The Lessons and Legacy of Integrated Resource Planning

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Integrated resource planning (IRP) has been a major innovation in public utility policy and regulation. In just over a decade, IRP went from an untried concept to become a widely practiced, even preferred, method of utility planning across the United States. As meteoric as IRP's rise to prominence has been, IRP is threatened with an equally meteoric demise as restructured, competitive markets appear to be the next major innovation in electric utility regulation.

This paper looks at the forces affecting IRP from both macro and micro perspectives. We seek to determine how the larger forces interacted with specific policy features to create a highly favored policy approach, as well as to usher it out the door. The rise and apparent fall of IRP offers valuable lessons for energy policy and regulation. A major focus of the paper is to analyze the reasons that IRP is struggling for survival today: we argue that certain problems were inherent in the *foundations* of IRP and that other problems arose with the *implementation* and *practice* of IRP. Further, while we acknowledge and discuss the problems and failures of IRP, we also observe that IRP has had its share of successes. We examine these successes, particularly those that will remain as a legacy within the electric utility industry no matter what structure emerges from the current debate over the industry's future.

INTRODUCTION

Policies, like politicians, are a lot like boats drifting at sea. Usually the policies drift in the doldrums of the status quo, but at other times they can be swept along by strong political winds. As with the response to the energy crises in the 1970s, changes in energy policies tend to be the result of such sudden shifts in wind direction—the larger social and political environment. But because the changes in wind direction can be difficult to forecast, policies tend often to be more ad hoc than grounded in theory and the product of careful planning.

For years, the light breezes of traditional utility regulation kept electricity supplies and demand predictable. Economic and energy growth were seen as necessarily intertwined. But during the late 1970s and early 1980s, partly in response to greater national sensitivity to energy issues, the growing environmental movement, and the increasing awareness of the harmful effects of fossil fuel and nuclear energy use, the standard form of utility regulation began to disintegrate. Regulators became more cautious about allowing utilities to build more capacity.

As the winds changed, policy debates increasingly heard the heretical viewpoint of ''negawatts,'' along with the insight that people don't want energy per se but the services energy can provide (Lovins 1976). The idea that economic growth could be separated from increased energy use began to take hold. As traditional supply-side thinking waned, the idea of an integrated assessment of supply and demand resources emerged; a more balanced assessment of the different ways to meet the demand for energy could, in theory, allow for the attainment of a variety of policy goals, among them economic efficiency and environmental protection. This was, in short, the idea behind *integrated* resource planning.

Below we attempt to play the role of the meteorologist: to understand in part what makes the political wind blow and change directions. We note the importance of placing the specific policies of a given time into the larger political climate. IRP was both emboldened by ''progressive'' (or aggressive) utility regulation in the 1970s and early 1980s, as well the victim of a more conservative political climate in the late 1980s and 1990s. We believe that a discussion of the broader institutional forces at work helps to place the internal functioning of IRP in context. The paper thus takes two angles in assessing IRP—the macro (or institutional) and micro.

THE INSTITUTIONAL (MACRO) PERSPECTIVE

The issue that has developed in utility regulation—and that has led to the demise of IRP—is whether markets are better at addressing social needs than regulation. This debate mirrors broader social debates concerning the role of government in the economy and in other social arenas. More pointedly, the debate mirrors the standard Republican/Democrat debate over the interference/protection of government.

The characterization of the government/market interface is largely a product of the prevailing power structure and thus prevailing political and economic ideology. That is, a more conservative, ''free'' market ideology might interpret government regulation as interference with market functioning; an alternative view might be that no markets are truly free. The so-called ''interference'' of government is, in fact, an essential feature of markets. For example, one might ask whether nuclear energy would ever have been a viable energy supply option without the ''interference'' of government that limited liability in case of an accident (Bromley 1989).

All markets function within legally defined parameters. These parameters, or legal foundations, provide a predictable (and, ideally, flexible) structure for market exchange to take place. The legal foundations (rights and duties) determine who may do what to whom and who must pay whom to stop the imposition of costs. As Bromley (1989, 224) writes, ''The choice is not between the market and the government; it is, rather, one of choosing alternative institutional arrangements to guide and to sanction initiative in socially desirable directions.''

Markets, including the electricity market, function within an established framework of rights and duties that is largely determined by powerful social forces that use the control of government to shape the way rights and duties are distributed. The relative power positions of interested parties thus plays a significant role in determining what is an ''externality,'' and what is not. For example, before the Clean Air Act, industry had the right to impose the ''externality'' of polluted air on others—that is, society had no right to clean air. After the passage of the Act, society was granted such a right, and the externality was gone (except for residual emissions). Similarly, IRP may have opened the door to consideration (internalization) of different factors—such as environmental issues—in putatively ''market-based'' exchanges because of the belief that to do so would be socially preferable (optimal).

That such factors may again be considered as external to market transactions in a restructured, ''competitive'' market does not indicate that they are, thus, *a priori* external to such exchanges, but rather that they have been redefined as external by the forces exerted by those in power. That is, the market ideology that argues for the reduced role of government in the market is really arguing for a *different* governmental role—one that shifts the distribution of rights and duties, and thus the burden of costs and the pleasure of benefits. That such factors may be externalized is merely the result of a shift in the political power base. Simply, if a particular institutional framework favors some market participants over others, those it favors will seek to establish and perpetuate that framework in law. Conversely, those harmed by a particular situation will seek to have the laws changed—in effect, to legislate the externality away.

But market proponents argue that you do not need to change laws because, as the costs of externalities rise, bargains will take place that result in internalization. But one of the primary reasons *for* government action is high transaction costs (the development of information, the creation and enforcement of private contractual agreements) that prevent the creation of markets by making bargains difficult for those on the short end of the initial endowment of rights, duties and wealth (Dahlman 1979). Thus, while internalization may be preferable, it will not happen to the extent that transaction costs prevent the creation of markets; and without markets, after all, you can't have ''market failures.''

The bottom line is that the ''free market'' is *not value neutral,* a feature touted by market proponents as an advantage over the inherently value-based political process. By assuming that the status quo institutional framework (legal entitlements and wealth) is irrelevant as far as market exchanges are concerned (that transaction costs are zero), market proponents implicitly assume the social acceptance of this framework—as if this framework were not the product of past social decisions (political and economic) regarding the proper range of rights and duties. *Yet public policy, including IRP and restructuring initiatives, is precisely about the allocation of values and the allocation of rights and duties.*

For the regulation of electric utilities, the institutional structure is determined primarily by executive authority in the public utility commissions (with legislative direction). That is, the profit utilities are allowed to make, what costs they must consider, and what their customers must pay are all ultimately determined by the regulatory authority. To the extent that regulatory authority reflects existing shifts in political power, so will regulatory intervention in markets reflect such power shifts. The emergence and demise of IRP fit into this shifting policy climate. Clearly, IRP changed the direction of costs and benefits, as will a ''competitively'' restructured market. Both forms of resource policy are determined by social, and politically powerful, ideas and institutions, which in turn reflect different ideas of how we seek ''social optimality.'' *Neither* form of policy is value free or apolitical.

The protection provided to the public by the IRP process against the risk of overbuilding and environmental degradation (among other things) will not be as forthcoming under the ''deregulated'' environment. Instead, as the market mantra goes, we will get as much of these things as we are willing to pay for. But rather than characterizing the situation as one where utilities are now free from regulation, we can

understand it as a shifting of the risks and costs from the utility (and its shareholders) to the public.

As we discuss below, the fact that IRP was ushered quickly in and out the revolving policy door suggests that utilities may have been less than willing participants in the progressive regulatory ride that created IRP. The institutional fragility of IRP is also suggested by its sensitivity to shifts in the political climate. IRP may have been instituted because the political climate was right, but it did not sink institutional roots to the extent that it did not capture utility self-interest. But restructuring, just like IRP, will redistribute costs and benefits, and risk, in ways that benefit those who have gained political leverage. We should not pretend that we are avoiding the governmental imposition of value choices when we move away from IRP. Imposing fewer restrictions on market activity is a choice made by social institutions (government). The question we need to ask in such situations is whether the choice truly reflects *socially* articulated needs and desires; that is an important question for a democracy.

THE DEMISE OF IRP (FROM THE MICRO PERSPECTIVE)

IRP is a creation of the institutions that govern utility operations—principally public utility commissions (PUCs) and similar regulatory bodies. The rapid rise of IRP is largely attributable to the power that PUCs have to develop and implement regulatory policy. IRP was established in many states with little direct involvement of state legislatures. For example, the practice of IRP in Wisconsin arose primarily from an existing power plant siting law, which was interpreted to justify an ''advance plan'' to consider long-term supply and demand alternatives (NARUC 1988). In other cases such as in Georgia, state legislatures gave PUCs a broad mandate to implement IRP as part of utility resource prudence preapproval (Mitchell 1992). While the implementation and practice of IRP varies across the United States, a common feature of IRP is its strong dependence on the support of PUCs or similar regulatory body. From an institutional perspective, this dependence is a Faustian bargain. While it is a fast way to enact public policy, it provides a weak base upon which to sustain the policy. Regulatory commissions typically consist of 3–5 persons who are either politically appointed or elected directly. As politics change, PUCs can only be expected to change, too. Regulatory policies, such as IRP, are vulnerable to these changes, especially if a broad base of support has not been established outside the regulatory arena.

The history of IRP shows this vulnerability. IRP reached its zenith in the early 1990s. A survey by Mitchell (1992) shows how far IRP had gone. She found that 20 states had established an IRP framework that was either ''full featured'' or only lacking one necessary feature; 21 states had either initiated processes to establish IRP or were investigating its development; and only 9 states had shown little or no progress toward establishing an IRP framework. Since that time a few other states have adopted IRP in some form, but generally IRP began its demise from the public policy arena in the early 1990s. While technically IRP may still exist in those states that adopted it, IRP has been eclipsed by other policy initiatives and industry developments, such as the rapid demise (proposed or actual) of utility DSM programs in many states, such as California (DSR 1994), Indiana (DSR 1995c), Georgia (DSR 1995a), and Minnesota (DSR 1995d). Because DSM is an integral part of IRP, the fall of utility DSM can be taken as a clear indicator of what is to come for IRP. The Arkansas Public Service Commission already has decided to drop all formal IRP and mandatory utility DSM in the state (DSR 1995b).

At its zenith IRP appeared to be firmly established as the accepted, ''progressive''—even ''enlightened''—method of utility planning. Many utilities that had been forced by their regulators to implement IRP appeared to be converts to IRP principles as they publicly proclaimed the merits of IRP (Eliesen 1992; Porter 1987). This is not surprising since, as a regulated entity, it was in the utilities' best interests to satisfy the regulators. Now, as utilities debate the future, there is little utility support for continuing IRP, an indication that IRP did not take deep root within the utilities' corporate ''culture.''

IRP even reached out internationally. It is interesting to note, however, that with a few notable exceptions (e.g., Canada and Denmark), IRP never really took root to any great degree outside the US. Several nations examined the feasibility and desirability of implementing IRP, but concluded that IRP was best suited for the US system of regulated, vertically integrated, investor-owned utilities (UNIPEDE 1994). The lack of strong, central regulation is a major difference between utility industry structure in the US and most other nations of the world (Kahn & Gilbert 1994). This difference explains some of the reluctance or inability to put IRP into practice in other countries. This was a hint of the problems to come for IRP in the US as strong, central regulation of utilities has come under attack.

While IRP seemed to be the status quo just a few years ago, today the world is turned upside down for IRP. With regulation under strong attack across the US, the future of IRP as we have come to know it is dim (Hirst 1996). Most IRP proponents have conceded that IRP cannot survive in a deregulated, vertically disintegrated world. IRP would be difficult to practice if the industry is fragmented into separate functional units (generation companies, transmission companies, distribution companies, retail services merchants, etc.) since there would be no single entity responsible to perform

all the functions necessary to provide electricity to a captive set of customers as now exists under the regulated monopoly structure (Tonn, Hirst & Bauer 1994). Instead of working to preserve IRP, the focus of IRP proponents has shifted to working to ensure that other mechanisms are put into place as part of restructuring initiatives that still will achieve the public policy goals of IRP, such as energy efficiency, renewable energy and environmental protection.

In the final analysis we believe that the inherent incompatibility of deregulated, competitive markets with regulatory driven planning is the major reason for IRP's demise. Yet the weaknesses and internal pressure we identify are not insurmountable. Solutions to some of these problems and adaptations to changing conditions could allow IRP to continue to govern utility resource decision-making. However, the external pressure from larger political and economic changes stemming from a broader movement for reduced government and regulatory control over all types of markets spells doom for IRP as it has come to be practiced.

Although the apparently rapid demise of IRP may come as a major surprise to many of its practitioners (utility staff, regulators, intervenors) given its meteoric rise to prominence, widespread implementation and apparent maturity, the fall of IRP should not be such a surprise. Certain warning signs were present early on. We see four main factors that have led to the fall of IRP: (1) weaknesses in the foundations of IRP, (2) weaknesses in the practice of IRP, (3) internal pressure from economic and technological changes within the utility industry, and (4) external pressure from larger economic and political changes. We discuss these below.

Weaknesses in the foundations of IRP

To go from the mainstream to the backwaters of utility regulation and public policy in such a short time suggests that IRP was really not so firmly established in the beginning. We argue that cracks in the foundation of IRP were present from the start—cracks that grew rapidly due to internal and external pressure, and that will eventually contribute to the fall of IRP.

Part of the problem is that the theory of IRP (like many public policies) was never really firmly grounded before IRP was put into practice; IRP did not develop from a robust body of academic research and writing. As an example, in a handbook on IRP prepared for regulators and their staff, there are only three citations to peer-reviewed, academic literature out of a total of 33 references cited (NARUC 1988). Of these, only Cavanagh (1986) specifically addresses IRP. This is not to say that all public policies should be based on academic research and writing. However, IRP was largely advocated as an economic model for achieving desirable public policy objectives, and as an economic model, IRP was not well supported by economic research and writing, as we discuss later in this section. Perhaps advocates saw this as an opportunity to remove IRP from politics and make it appear as an ''economically rational'' choice. Who could be opposed to *least-cost* utility planning?

While it has some academic roots, IRP is inherently pragmatic, having been built largely from a body of regulatory responses to problems associated with electricity production and use. The basic premise of IRP—that utilities should invest in the lowest cost supply or demand resources—fit well within the regulatory school of thought that views energy utilities as providing a fundamental public service. As a result, IRP was often adopted as regulatory policy even though the theory and practice were not extensive. Regulatory precedents in one jurisdiction were often used as the basis to implement IRP in another jurisdiction (NARUC 1988).

Further, fundamental tenets of IRP were often accepted by regulators and proponents as standard practice or conventional wisdom without much scrutiny, including: (1) bills, not rates should be minimized, (2) DSM is equivalent to supply resources, (3) the market failures and barriers for energy efficiency and renewables are so great that market intervention is appropriate, and (4) utility regulation is an appropriate forum for treating environmental externalities. All these tenets are currently under attack under current deregulation and restructuring initiatives, and it is likely that none of them will continue to be accepted as ''truths.''

The ''standard tests'' for assessing the cost-effectiveness of DSM provide an example of how a critical element of IRP became adopted as the industry standard practice without much scrutiny as to its theoretical validity or practical impact. The standard tests were first developed by the California Energy Commission (1987), and then widely accepted as the analytical tool to assess the cost-effectiveness of DSM within the context of IRP. Only after IRP and DSM had been well established did critiques of the standard tests arise in the literature, which argued that the ''cost effectiveness'' measured by the tests did not measure economic efficiency and contained fundamental biases (Braithwait & Caves 1994; Herman & Chamberlin 1993). By this time, however, criticism of the tests was a moot point since restructuring initiatives had largely eclipsed any concern over getting the tests ''right.'' That there could be such a fundamental argument over the validity of the economic tests used to justify DSM spending by utilities at such a late date points to a fundamental weakness in the practice of IRP.

A related problem was that the IRP ''community'' of regulators, regulatory staff, environmentalists, and other advocacy groups is quite a closed group. Much of the basic research on IRP issues and development of IRP concepts was per-

formed at national energy laboratories and through regulatory institutions (such as NARUC), which were largely IRP proponents. Critics of IRP often were effectively blocked out from significant influence, which meant IRP was developed and put into practice without being significantly affected by external criticism—criticism that may have yielded a stronger, more robust policy through greater experimentation and innovation. Some might argue that IRP quickly became an industry of orthodoxy as a means to give IRP a sense of legitimacy and to provide a unified front against its detractors.

IRP had its critics from the beginning. Generally the criticism focused on the idea of ''least cost'' planning and other basic elements of IRP theory. Ruff (1988, 19) criticizes IRP based on neoclassic economic analysis and concludes, ''[T]here is little economic logic to many of the most widely accepted slogans in the least-cost planning movement.'' Kahn (1991, 16) similarly argues that markets are much more efficient than any governmental planning agency at matching supplies of goods and services to customer demand. Consequently, Kahn concludes that ''. . . [I]ntegrated resource planning, as commonly conceived, is wrong-headed.'' Other neoclassic economists have criticized many of the fundamental underpinnings of IRP, such as DSM. Sutherland (1991) questions the existence of many of the market barriers and failures used to justify DSM. Black & Pierce (1993) argue for the superiority of markets, private incentives and decentralized decision-making over ''central planners'' trying to correct perceived large-scale market imperfections through ''negawatt acquisition programs,'' environmental adders and other elements of IRP. Houston (1992, 3) argues, ''Market-based pricing is the most important element promoting efficient demand-side behavior in the electricity or gas industry.''

Another inherent problem with IRP has been its reliance on DSM to treat customer behavior and choices as a variable subject to utility control. DSM has been viewed as an energy ''resource'' that can be tapped just as readily as power produced from a generation resource. Whether or not this is valid is beyond the scope of this paper. However, what is clear from DSM experience to date is that customer behavior and choices are complex—they can't simply be programmed to respond as the utility or regulators wish to meet DSM and related IRP objectives. Customers may not accept or respond to DSM programs for any number of reasons. Often policies or programs that seek to change behavior through ''incentives'' fail because of poor understanding of economic motivation and consumer behavior (Sanstad & Howarth 1994).

Weaknesses in the practice of IRP

The relative ''success'' of IRP may be one of the reasons that IRP is in trouble today. Implementation of IRP has required regulators to exert strong authority over utilities. In doing so, regulatory commissions often have largely ignored the criticisms of IRP opponents, which worked to strengthen and coalesce their resistance. We believe that the polarization of IRP into an issue fought between opposing camps also may have stymied experimentation and innovation in that there may have been less willingness to compromise or admit mistakes for fear of losing the battle. Regulators and advocates saw IRP as serving the common good—a policy instrument to yield ''least-cost'' energy solutions. Proponents touted IRP as a ''win-win'' policy—everyone benefited to some degree. For IRP to survive, it needed to prove its effectiveness and avoid any failures that could be used by opponents in their battles against it.

The rhetoric and attacks from one side to the other became increasingly shrill as IRP rose in prominence (e.g., Galloway 1994). The intensity of the debate heated up as deregulation initiatives began in the early 1990s, although the policy debate shifted from the desirability of IRP to that of regulation itself. IRP is likely to fall victim to the backlash against regulation in general. Deregulation advocates have seized the political momentum and cite IRP as an example of regulatory hubris—an overstepping of regulatory authority with disastrous results. The cure, according to deregulation advocates, is not simply to abolish IRP, but to abolish or diminish regulation to the greatest extent possible (Black & Pierce 1993; Ruff 1994). And even in those areas where economic regulation is still justified due to natural monopoly characteristics (principally transmission and distribution ''wires'' functions), such regulation should be ''light-handed'' and provide market incentives to meet regulatory objectives.

Problems with the practice of IRP surfaced early on. One of the biggest problems, and the one that really worked to coalesce the opposition to IRP, was the impact IRP had on utility rates. While the extent of actual rate impacts is debatable (Pye & Nadel 1994), in the end some customers would not accept any amount of rate increase to support IRP initiatives in DSM, renewable energy development or environmental externalities. For many large industrial customers the lesson is clear: rate impacts matter, no matter how small. Many of these rate sensitive customers complained of large disparities between what they paid in extra bills to their utilities in comparison to the direct benefits they received by participating in utility DSM programs. These customers argued that they were subsidizing other customers—even potential competitors (Houston 1992). Disgruntlement with IRP led its critics to blame the wide rate disparities that exist across the US on regulation and IRP (Studness 1993). Cohen & Kihm (1994) counter these arguments, blaming high rates principally on over-ambitious nuclear construction programs.

Another major problem in the practice of IRP was that the process became protracted and laborious in some states. The plans became so complex and lengthy as to diminish their worth and make them nearly incomprehensible to many parties. The authors' experience with IRP across the United States has been that documents in a typical IRP case consist of 10–20 or more volumes of a utility's plan and hundreds of pages of prefiled testimony, exhibits, rebuttal testimony, transcripts and related documents of public record. It is a daunting task to sift through and make sense of all the data, analysis and testimony in a typical IRP case. Plans also became increasingly technical and detailed, allowing scrutiny of the most minute assumption or datum. Battles frequently emerged over any number of technical details, such as demand forecasts, production cost projections, and DSM program impacts—battles typically waged by consultants hired by opposing parties due to the complexity of the issues.

A related problem to the increasing complexity and duration of IRP processes was the claim made by utility managers of "micromanagement'' by regulators and intervenors over utility operations. A task force established in Massachusetts to examine electric utility market reform cites ''micromanagement'' as one of several problems reported to the Department of Public Utilities with the state's IRP process (EUMRTF 1994). Other problems cited included inflexibility, and the cost and time required to complete the process, a problem discussed above. Utility managers had to wonder, ''Whose utility is this, anyway?'' Any aspect of a utility plan could be questioned by regulators and intervenors. Utility managers and planners that developed IRPs in apparent good faith were called to task by regulators and intervenors for failing to do a good enough job, whether in the design of DSM programs or choice of a new generation technology (e.g., Mendl 1992).

DSM has been a lightning rod for much of the controversy over IRP. DSM planning, program design and implementation has been one area of particular disagreement between utility managers and DSM proponents, including commissioners, commission staff and intervenors. IRP proponents never seemed satisfied with utility DSM plans—there always seemed more that the utilities could be doing. DSM resource assessments and plans were questioned and deemed inadequate in jurisdictions across the United States (e.g., MDPS 1992). Commissions responded by ordering the utilities to procure greater amounts of DSM resources than in the utility plans (e.g., MPUC 1992). Other conflicts have arisen over appropriate DSM spending levels, estimates of DSM ''resource potentials,'' best utility DSM practice, appropriate cost tests, actual results and cost-effectiveness, and even the very meaning of DSM itself (e.g., Does it include fuel-switching? Load promotion?). Utility DSM spending increased rapidly with the rise of IRP, which invited scrutiny. Critics such as Joskow & Marron (1993) charged that actual DSM costs were significantly higher than projected costs, meaning that much utility DSM is not cost-justified. DSM proponents responded by attacking such analyses and pointing to ''best practices'' as being highly cost-effective (Lovins 1994).

Consideration of environmental externalities became part of the practice of IRP in many jurisdictions (ECO Northwest 1993). A variety of approaches have been taken to treat externalities—both quantitative and qualitative. Quantitative treatment of externalities resulted in such a wide range of values—as much as an order of magnitude (Hall 1990)—as to raise legitimate concerns over their accuracy and use. Qualitative treatment avoids problems with valuation of externalities, but can be difficult to incorporate into an objective decision-making framework. These and other problems have caused treatment of environmental externalities to be effectively dropped from IRP practice before the more recent moves towards restructuring and deregulation.

Internal pressure from economic and technological changes within the utility industry

The conditions within the utility industry today are markedly different from the conditions that gave rise to IRP in the 1970s and 1980s. IRP was born largely as a response to large-scale coal and nuclear power plant construction and operation. IRP attacked the presumption of high, steady demand growth that was leading to massive utility construction and sought to balance utility resource portfolios by trying to ''level the playing field'' of competition among conventional fossil and nuclear fuel technologies and alternative technologies that were less damaging to the environment, such as DSM, gas-fired cogeneration and a host of renewable technologies.

Today few, if any, utilities are considering massive construction programs. Demand growth has slowed greatly, and overall the United States has excess capacity. Natural gas supply, price and generation technologies have fundamentally changed the market for new generation. Large scale nuclear and coal generation technologies are no longer the primary choices for new generation. New generation, when needed, is generally natural gas-fired combustion or combined-cycle turbines, which have short lead times and come in relatively small increments of capacity. Consequently, they minimize utility financial risk and produce electricity efficiently and relatively cheaply.

As we have mentioned throughout this paper, DSM has been an integral part of IRP. IRP has provided a framework and process to evaluate alternatives to investments in traditional supply-side technologies. DSM has been one of the primary

resource alternatives evaluated within the practice of IRP. The conditions that existed in the 1970s and 1980s made investments in DSM an attractive option as a means to slow demand growth and reduce the need for new generation. Conditions in the 1990s are markedly different—demand growth has moderated greatly and new generation alternatives are much less costly. Hirst & Eto (1995) examined the justification for utility DSM and concluded that, due to such changed conditions, the opportunities for utilities to carry out beneficial DSM programs have been substantially reduced. While IRP could exist without utility DSM, the shift away from DSM to new generation alternatives has coincided with a shift to rely on competitive markets to direct investment in new energy resources when needed. The justification for IRP under these changed conditions—limited DSM opportunities, relatively abundant existing generation, relatively cheap new generation—also is weakened.

Rate disparities among utilities have been major drivers for deregulation and restructuring. The sources of such rate disparities are many, but whatever the reason they do represent failures of existing utility regulation to contain utility costs. But even states with relatively low utility costs, such as Wisconsin and Minnesota, are moving ahead with deregulation and restructuring, which suggests that the impetus for change is rooted deeper than simply rate relief.

External pressure from larger economic and political changes

Electric utility regulation and policy do not occur in a vacuum. External economic and political forces have affected and will continue to affect the regulatory arena. The failure of centrally planned economies that began in the late 1980s coincided with a movement to diminish the size and scope of governments in many Western industrial economies, as typified by the ''Reagan revolution'' of the 1980s in the US and the Thatcher administration in the United Kingdom. Critics of ''big government'' use the fall of centrally planned economies as "proof'' of the superiority of ''free, competitive markets.'' As noted earlier, a growing school of conservative thought holds that unfettered competition among market economies is simply the ''natural order'' of modern, industrialized democracies. Customer choice and the ability of business and industry to respond to customer choice unfettered by regulation is the ideology driving this global change.

IRP requires relatively strong exercise of regulatory authority. This helps explain why IRP rose to prominence so quickly in the US where regulators have traditionally had a great deal of authority over all aspects of utility operation, and why IRP never really took root in other countries and jurisdictions where regulatory authority is much more limited. We posit that it is this strong exercise of regulatory authority—rather than IRP per se—that has created the strong backlash against regulation in general.

Finally, IRP attempted to correct a number of problems with traditional rate-of-return regulation of public utilities. However, IRP did not correct certain problems inherent in the traditional regulatory structure—problems now being addressed in the debate over the industry's structure—such as more cost-based pricing, more competitive generation markets, and more market-based incentives for utility performance.

THE LESSONS AND LEGACY OF IRP

IRP does offer some lessons for policy makers. IRP proponents were highly successful in getting IRP adopted as public policy by targeting public institutions that could effect change quickly and comprehensively—PUCs. But IRP also shows how policies can be quite ephemeral, no matter how seemingly beneficial and ''established,'' and especially if anchored principally by support of PUCs. As we discussed earlier, it is important for proponents of established policies to listen and respond to criticism—to work to sink institutional roots by broadening the support base.

Further, it is clear that policy approaches are not inevitable or pre-determined. IRP may have appeared to some proponents as the enlightened way of the future, yet the latest phase in utility regulation has shown otherwise. Clearly, the same path that led to adoption of one policy is open to opponents of that policy. Just as proponents of IRP had political power a decade ago, the pendulum has swung to a more conservative view. In a mixed economy, government is always involved in the market; it is the ability to control government and articulate your ideology that determines who ultimately wins and loses. IRP is losing now because its opponents have effectively captured the momentum for change.

Before IRP fades into the history of regulation, however, we believe it is important to acknowledge some of its successes. Despite some of its shortcomings and weaknesses, IRP will leave a legacy of having fundamentally changed the energy utility industry. As a public policy IRP was a major success. A relatively simple, compelling idea went a long way in a very short time and succeeded in meeting many of its objectives. IRP has:

- avoided some costly mistakes for new power plant construction, saving customers money (Cohen & Kihm 1994);
- avoided air emissions and other negative environmental impacts by reducing the need for new power plant con-

struction and reducing operation of existing plants through DSM programs, which in 1993 are estimated to have saved 44,000 GWh of energy and reduced peak demand by 40,000 MW (Hadley & Hirst 1995; Tempchin et al. 1991);

- accelerated the development and adoption of energy efficient technologies throughout the economy, from compact fluorescent lightbulbs to energy-efficient motors and drives (Nadel & Geller 1994);

- fostered the development of the energy services industry through the growth of utility DSM programs, which in 1993 was a $2.8 billion industry (Hadley & Hirst 1995);

- fostered the development of the independent power production industry, which in 1994 accounted for 68,445 MW of 702,229 MW total operable electricity capacity in the United States (EIA 1995); and

- fostered the development of renewable energy technologies (Swezey & Sinclair 1992); between 1980 and 1989 roughly 17,000 MW of renewable capacity was developed (Kozloff & Dower 1993).

IRP helped transform a once conservative, slow-changing industry. IRP has set the stage for the restructuring initiatives underway across the United States and even the world. IRP helped redefine electric utility business from a supplier of kilowatt-hours to a provider of energy services, and, in doing so, improved customer service through better knowledge about their customers. IRP provided a platform for new industries to develop that will likely take advantage of new opportunities afforded under restructuring and deregulation. IRP showed that economic and environmental objectives can be met through integrated approaches. Finally, IRP showed that customer demand can be managed through utility DSM programs, which can provide benefits to the customers, utilities and society as a whole. Truly, one wonders not just how IRP may be shaping the restructuring debate, but whether the debate would have happened without IRP?

CONCLUSION

IRP succeeded in changing the terms of the debate over institutional structures and processes that best allocate resources and achieve other social objectives associated with affected markets. More importantly, IRP changed the relevant rights and duties of the market participants. As with other policies, it did not achieve all of its goals. The path for the restructured market is perhaps no clearer than it was for IRP, but IRP has helped to sharpen the policy objectives and changed the landscape sufficiently to usher in a new era.

We have taken both a macro and micro perspective on the rise and apparent fall of IRP to examine this period of utility history for its public policy lessons. As we move forward into what is likely to be a fundamentally changed world for electric utilities, it is imperative that we take a critical look at IRP to assess both its successes *and* failures if we are to build on its strengths and avoid repeating mistakes stemming from its weaknesses.

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