	Minimum Price/KW	Maximum Price/KW
Coal	21	27,937	814	120	1,110
Gas	22	27,364	554	4	1,350
Oil	21	20,708	258	13	1,110
Hydro	13	4,341	488	14	1,000
Nuclear	11	10,956	321	16	732

Note: Transactions may involve more than one plant.

Independent merchant generators experienced a substantial increase in capacity

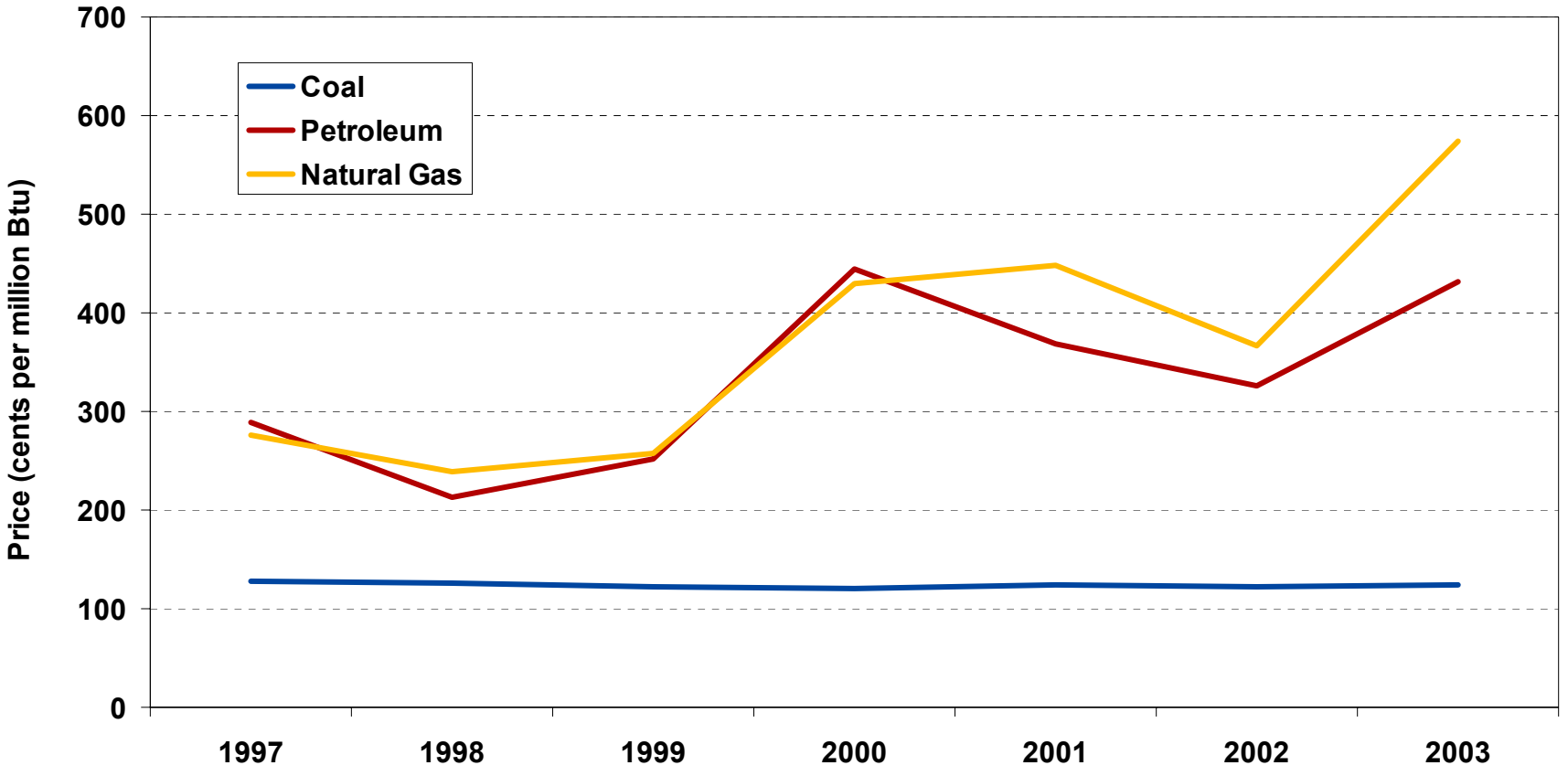
Existing Generating Capacity at U.S. Nonutilities, 1996-2000



Source: Energy Information Administration, "Annual Electric Generator Report - Utility."

Many merchant generators invested in new and existing gas-fired generation assets

Volatile gas prices have made gas-fired generation assets significantly less attractive in many markets



Other factors have also contributed to a substantial decline in the value of merchant generation assets

- Overinvestment in gas-fired generation (in some areas)
- Financial fragility of market participants
- Increased cost of capital
- Regulatory uncertainty
- Increased risks associated with power marketing function
- Fewer independent market participants
- Greater attractiveness of other generation assets (in some areas)

Potential impact of other market factors

- Constrained access to utility-controlled transmission services
- Preferential dispatch of utility-owned generation
- Refusal by utilities to enter into PPAs with merchant generators
- Long-term interaffiliate PPAs

Potential impact of utility behavior

The relative contribution of this mix of factors to the decline in value of a specific asset requires a case-by-case analysis

In response to market volatility, many states have delayed or reversed market restructuring efforts

- Arizona Corporation Commission nullified a section of restructuring law requiring divestiture of generation assets (August 2002)
- Nevada Governor issued plan to "re-examine" utility plant divestiture and indefinitely halt electric utility deregulation (March 2001)
- Restructuring delayed in Arkansas, Montana, New Mexico, and Oklahoma
- California reaction to 2000 – 2001 energy crisis:
  - State senators declared energy deregulation a "mistake of epic proportions" (April 2003)
  - "We want to promote distributed renewables and new efficient, low-polluting, ***utility-owned*** generating plants" (Commissioners Loretta M. Lynch and Carl Wood, May 2003)
  - CPUC: allowing a greater degree of utility re-integration, procurement plans for utilities to ensure they provide reliable service

Reversal of restructuring efforts may result in a significant, long-term reintegration by incumbent utilities

- Increased risk aversion by regulatory bodies and political representatives
  - Long-term PPAs are politically palatable
  - Increased importance of security of supply
  - Increased desire to reduce price volatility
- Development of competitive markets is less important politically
  - (Erroneous) perceptions that competitive wholesale markets are a failure
  - (Erroneous) perceptions that retail competition is a failure or a "non-event"
- Incumbent utilities are generally in a highly favorable bargaining position
  - Cash-starved independent power producers
  - Fire-sale prices for generation assets

Will utility reintegration lead to anticompetitive outcomes?

Economic Theory: Potential Anticompetitive Consequences of Vertical Reintegration

Some economists argue that vertical integration is almost always beneficial

- Cost reduction by coordination in design and production
- Elimination of "free riding" by either party
- Elimination of "double-markup"
- "Chicago School" single monopoly profit arguments:
  - Vertical mergers carried out by a monopolist cannot enhance monopoly power
- "Chicago School" arguments depend on several assumptions:
  - *Unregulated* monopoly protected by prohibitive barriers to entry
  - Perfect competition in the upstream input market
  - Technology that uses fixed proportions of inputs

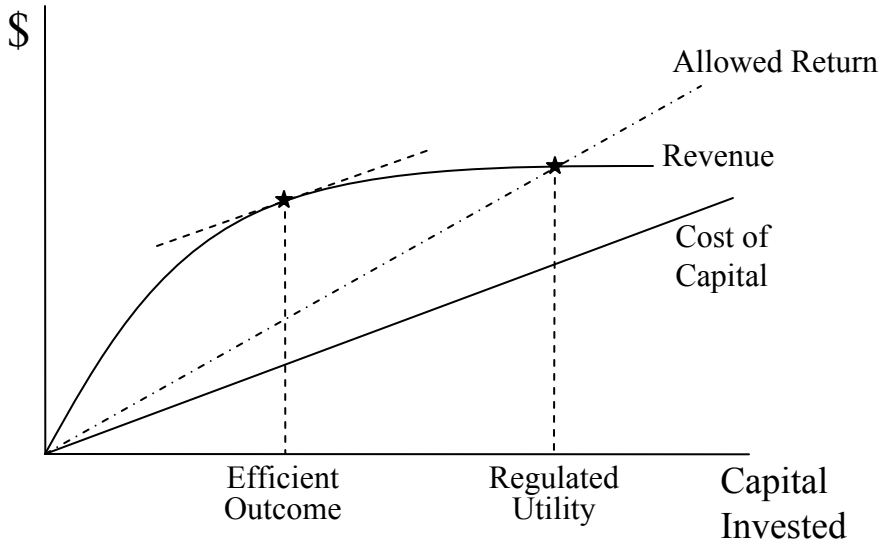
"Chicago School" assumptions generally do not apply to regulated utilities

Exercise of vertical market power by regulated utilities can take a number of different forms

- Leveraging monopoly power into adjacent markets
- Raising rivals' costs
- Market foreclosure/discriminatory access
- Monopsony power

Leveraging monopoly power into adjacent markets

- Incentives to engage in abusive self-dealing/cross-subsidization
  - Cost-of-service utility may evade regulation by increasing affiliate input prices
- Inefficiencies and distorting incentives from "rate-base padding"
  - "Averch-Johnson" effect: cost-of-service provides incentives to increase the rate base



Regulated companies have incentives to vertically integrate, regardless of production efficiencies, in order to expand the rate base and increase total profits

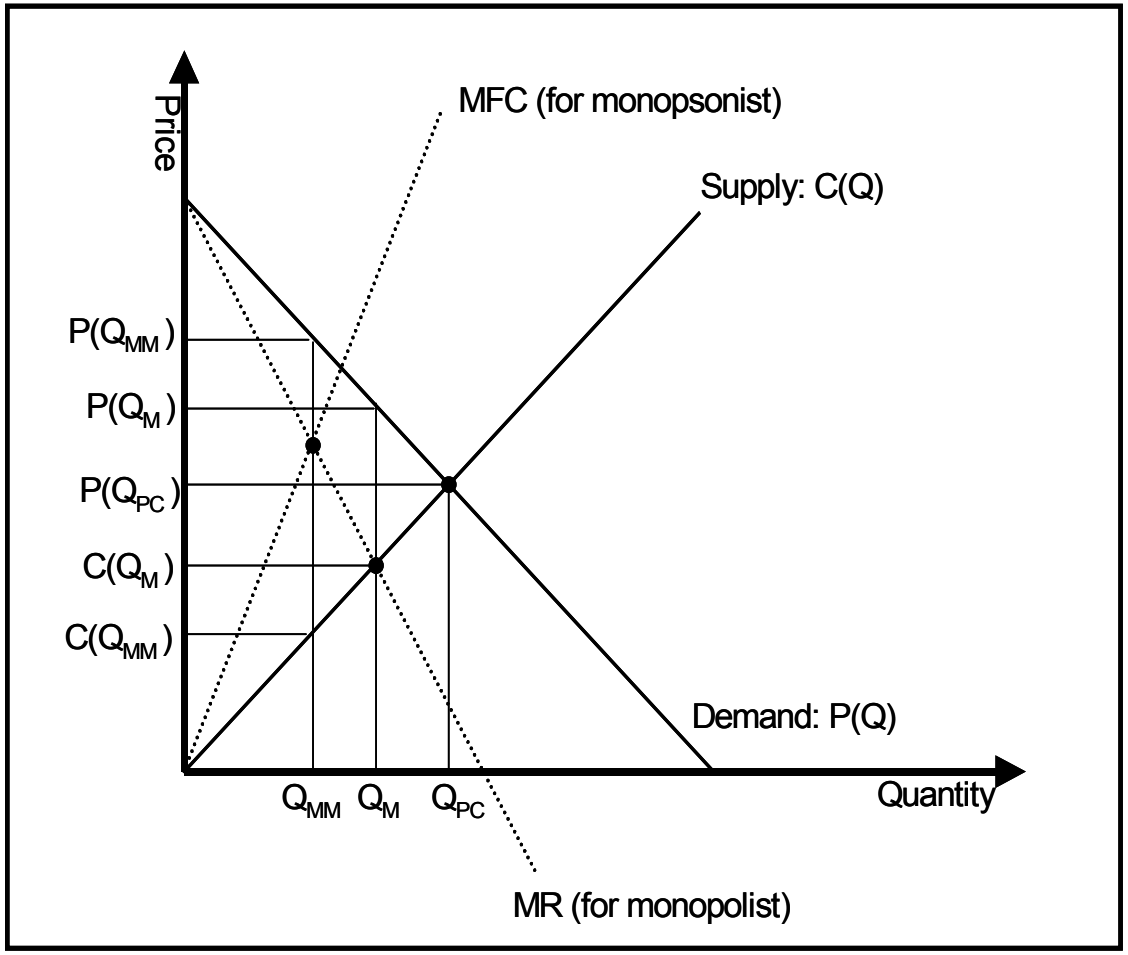
Raising rivals' costs

- Increase competitors' access fees to essential facilities
- Bidding up key inputs in auctions
- Restricting competitors' access to capital markets through exclusive dealing
- Discriminatory access to customer information to increase competitors' costs to serve customers

Market foreclosure/discriminatory access

- Secured monopolist has incentives to favor its own production in the adjacent market and limit access to rivals
- Refusals by downstream monopolist to purchase from upstream rivals
- Discriminatory access to essential facilities
- Incentives to engage in inefficient/uneconomic use of market resources (e.g. uneconomic dispatch)
- Forecloses competitors from a fair opportunity to compete

Monopsony power exacerbates the incentive of the monopolist to restrict output and to increase price



Monopsony power can provide an incumbent utility with both the incentive and ability to discriminate against competitive upstream rivals

Vertical Reintegration of Electric Utilities in Practice

AT&T (1984) shows how a regulated monopoly can engage in vertical market foreclosure

- DOJ applied a "regulatory failure" argument to AT&T's interaffiliate transactions
- AT&T's cost-of-service regulated "downstream" business provided the means and incentive to monopolize "upstream" equipment markets
- Regulation of the firm's downstream market was evaded by monopolizing the upstream market
  - Prices paid to affiliate for equipment were too high
  - Cross-subsidization between markets increased the rate base
- Interaffiliate abuse coupled with "bad acts" towards competitors
  - Refusals to buy competitors' products, to permit customers to buy them, or to provide rivals with interconnection
  - Rising rivals' costs by requiring unnecessary devices for competitors' equipment and denial of equal access to competitive long-distance carriers
  - Abuse of the regulatory process

Interaffiliate transactions in power industry may exhibit different anticompetitive consequences

- Case 1: Vertical foreclosure through control over transmission network
  - Transmission-related "bad acts"
  - "Essential facility" arguments
  - Predation
- Case 2: Vertical foreclosure through control over retail/distribution
  - Refusals to deal in order to prevent competitor access to retail markets
  - Monopsony power
- Case 3: Using interaffiliate transactions as a regulatory "safety net"
  - Providing *ex post* regulatory protection to market-based utility affiliates
  - Discriminatory abuse of regulated monopoly position
  - Disincentives for new investment/creation of barriers to entry for rivals

Case 1: Vertical foreclosure through control over transmission network

- Incumbent utility has monopoly over transmission, distribution, and retail
  - No ISO/RTO
  - Large share of generation assets
- Utility can artificially restrict merchant generators' access to transmission grid
  - Unreasonable interconnection delays / discriminatory access to grid
  - "Gold-plating" requirements for interconnection
- Utility can engage in anticompetitive acts to "raise rivals' costs"
  - Imposition of discriminatory costs on new entrants
  - Transmission-related "FUD" campaign against merchant generators

With restricted market access, independent generators may be forced to sell depreciated generation assets to incumbent utility

Case 2: Vertical foreclosure through control over retail/distribution

- Incumbent utility: limited control over transmission, monopoly power in retail
  - Can occur with ISO/RTO
- Increased financial market pressures for generators to enter PPAs
- Utility refusal to deal with merchant generators seeking PPAs
- Utility enters into a long-term interaffiliate PPA
  - Leverages its monopoly power in retail access to gain advantage in generation market
  - Forecloses access to portion of generation market over long-term
  - "Raising rivals' costs": financial markets penalize generators that fail to enter PPAs
- Anticompetitive consequences can even occur with cost-of-service PPA

PPA "refusal to deal" can exacerbate decline in independent generator asset values – providing further incentives for utility vertical reintegration

Case 3: Using interaffiliate transactions as a regulatory "safety net"

- Incumbent utility: no assumptions about market structure/control
- No necessary predatory/anticompetitive intent
- Incumbent utility transfers generation assets from market-based affiliate to cost-of-service regulated entity when market demand declines
- Extricates market-based affiliate from market risks / investment risks
- Market-based affiliate afforded commercial advantages solely by virtue of its ownership by a regulated monopoly
  - E.g. peaker unit highly profitable under market-based rates when demand is high, and also profitable under cost-of-service when demand is low
- Increases relative risks for independent market participants
- Reduces investment incentives for independent market participants

Discriminatory regulatory treatment creates long-term barriers to the development of competitive generation markets

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