

The Political Economy of Retail Wheeling, or How to Not Re-Fight the Last War

Disparities in utility rates — observably the result of poor supply-side resource planning — have been small before and will be small once again. Retail wheeling's promise of short-run gains for a few would, ironically, destroy integrated resource processes in place today that guard against a repeat of yesterday's planning mistakes.

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"Politics," quipped Groucho Marx, "is the art of looking for trouble, finding it everywhere, diagnosing it incorrectly, and applying the wrong remedies." The estimable comedian might have been describing the current "retail wheeling" debate in the United States.

For all the ink it has consumed and passion it has aroused, the U.S. retail wheeling debate is still remarkably devoid of the key elements of a rational policy discussion: a reasoned definition of the "problem," an analysis of its causes, and an examination of al-

ternative solutions. This article attempts to sort out the underlying causes of and interests at stake in the retail wheeling debate, and assess the validity of the assertions of retail wheeling proponents.

We conclude first that support for retail wheeling is in significant part a reaction to the utility rate differentials resulting from the ambitious capacity construction programs (most but not all of it nuclear) of the 1970s and 1980s. Ironically, these construction programs, and resultant cost overhangs, were considerably smaller or nonexistent where there ex-

isted integrated planning of the type which many retail wheeling proponents decry. Driven by the desire to escape these embedded capacity costs, retail wheeling proponents are essentially still fighting the *last war* — the war over nuclear imprudence. Sunk cost-shifting, not prospective cost-savings, is their end. Political muscle is their means.

Even if this effort actually results in significantly reduced rates to wheeling customers in the short term (and there are many reasons to believe that, in any fair system, it will not), over the long term the energy policy implications of retail wheeling are problematic indeed — a feature it shares with more thoughtful and intellectually honest U.K.-style industry restructuring proposals. Specifically, the replacement of an electric power planning framework with one dominated by *bilateral contract* is likely to be a poor fit in a world where the dominant drivers of electric power policy are likely to be environmental. It also runs counter to the direction in which technology is driving power systems: toward smaller scale, distributed generation requiring more system coordination and planning, not less. Finally, it fails the test of political legitimacy that will be critical as environmental debate over the shape of the power system continues and intensifies.

In short, retail wheeling is a troubling answer to a mis-diagnosis of yesterday's problem. We believe that a variety of other poli-

cies offer most of the benefits and few of the risks that retail wheeling poses. These include aggressive wholesale competition, judicious pruning of uneconomic capacity, and serious incorporation of environmental risks into utility planning and regulation.

I. Retail Wheeling: Imprudence Litigation by Other Means?

The now-familiar case for retail wheeling rests on a chain of assertions which are rarely scrutinized:

that electric rates are a significant factor in U.S. (or state) industrial competitiveness; that high industrial rates are due to the absence of retail competition, industrial-to-residential cross-subsidies, and the imposition of integrated resource planning requirements; and that the dissolution of the retail franchise will result in significantly lower rates and therefore higher industrial employment.¹ While all of these assertions are shaky and unsupported,² here we focus on the assertion that current high embedded rates can be ex-

plained by the absence of retail competition, cross-subsidies, and the development of integrated resource planning requirements.

A. U.S. Retail Electric Rates 1970-93

In many jurisdictions where it has been discussed, the practical impetus for retail wheeling is the differential in retail electric rates between utilities in selected jurisdictions — especially the differential in industrial customer rates in neighboring utility service territories. Table 1 represents a typical inter-utility comparison, which is derived from a list compiled by Charles Studness.³

Thus, an industrial customer of one of the depicted high-cost utilities could theoretically save, on average, about 34 percent if it were served by the neighboring low-cost utility. Such a customer is likely to be unhappy that other customers in the same region, possibly competitors, are able to buy electricity at such a discount relative to the rate it pays. Hence the clamor for retail wheeling among some (but by no means all or a majority of) industrial customers.

This leads us to wonder whether these rate differentials have existed over time or whether they are a more recent phenomenon. To answer this question, we examined first the 1970 retail industrial rates of these utilities (See Table 1).

While the rates in the table are noticeably lower than rates today, the key point is that the differentials are much smaller, both absolutely and relatively.

The table shows why there was little interest in retail wheeling in the past. In 1970 an industrial customer switching from a high-cost utility to a low-cost utility would save only about seven percent, in contrast to the 34 percent average savings available to these customers today. Industrial customer rate differentials between utilities in the 1970s tended to be much smaller than they are today.

(While some of the clamor for retail wheeling has cited the differential between current IPP marginal costs and utility rates, in addition to inter-utility rates, the likely medium-term retail wheeling scenarios involve inter-utility competition, until much more far-reaching deregulation, divestiture and spot market mechanisms could be worked out, as in the U.K. In any event, comparisons

between nuclear utility and IPP rates are likely to follow the same trends and patterns as comparisons between high- and low-cost utility rates, described below.) Next we examine what happened over the past two decades to cause the high-cost group's rates to escalate so dramatically relative to the low-cost group's rates to generate today's huge rate differentials.

B. The Cause of Rate Differentials: Poor Supply-Side Planning

The major cause of these large rate differentials today is clearly related to poor planning on the part of the high-cost utilities. Many of these companies made big bets on nuclear power, encouraged by what was then a relatively "hands off" state regulatory

environment, a belief in ascending economics of scale, and the absence of requirements for wholesale competition. In general, the companies lost those bets.

In the late 1970s and 1980s the cost of building nuclear plants escalated dramatically. Utilities with ambitious nuclear construction programs tended to see their rates increase substantially. Those that avoided the nuclear option or had a more balanced portfolio of resources, including DSM, saw rates increase much more slowly. Given this backdrop one might expect that the high-cost utilities have relatively more nuclear generation. They do. In fact these companies have, on average, over three times as much nuclear generation as do their low-cost counterparts (see Table 1).

Table 1: 1993 vs. 1970 Retail Industrial Rates; Percent Nuclear Power in Generation Mix

High-Cost Utility	1993 Rate (Cents)	1970 Rate (Cents)	Generation Mix ^a (% Nuclear)	Low-Cost Neighbor	1993 Rate (Cents)	1970 Rate (Cents)	Generation Mix ^a (% Nuclear)
DOE Inc.	6.4	1.3	30	American Electric Power	3.8	0.8	8
Philadelphia Electric	7.8	1.2	58	Potomac Electric Power	5.5	1.7	0
Long Island Lighting	11.9	2.0	9	Pennsylvania Power and Light	6.0	1.5	31
Illinois Power Company	4.7	1.5	22	IPALCO Inc.	4.2	1.3	0
Ohio Edison	6.2	1.4	25	LG&E Energy	3.8	0.9	0
NIPSCO Inc.	4.9	1.4	0	PSI Resources Inc.	3.5	1.1	0
DPL Holdings	4.8	1.2	0	KU Energy	3.4	1.6	0
Centerior Energy	6.6	1.3	58	Cincinnati Gas and Electric	4.4	1.4	0
Commonwealth Edison	6.2	1.6	83	Wisconsin Energy	3.9	1.7	31
General Public Utilities	6.0	1.2	23	Allegheny Power System	4.2	0.9	0
Pub. Service New Mexico	6.2	1.1	31	Southwestern Public Service	3.6	1.3	0
Orange and Rockland	8.3	2.0	0	Delmarva Power and Light	4.6	1.1	18
Entergy	5.9	0.8	49	Empire District Electric	3.8	1.4	0
IES Industries	4.6	1.8	24	Northern States Power	4.4	1.7	28
Detroit Edison	6.8	1.1	16	CMS Energy	5.1	1.3	14
Average	5.5	1.4	28	Average	4.3	1.3	9

a. Source: Prudential Securities, Electric Utilities: Competitive-Risk Study, Sept. 24, 1993.

b. Source: Moody's Public Utility Manual, 1971.

c. Source: The Value Line Investment Survey.

Table 1 actually understates the effect of the nuclear problems of the late 1970s and 1980s. Some low-cost utilities that have relatively high amounts of nuclear generation (e.g., Wisconsin Energy) built their plants in the late 1960s and early 1970s before the staggering construction cost escalations and construction delays occurred. And some high-cost utilities (e.g., Long Island Lighting) spent substantial amounts on nuclear construction during the late 1970s and early 1980s, but failed to add the cost of the nuclear plant to the rate base. In spite of these potentially mitigating effects, nuclear construction problems stand out as a root cause of the rate differences.

To be sure, nuclear investments are not alone responsible for currently observed rate differentials: Expensive IPP contracts based on administratively determined avoided costs (often based on proxy nuclear costs) rather than wholesale bidding also play a role in many jurisdictions. In addition, current low oil and gas prices exacerbate these differences.

The key point is that conventional, pre-IRP, pre-wholesale competition electric supply-side planning practices, not demand-side management or inclusion of externality values in planning, for example, contributed most significantly to the distorted rate picture we see today. In fact it is highly likely that if good integrated resource planning had been done, such as in the case of Wisconsin Energy and New England Electric

Systems, a regime of market-based wholesale competition had been in place, or environmental regulatory risks had been part of regulatory evaluations, many of the expensive nuclear plants would have never been built and the rate differentials would have been substantially moderated.⁴

C. The Current Rate Differentials Are Not Due to Cross-Subsidies

Some retail wheeling advocates claim that rate differentials are due to cross-subsidization of resi-

dential customers by industrial customers of the high-cost utilities.⁵ The evidence does not support such a claim. The ratio of residential rates to industrial rates for the high-cost utilities is about the same as it is for the low-cost utilities (see Table 2). If any difference exists, it is that the high-cost utilities have a slightly higher ratio of residential to industrial rates. In other words, industrial customers of high-cost utilities have slightly greater discounts

relative to residential rates than do the industrial customers of the low-cost utilities. Therefore if the suggested subsidies do exist and are corrected for all utilities, that would make the current rate differentials larger, not smaller.

The truth is that both residential and industrial rates of the high-cost utilities are high relative to their neighbors' rates because these utilities invested in expensive, large, and risky supply-side resources supported by a regulatory environment which showed little interest in supply-side modularity, environmental risk, or wholesale competition. Supply-side resource costs have been (and, as noted below, will continue to be) the primary driver of rates.

Given this background, it is not surprising that some industrial customers are utilizing whatever arguments and pressure they can muster — including the threat of retail wheeling — to achieve further rate relief from high embedded supply costs beyond what was achieved through the nuclear imprudence litigation of the 1970s and 1980s. Despite the fact that in some regions of the country industrial interests supported large-capacity construction projects to provide necessary reliability,⁶ the response of many retail wheeling proponents is essentially: Someone else (utility shareholders or other ratepayers) should pay for costly power acquired on their behalf now that the bill has come due.⁷ "Stranded investment," and cost shifting to inelastic customers, is therefore

not an incidental *problem* of the retail wheeling proponents' agenda: It is the primary *object* of that agenda.

As in all public policy discussions, though, there is a danger in rear-view vision, and making prospective policy to solve yesterday's problem. Specifically, we argue, the retail wheeling argument confuses transitory cost bulges with long-term differentials, ignores necessary regulatory arrangements that will diminish the attractiveness of system bypass, and badly misreads the long-term terrain that lies ahead.

II. The Near-Term: Diminishing Returns in an Equitable Retail Wheeling Regime?

The premise of retail wheeling proponents is that substantial rate differentials among neighboring

utilities will persist, and therefore the freedom to "shop around" is worth the price. However, there are a number of reasons to believe that these differentials will not persist, or that they will not translate into the imagined bargains.

A. Average Price/Marginal Cost Differentials Will Narrow

First, even if there were no changes in ratemaking, utilities are not likely to repeat the "nuclear" mistake. Utilities that overbuilt have not in general been able to spare their shareholders from the consequences of their poor planning, and consequently a new regulatory bargain has emerged. (See Table 2). Utility managers have learned that their choice of new generation will be scrutinized against a wholesale market-based benchmark, that there will be close regulatory scrutiny

of the selected generation portfolio, and that plant modularity and environmental risks will be a key element in that scrutiny. In this connection, claims that utility DSM programs represent the next iteration of the "nuclear syndrome"⁸ are not credible: DSM advocates and skeptics alike are ensuring that DSM programs are heavily evaluated and scrutinized for cost effectiveness; the programs have generally been accompanied by cost recovery penalties if the programs fail to deliver; and such programs, unlike generating plant, lend themselves to swift revision or cancellation where shown not to be cost effective. Likewise, new supply-side capacity commitments are likely to receive enhanced scrutiny for their modularity, riskiness, and timeliness.

Table 2: Ratio of Residential Rates to Industrial Rates^a; Stock Price Change (1970-1990)^b

High-Cost Utility	Ratio	% Change	Low-Cost Neighbor	Ratio	% Change
DQE Inc.	2.0	-1	American Electric Power	1.7	9
Philadelphia Electric	1.7	-19	Potomac Electric Power	1.3	214
Long Island Lighting	1.3	-11	Pennsylvania Power and Light	1.4	86
Illinois Power Company	2.2	-53	IPALCO Inc.	1.4	110
Ohio Edison	1.7	-14	LG&E Energy	1.6	17
NIPSCO Inc.	2.1	-36	PSI Resources Inc.	1.7	-37
DPL Holdings	1.6	17	KU Energy	1.3	49
Centenor Energy	1.7	NA	Cincinnati Gas and Electric	1.5	22
Commonwealth Edison	1.8	-3	Wisconsin Energy	1.8	310
General Public Utilities	1.5	111	Allegheny Power System	1.7	87
Public Service of New Mexico	1.5	-43	Southwestern Public Service	1.7	156
Orange and Rockland	1.5	51	Delmarva Power and Light	1.8	61
Entergy	1.8	-10	Empire District Electric	1.5	69
IES Industries	2.1	NA	Northern States Power	1.6	190
Detroit Edison	1.4	37	CMS Energy	1.3	-7
Average	1.7	+2	Average	1.5	+89

a. Source: Prudential Securities, Electric Utilities: Comparative-Risk Study, Sept. 24, 1993.

b. Source: The Value Line Investment Survey. 1970 stock prices are not available for Centenor Energy or IES Industries due to their major corporate reorganizations in the 1980s. Note that over the last two decades, the stock prices of the high-cost utilities have, on average, essentially remained unchanged. The significant negative impact on shareholders becomes more apparent when compared to the near doubling of the stock prices for the low-cost group over the same period.

Second, as the assets acquired during a period of expensive overbuilding are depreciated, the rate differentials will return to more normal levels. While the python's digestion of the nuclear rodent is likely to be slower than many would like — or slower than can be achieved through alternative political means — it is inevitable.⁹

Third, many of the utilities with low rates today (especially coal-based Midwestern and Mid-Atlantic utilities) face large Clean Air Act compliance costs that will increase costs and rates on their systems relative to more nuclear-reliant systems.

Fourth, in markets such as the Northeast and Midwest, much of the presently observed price differential is an artifact of excess generating capacity. There are a number of factors, aside from the normal economic recovery pattern, that will tighten those markets. These factors include premature nuclear unit retirements (recently Wall Street analysts have predicted up to 25 such unit retirements within the next decade)¹⁰ and premature retirement of existing fossil fuel units due to the cost burden of meeting Clean Air Act requirements.

B. System Price/Risk Realignment and Transition Arrangements May Negate a Substantial Portion of the Perceived Short-Term Gains

Among industrial retail wheeling advocates with whom we have spoken, there seems to be a curious assumption that the system in which they seek to shop

around will be largely unchanged except for their ability to get lower-cost generation. This assumption is wholly unsupported.

First, we agree with the assessment that "the obligation to serve that utilities traditionally have operated under must be ended if retail wheeling is to be introduced rationally," even for customers who elect not to shop.¹¹ This has, in fact, been the rule adopted in the U.K. and Norway, where retail

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wheeling has been introduced as part of broader industry restructuring. The corollary of the demise of the obligation to serve is that customers who leave the system must return "under market-determined - not regulated - prices, terms and conditions."¹² It is anybody's guess how many U.S. industrial customers — particularly large ones with sensitive production processes — would prefer to take on the economic risks of a non-guaranteed power supply secured only by the contractual liability of retail power brokers or the ethical and political

compunctions of a distant utility of IPP. But it is highly likely that maintaining current levels of supply security will be difficult and come to such customers only at substantially higher levels of cost.

Second, a retail wheeling regime will inevitably require a more detailed and very different pricing regime for continued utility system support, which takes into account the cost and risks of providing various levels of capacity firmness, reserves, transmission support, balancing, voltage support and other services. These factors, too, are likely to erode somewhat the apparent generation bargain.¹³

Third, a retail wheeling regime would no doubt lubricate movement for substantial market-based reforms in transmission pricing. It would be hard for retail wheeling advocates and regulators to advocate and implement a system which forces utilities to "write down" the value of embedded generating assets to market levels without at the same time "writing up" the value of the transmission and distribution system to market levels. Conceivably such a "write-up" could offset entirely the initial "write-down" of generating assets.

Fourth, the "write-down" of nuclear generating assets resulting from retail wheeling is likely to have some peculiar system and price effects. If the U.K. experience holds, the market value of nuclear generation in a world without the retail franchise is likely to be zero or negative due to nuclear operating risks and de-

commissioning costs. For some utilities, the book value of nuclear assets approaches or exceeds total utility equity, making bankruptcy a likely prospect. Will market players emerge to purchase and operate these zero-value assets in a safe and reliable manner, and assume the substantial unfounded unit decommissioning costs to boot? Again, if the U.K. experience holds, the answer is "no." Accordingly, strategies will need to be devised to address this market gap. The most likely political solutions are a federal bailout or all-customer "transition charges" to cover unfunded nuclear decommissioning and operation costs. In either case, wheeling customers will pay as customers or as taxpayers. And, if the plants are decommissioned on an accelerated basis, the disappearance of that capacity will, in some regions of the country, accelerate the convergence of embedded costs and market price discussed above.

Fifth, the dissolution of the retail franchise is highly likely to increase dramatically the risk of financing new generation (or refinancing existing generation) from whatever source. Downgrading of utility financial ratings is already occurring due to capital markets' perceptions of increased retail franchise risk within the electric utility industry.¹⁴ Widespread retail wheeling would likely exacerbate this trend because of the increased risks it creates for utility investments and operations. It is folly to believe that marginal generation costs will not reflect this increased financial risk.

In short, retail wheeling will not be the cost-shifting bargain that its advocates expect it to be — assuming that the above issues are dealt with up front and in a fair and rational manner. Apparently recognizing this fact, some retail wheeling advocates have argued that these issues are "mere details" that "we can talk about later" — *after* customers are allowed retail wheeling. And some have dismissed the above argu-

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ments by contending that market-based pricing of the transmission system "def[ies] accurate identification measurement" and would encourage "monopoly rents"; that the presumption of an existing obligation to serve is "not realistic" as a starting point; and that it is effectively "impossible" to establish a market-based rule for system "return rights."¹⁵

It is precisely this evasion by retail wheeling advocates of critical issues, and the consequent potential for piecemeal cost-shifting and political manipulation, which has led even staunchly "pro-mar-

ket" power system economists to reject retail wheeling as a credible starting point. For example, Ruff states:

In the United States, competition in electricity is being defined in terms of "wheeling" rather than in terms of the open pooling and transmission model outlined here. As a logically consistent statement of how an electricity system can combine effective competition with economic efficiency, the wheeling model is seriously deficient or even non-existent.¹⁶

Similarly, Joskow posits that "a regime that relies extensively on competition can work reasonably well if all of the right pieces are put in place at the outset." He adds, "Retail wheeling in the U.S. is likely to emerge without all of the right pieces in place and, as a result, will probably be costly and inequitable."¹⁷

C. The Promise of Prospective Real Cost Efficiencies Is Not Credible

We have argued that the motivation for current retail wheeling proposals is an attempt to redistribute the cost of pre-IRP, pre-wholesale competition supply mistakes — mostly nuclear. But some advocates argue that retail wheeling will have salutary prospective pro-efficiency effects, citing recent utility downsizings.

On the supply-side, there are certainly likely to be prospective cost savings whenever a utility is well-focused on obtaining the most competitive prices for new capacity. However, as we argue below, that incentive can be cre-

ated more directly, and with far less damage to other interests, through a regime of wholesale competition in which, prior to acquiring new capacity, utilities must demonstrate through bidding or other competitive tests that they have obtained the best possible market deal. Retail wheeling is unlikely to achieve any additional generation cost efficiencies. No one has argued, as far as we are aware, that end-use customers can obtain new capacity less expensively than utilities can.

A part from generation, there could also be marginal efficiencies in administrative and general operations through downsizing or other restructuring. However, the effect of such gains here is limited: Administrative and general expenses typically account for a small fraction — as little as 5% — of the overall utility revenue requirement, and will in any event have to be borne in some form by customers whatever their supply sources.¹⁸ The principal component of utility rates will continue to be — as it has been historically — supply-side costs.

The most that can be said for the prospective impact of retail wheeling on supply costs is that it may permit a future shifting of costs away from customers with short- to medium-term contracts to generators who have made "bad bets" as defined by short- to medium-term markets, although it will not prevent the social expenditure of capital on those bets. In addition, as described below, the price of such prospective cost

shifting is likely to be the radical shortening of system investment criteria and hence substantial foregone medium- to long-term efficiencies at the end-use and system level.

D. Summary

We have argued that, even in the near term, cost-shifting-based rate reductions to retail wheeling customers are likely to be significantly diminished by factors driving up system marginal costs, as

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well as the realignment of system operations, risks and component pricing that would flow from any rational retail wheeling regime. We now turn to the long-run implications of retail wheeling for power system policy and operations.

III. Long-Run Impacts of Retail Wheeling: The Road Better Left Untaken

While retail wheeling is surely an opportunistic, near-term strategy by its proponents to shift embedded capacity costs, it will have obviously longer-term conse-

quences for power system planning and regulation. This point has at least been acknowledged by those proposing or examining more far-reaching U.K.-style utility industry restructuring which includes dissolution of the retail franchise.

The emerging picture of such a world contains some obvious features. Generation and transmission construction decisions will be driven by near-term bilateral contract dynamics rather than by traditional planning concerns of medium- to long-term system stability, diversification, fuel price risk, and newer concerns of modularity, plan robustness and environmental regulatory risk. Lacking long-term customer/utility relationships, and driven by prices rather than costs, power system investments in energy efficiency will disappear entirely, as they have in the U.K. and Norway. Finally, environmental concerns, now reflected in a variety of ways through IRP processes and state facility-siting regulation, will be wholly externalized into the realm of taxation and end-of-the-stack regulation. In short, much of what we call "energy policy" — that is, the stuff which fills the pages of this journal — will be replaced or marginalized by the imperatives of bilateral contract.

While the broad implications of this post-retail wheeling world are addressed by other contributors to this issue, here we focus on three questions:

- Is such a world compatible with a sensible and cost-effective approach to energy-related envi-

ronmental problems in the coming century?

- Is such a trend likely to fit with an emerging world of technological opportunity emphasizing economically efficient distributed generation?

- And does such a world satisfy the tests of political legitimacy and transparency?

A. Environmental Implications

We start by noting that the most critical economic and public policy challenges associated with the power system in the coming decades are likely to be environmental in nature. Current Clean Air Act compliance directives in the area of ozone smog and acid rain are just the beginning. A variety of additional power system-related environmental concerns are at the beginning or the middle of the regulatory pipeline, and are likely to emerge with unexpected rapidity. These include, at a minimum, toxic air emissions; small particulate emissions (now believed to cause more annual U.S. fatalities than auto accidents); and evidence that existing ozone smog and local sulfate standards are insufficiently protective of public health. The science of and regulatory response to the climate change issue could overwhelm even these significant regulatory concerns; already, the global insurance industry has begun to plan as if the climate change risk were real. Living sustainably within environmental limits will likely require a substantial increase in energy efficiency and renewable energy sources.¹⁹

Current IRP and utility-planning approaches at least open the possibility of integration of these emerging environmental concerns with traditional cost- and risk-minimizing generation and other system-planning concerns. NEES's recent NEESPLAN 4 commitments to DSM, renewables development, and sophisticated options-based wholesale power contracting²⁰ — which seek to balance near-term system rate concerns with medium- to long-run

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environmental risks — stand as an example of how this integration can occur.

In a retail wheeling world, by contrast, the utility with the cheapest near-term price wins. This is hardly likely to encourage medium- to long-range development of power system end-use efficiency or development of low-environmental-impact capacity in anticipation of future environmental regulation where such investments result in a somewhat higher near-medium term price. It is instead likely to encourage the continued operation of depre-

ciated fossil fuel plants as long as possible. For new capacity, utilities and other producers will — as they have in the U.K. — prefer investments with low capital requirements and short lead times, such as natural gas-fired combustion turbines and/or combined-cycle generators. Retail wheeling will also — as we have noted earlier — likely pose severe challenges to continued operation of nuclear plants. Whether this is a "good" or a "bad" thing environmentally on its own terms, nuclear shut-downs could require significant construction of new capacity to fill the gap — which, under the pressures of a fragmented retail market, is likely to be exclusively fossil.

There are a number of problems raised by this scenario. First, while gas-fired plants are cleaner than other fossil plants, they most likely will not constitute by themselves an answer to significant environmental challenges; for example, based on New England data, it appears that even substantial gas repowering would not bring the region into compliance with the 50% or more carbon emissions reduction goal believed by most climate scientists necessary to achieve climate stabilization. Second, a predominantly gas future would expose customers to the risk of rapid increases in the price of natural gas as well as environmental and cost risks associated with increased regulation of fossil fuel emissions. Third, there is the risk that a substantial amount of societal capital will be wasted should the environ-

mental picture in turn require substantial replacement of new "clean" coal and gas plants with renewables and efficiency — or, alternatively, that such a necessary transition will be resisted by powerful interests with a direct stake in preserving the economic viability of this "first wave" repowering.

The standard response to the concerns over incompatibility of sustainable energy decisions with a short-term retail price-driven environment is that such considerations can be dealt with through external taxation schemes — either emissions taxes or T&D taxes to support DSM and renewables — or through direct emissions controls. But such an approach is unlikely to avoid the problem of costly investment in generation made subsequently obsolete by successive waves of environmental regulation or taxes, or the practical problem that newly vested interests will successfully resist such regulation and taxes. In addition, taxation schemes are more likely to produce only token "set-aside" for renewables and DSM (as in the U.K.) than is an environment which requires a rigorous cost- and risk-weighted utility-specific comparison of these resources to conventional generating options. Decoupled from power system economics, such investments will be firmly ghettoized as "social programs," as if they offer no internal power system benefits. This marginalization of environmentally cleaner options runs contrary to the worldwide corporate

trend towards "industrial ecology," and related approaches.

It is indeed ironic that, just at the moment when cost-effective "pollution prevention" approaches have gained prominence in national, state and corporate policy, we would abandon perhaps the most powerful opportunity available to implement that approach — in the electric power sector.

B. Compatibility with Distributed Generation

The retail wheeling vision of the U.S. power industry's future imagines a world in which undifferentiated commodity bulk power from units sized and optimized to short-medium term contract flows are wheeled to the highest bidder. It is hard to reconcile this vision with the emerging opportunities inherent in distributed generation, which relies on strategically placed modular generating technologies such as wind

plants in remote load areas, fuel cells mounted in hotel basements, customer-site cogeneration, and rooftop PVs.²¹ Aside from lowering the environmental burden of today's electric power systems by reducing emissions and local transmission- and generation-siting impacts, the transmission facility savings associated with such strategically distributed generation are likely to be substantial.²²

Yet it is unlikely that utilities or other entities would make investments in such distributed resources in a retail wheeling environment, since their economics rest in large part on system-wide strategies to avoid transmission investment and upgrades, and optimize the deployment of generation system-wide. In a balkanized world of retail wheeling, these investments might make little sense on a stand-alone basis. Unless elaborate market mechanisms can be developed to capture and integrate the system value of these

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Have utilities tamed the scourge of soaring power supply costs?

distributed technologies, a large economic and environmental opportunity will have been precluded.

C. Political Legitimacy

The very existence of this journal is testimony to the high political saliency of electric power system issues, and particularly their interface with environmental concerns. Public concern about and reaction to power system environmental impacts and generation- and transmission-siting decisions have transformed the electric power scene in the last decade. Those concerns are likely to intensify rather than to abate. By wide margins, the American public continues to articulate a preference for exhausting lower-impact renewable energy sources and energy efficiency before conventional generating technologies are deployed, even at a somewhat higher cost.²³

The institutional and political response to these environmental and consumer concerns has been the creation of public energy facility-siting processes and integrated resource planning. While there is rarely complete public satisfaction with the results of these reviews, there is broad acceptance of the process. Retail wheeling and broader industry restructuring proposals with a retail wheeling component locate generation and siting decision making in the realm of short- to medium-term retail markets, and therefore nullify public participation in the resource selection process. Under retail wheeling, there is no forum

or criterion in or by which to justify a particular generating plant or transmission line as "least cost," or the best of the long-run alternatives. There is only the aggregation of thousands of retail generation contract decisions. In a retail wheeling world, there is no "big picture" into which any incremental generation or transmission decision can be coherently explained or justified: A facility is "needed" because a developer believes he or she can make money on it.

Aside from presenting the legal problem of reconciling this balkanized decision-making approach with existing state siting statutes requiring balancing of environmental, cost and "need" factors, retail wheeling thus presents a major political legitimacy problem. It remains to be seen whether the public will accept major siting decisions without the opportunity for meaningful public participation and discussion of facility economics and need. Our experience suggests that, given the high level

of public literacy and concern about energy issues, they will not.

At their core, retail wheeling and more ambitious U.K.-style restructuring schemes rest not only on short-term (and, we argue, mistaken) self-interest, but also on a particular political philosophy: the view that markets always "know best" and that the aggregation of private contract decisions is by definition democratically superior to planning of any sort. At a minimum, some retail wheeling advocates argue, efforts to influence the long-run shape and environmental impact of the electric power system should be confined to the legislative arena, and may not be internalized through economic regulation.

While it is difficult to directly dispute this Hayekian article of faith, as it is any political philosophy, we note here simply that this radical market vision is quite inconsistent with the lived American consensus and experience. First, the notion that the outcome of the shifting and instantaneous "referendum" of the marketplace is by definition good public policy runs directly against key elements of American public life — not least the reflective filtering process of republican representation and the tradition of delegation to expert agencies to resolve detailed matters which legislatures are not prepared to decide. Second, a significant number of American states have given explicit legislative direction to utilities and their regulators to consider and balance long-term cost and environmental

goals, while leaving the details to the commissions to work out.

Third, despite rhetorical claims that integrated resource planning represents the "capture" of utility commissions by environmental "special interests," the move towards energy efficiency and greater environmental concern in the regulatory process in recent years is in fact, as noted above, quite broadly congruent with the views of the American public — hardly evidence of an "undemocratic" insider conspiracy. Finally, we find it somewhat contradictory that political economists who consistently bemoan the intrusion of environmental considerations into the economic regulatory process are rarely shy about suggesting that economic analysis should be a major focus of the environmental regulatory process.

In short, a pragmatic political economy — the notion that markets should be used as an efficient means but not always to determine important ends — rather than mechanistic ideology has been the hallmark of the evolution of the power system debate and regulatory practice. The political legitimacy of that practice will, we believe, be drawn into serious question under a retail contract-driven regime.

IV. The Road From Here

As we noted at the outset, there is always a danger in fighting the last war. Designing an electric power regulatory system to address the problems of nuclear imprudence costs rather than the problems and opportunities that

lie ahead would, in our view, be a tragedy. The choice is not between the pre-IRP and pre-wholesale competition regulatory system of the 1970s and retail wheeling. It is between retail wheeling and the emerging reality of a regulatory system which incorporates aggressive wholesale competition and forward-looking environmental risk mitigation to ensure that cost and risk are minimized. (Indeed, where such controls were in place, as we have

noted, rate differentials about which retail wheeling advocates now complain are significantly smaller today.)

The outlines of that alternative system have begun to emerge, and have been debated extensively in these pages. First, such a system would require or encourage cost-effective wholesale competition, an agenda which is far from universally implemented. Second, write-downs of utility plant or termination of existing IPP generation commitments should be addressed politically head-on where the winners and losers can be openly identified and can debate, rather than

through the indirect device of retail wheeling. In wishing for the latter, as noted, retail wheeling advocates may well be disappointed that they got their wish.

Third, medium- to long-term environmental risks need to be more effectively reconciled with power system strategies to avoid consecutive wasteful waves of power system investment and subsequent obsolescence.

These recommendations surely lack the sex appeal of breathless trade press accounts of retail wheeling. But building peace is always less interesting than waging war, especially when it's the last one. ■

Endnotes:

1. See, e.g., J. Anderson, *The Competitive Sourcing of Retail Electric Power: An Idea Who's [sic] Time Has (Finally) Come* (Presentation to Utility Directors' Workshop, Williamsburg, Va.) (Sept. 10, 1993); J. Anderson, "Wheel in Cheaper Power from Quebec," *PROVIDENCE JOURNAL* (Mar. 29, 1993); "FUC Chief says buying cheap Canadian power wouldn't drop local costs," *PROVIDENCE JOURNAL-BULLETIN* (May 12, 1993, at D10).
2. Electric costs typically represent roughly 2% of total manufacturing costs in the United States, hardly a decisive factor in manufacturing profitability and industrial employment. MSB calculation, based on U.S. Census of Manufacturers, 1987. Even if these costs were significant, and could be reduced substantially through retail wheeling, the net job creation effect is likely to be negative, since larger industrial customers would be far more likely to "benefit" and transfer embedded capacity costs to small business. Yet it is small businesses with fewer than 20 employees which account for 80% of new jobs created during the period 1987-92; by con-

trast, large firms have had modest or negative job-creation records over the same period. Cognetics, Inc., "Who's Creating Jobs?" (Cambridge, Ma. 1993). It is hard to see how shifting electric costs from job-shedders to job-producers will increase employment.

3. C. Studness, *The Geography of Electric Rates*, PUB. UTIL. FORTNIGHTLY, Oct. 1, 1993, at 36.

4. After constructing a low-cost plant in the early 1970s (Point Beach), Wisconsin Electric proposed to build additional units in the mid to late 1970s. Due to planning uncertainties, however, the Wisconsin Public Service Commission denied these requests. Likewise, New England Electric System, during the late 1970s and early 1980s, consciously scaled back its nuclear commitments and undertook a commitment to fuel diversification and conservation. It currently has rates considerably below the New England average.

5. It is not clear that industrial customers actually subsidize residential customers. In fact the subsidization may run the other way. For a discussion of the potential for subsidization of industrial customers by residential customers, see David Schoengold, *Allocating the Cost of Generating Capacity: A Discussion Paper on the Question of Interclass Subsidies* (Manuscript, MSB Energy Associates, Inc) (Nov. 1993).

6. See, e.g., THE NEW ENGLAND COUNCIL, *REPORT ON THE REGION'S ENERGY FUTURE* (Nov. 1990); Mass. DPU Docket 87-169, Pre-Filed Testimony of Karl Christ on Behalf of The Energy Consortium; R. Buck, "Our Need for Power Plants," PROVIDENCE JOURNAL (May 14, 1989).

7. "PUC chief says buying cheap Canadian power wouldn't drop local costs," PROVIDENCE JOURNAL-BULLETIN (May 12, 1993) ("Retail wheeling advocate Edward] Burke questioned why the PUC is so interested in protecting private utility companies that, he said, made bad decisions to invest in expensive nuclear plants and now charge

Rhode island industries the nation's highest electricity rates.")

8. See, e.g., B. Black and R. Pierce, *The Choice Between Markets and Central Planning in Regulating the U.S. Electricity Industry*, 93 COLUM. L. J. 1431-32 (1993).

9. The Maine PUC recently rejected contentions by Central Maine Power of "substantial and long-term" average price/marginal cost differentials, citing this point and many of the factors discussed in the text below. See Maine PUC, *Investigation of Central Maine Power Company's Resource Planning, Rate Structures, and Long-*

Term Avoided Costs, Docket No. 92-315, Feb. 18, 1994, at 26-27; 32-33.

10. P.C. Parshley et al., *Should Investors be Concerned about Rising Nuclear Plant Decommissioning Costs?*, Shearson Lehman Brothers, Jul. 6, 1993.

11. Rodney Frame, *Characteristics of a 'Good' Retail Wheeling System* (presentation to Electric Utility Business Environment Conference, Denver, Colo., Mar. 16-17, 1993) at 6.

12. Frame, *supra* note 11.

13. Frame, *supra* note 11.

14. Daniel Scotto, *Weakness Confirmed: Moody's and S&P's Pronouncements Do Not Bode Well for the Electric Industry*, FORTNIGHTLY, Dec. 1, 1993, at 34-36.

15. See, e.g., Anderson, *supra* note 1, at 10-16.

16. Larry E. Ruff, *Competitive Electricity Markets: The Theory and Its Application*, Dec. 1992, at 32 (forthcoming in a volume on electricity markets, M. Einhorn, ed., Kluwer Academic Publishing Co.)

17. Paul L. Joskow, *Emerging Conflicts Between Competition, Conservation and Environmental Policies in the Electric Power Industry*, draft, at 26 (keynote address for Public Utility Research Center conference on competition in regulated industries, U. of Fla., April 29-30, 1993).

18. Calculation by the authors based on analysis of FERC Form 1 data for selected mid-Atlantic utilities.

19. See, S. Brick, *Impending Regulatory Changes for Ozone, Sulfur Dioxide, and Air Toxics* (MSB Energy Associates, Nov. 1993); *Pollution, Pollution: Federal Air Standards Permit Dangerous Particulate Levels*, SCIENTIFIC AMERICAN, Nov. 1993; D. W. Dockery et al., *An Association Between Air Pollution and Mortality in Six U.S. Cities*, 329 NEW ENGLAND J. OF MEDICINE 1753 (Dec. 9, 1993); E. Linden, *Burned by Warming: Big Losses from Violent Storms Makes Insurance Industry Take Global Climate Change Seriously*, TIME, Mar. 14, 1994 at 79.

20. See, NEW ENGLAND ELECTRIC SYSTEM, *NEESPLAN 4: CREATING OPTIONS FOR MORE COMPETITIVE AND MORE SUSTAINABLE ELECTRIC SERVICE* (Nov. 1994).

21. C. Flavin and N. Lenseen, *Reshaping the Power Industry*, in L. Brown, et al., *STATE OF THE WORLD 1994* 72-75 (New York, 1994); D. WEINBERG, D. MOSCOVITZ, T. AUSTIN, C. HARRINGTON, C. WEINBERG, *FUTURE UTILITY AND REGULATORY STRUCTURES: IF YOU DON'T KNOW WHERE YOU'RE GOING ANY ROAD WILL GET YOU THERE* 4-7 (Regulatory Assistance Project, Dec. 1993) at p. 4-7.

22. Flavin and Lenseen, *supra* note 20, at 75.

23. See, e.g., "America at the Cross Roads — A National Energy Strategy Poll," Vincent Bregelio Research/Strategy/Management, Inc. and Greenberg-Lake Analysis Group (Jan. 11, 1991).

