A DIFFERENT PATH TO ELECTRIC INDUSTRY RESTRUCTURING[1]

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Deregulation and restructuring are in disfavor. In the continuing wake of the California electric deregulation nightmare, some states are delaying their efforts, while others defend theirs and say, "it can't happen here!" While no one knows whether the crisis will force California and perhaps others to re-regulation, it is certain that some states will indefinitely postpone beginning a restructuring process. And that is unfortunate. The circumstances and problems that supported the movement to allow competition in the supply of electric energy will not disappear, even if the state laws and regulations designing it do. The ends remain desirable: more valuable electricity services to consumers and an innovative industry that attracts human and financial capital.[2] The means undoubtedly require more work. This article suggests alternate means – a new path to the ends. That path is an explicit regulatory contract to replace all or part of the fuzzy regulatory compacts that have contributed to the need for restructuring.

Most deregulation efforts so far attempt to create competition in the retail sale of electric energy and shift market share from incumbent utilities to new providers. This is primarily a structural approach, with the intended goal of lower commodity prices.

[1] I gratefully acknowledges the support of the following in bringing these ideas to fruition: Ralph Cavanaugh, Mike Morgan, Eric Airriess, Marty Howard, Annette Mattson, and many others who patiently reviewed and commented on various drafts. Others too numerous to mention have helped me over the years by answering my endless questions and allowing my thoughts to roam freely.

[2] I purposely did not define the goal as lower cost. Low cost is no guarantee of value and its blind pursuit is one of the very reasons some restructuring efforts now teeter on the edge of disaster.

Notwithstanding significant variation between states in their plan details, all are remarkably similar in the tools chosen: simultaneous competition and encouragement of new competitors. The results are less than overwhelming. Consumer prices have not necessarily fallen with deregulation because only one component – supply – is subject to competition, and prices remain subject to the economic principles of supply and demand.[3] Short supply means higher prices, unless one allocates a shortage solely by administrative means.

But another path exists: we can come at this a different way and start in a different place. Instead of driving industry change by creating simultaneous competition in just one aspect of the industry and focusing on new market entrants, we can drive change by creating competition across time and focusing on establishing the conditions under which utilities themselves become competitive. Instead of starting with industry structure, we can start with regulation. We can replace cost-of-service regulation with a regulatory framework that changes the economics sufficiently that utilities must transform themselves and subjects them to sequential competition to ensure that they do.

What I propose is simple in description, if complex in implementation. The process starts with a rigorous identification and description of the services that we presently bundle and call "electricity." Most deregulation or restructuring frameworks start here as well, calling this step "unbundling." Unbundling is insufficient, however. We must go beyond cost allocations to defining – in terms of assets, activities, and results for an identifiable customer – the useful services within "electricity" and must further decide which of those services we should continue to regulate and for whom.

[3] For various reasons I'll review below, new supply investment lagged during the 1990s in many parts of the country. Whereas a fully regulated system allocates scarce supply through curtailment, markets tend to

Competition and innovation can flourish outside the boundaries – geographic or substantive – of what must remain utility services because the conditions supporting a monopoly are unavoidable at an acceptable cost.

Once we know what utility services we are regulating, and for which customers, we can design a contract that the state administers to secure the service on behalf of those customers that cannot, or will not, negotiate for the service on their own. We can price the contracts and set the performance commitments to drive the results we want, aligning the utility's success with the success of the customers of that service. This contract, in turn, becomes the basis on which sequential competition can occur. At the end of the contract term, if the utility and state do not renegotiate, the state can bid the service.

In short, I propose that we replace today's implicit and fuzzy regulatory compact with an explicit and clear regulatory contract. I propose we move from regulating entities called *utilities*, to regulating *services*, and that we regulate these services in the same way that commercial parties regulate their conduct – by bargaining for value. This will allow us to move beyond the weighty statutes and regulations designed to control the unintended effects of cost-of-service regulation and instead focus our energy and relationships on obtaining results.

The concept does not require direct access or duplicative infrastructure. It does not require expensive information systems or consumer participation. It does not require, at least initially, competitors. The first step is creating a competitive utility. The concept allows utilities time to transition to a competitive status. It allows time for competitors to identify ways to add value to the contracted utility services and prepare to compete to

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allocate scarce supply first by raising the price.

provide the utility service at the end of the contract term. It is an evolutionary process that should avoid some of the discontinuity of current restructuring efforts.

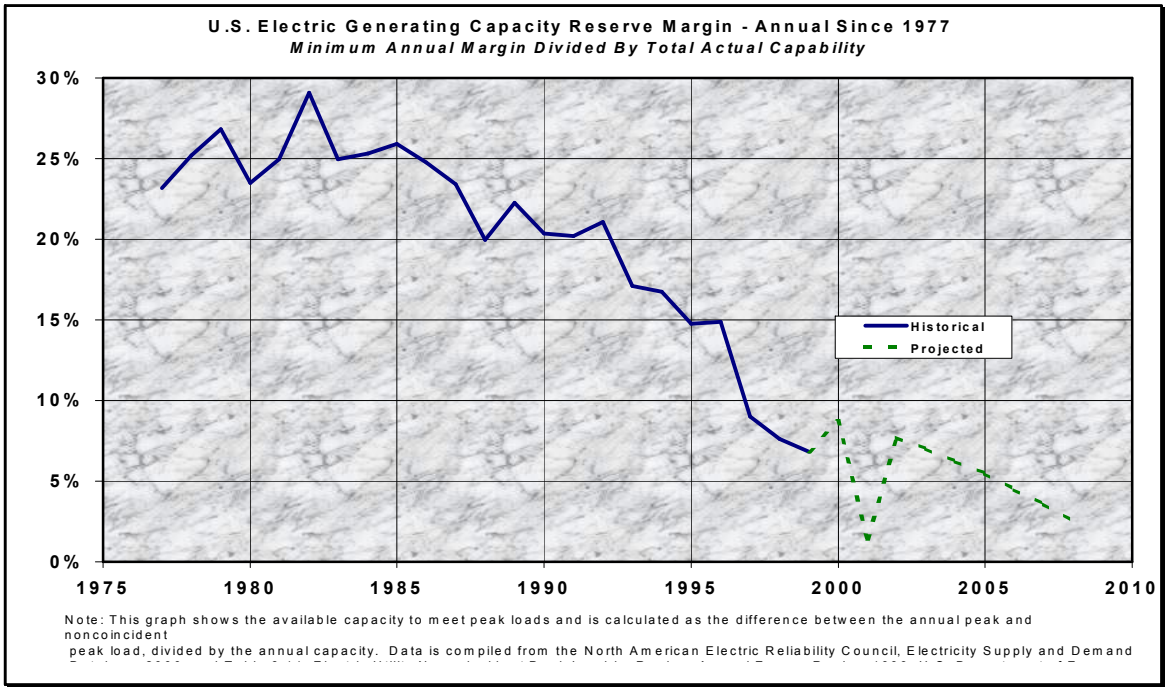
Below I briefly review why action is necessary. It may be that the deregulation and direct access of the late 1990s were not the right steps, or not properly designed. But the circumstances and problems that produced them require an answer. I then present the principles that guided the development of the regulated service and regulatory contract model as a different approach to achieving what we need from the electric industry in the 21st century. I next introduce the regulatory contract concept and, in the course of describing scope – one of the most critical components of any service contract – discuss how we can identify and define what utility services must remain regulated. Following this is a review of the major components of any regulatory contract. Last, I briefly discuss a recent instance in which Portland General Electric applied this concept.

If It's Broken, Fix It!

The regulatory system of the last 100 years performed its purposes admirably, driving the finance, construction, maintenance, and operation of the finest electrical system in the world. Trouble appeared in the late 1970s, however. Congress passed PURPA, disturbing the monopoly on generation investment that utilities had enjoyed for about 50 years. Utilities started numerous, expensive, generating plants, just as consumers demonstrated that demand for electricity is elastic given a cost increase of sufficient magnitude. Some of these plants never reached completion. By the end of the 1980s, regulators had disallowed recovery of most uncompleted plants and portions of the costs of the completed ones. Many utilities forswore future construction; retained earnings generated by depreciation from large generating investment found real estate

and eventually overseas markets more attractive than the regulated returns on common equity allowed by state regulation.

As the nation entered the 1990s, the industry had significant excess capacity, producing an attractive wholesale market. Large industrial customers began agitating for direct access to electric wholesale markets, building on their success in the late 1980s in reaching attractive wellhead natural gas prices through the unbundling of pipeline services. Faced with potentially huge stranded generating costs, utilities slowed generating investment even more and investment in distribution and transmission infrastructure lagged as well.[4] The solution, it seemed, was direct access and



[4] The last few years have seen several notable distribution system failures and progressively lower allowed returns on equity for distribution as parties argue, and commissions find that, the "risk" is lower. Distribution expenses were the first to fall but distribution investment has lagged as well. Industry literature is replete with articles suggesting that utilities seek investments other than distribution and outside of regulation to earn a higher return on the cash produced by their operations or generation asset sales or both. For a few utilities, the income from non-regulated affiliates is approaching that produced by the regulated business and some are suggesting that utilities isolate the stock of the distribution business so that it does not artificially depress that of the utility's growth businesses. These events and the advice bode poorly for significant new investment in distribution.

deregulation.

This solution emerged from a cost-of-service system already failing to achieve the purpose for which we designed it. The system was no longer driving the finance, construction, maintenance, and operation of the finest electrical system in the world. This is reason alone to revisit the system. But a more compelling reason exists: cost-of-service regulation does not produce what consumers value.

Why should we focus on value rather than low cost or low rates? In the regulated world, we talk of cost and rates because that is all our formulas allow. These formulas are oblivious to what our customers value most: heat and light for their homes and offices, energy for their appliances and equipment, at a price commensurate with the worth of the results created. It is hard to set a rate administratively; setting value administratively is impossible. Value is most easily discerned when a buyer and seller satisfactorily complete a transaction. It is individual and relative over time. Nonetheless, it is possible to generalize about what consumers value and what contributes to enabling value to emerge.

Below is a brief review of the major effects of cost-of-service regulation, most of which are unintended effects not anticipated when our regulatory forefathers designed the system. Following it is what consumers value, or what will enable them to receive value. First, cost-of-service produces:

- **A drive for ever-increasing investment.** We <u>designed</u> cost of service regulation to drive investment. Several decades later, and ever since, we have been busy adding policies and procedures to constrain investment and minimize "gold-plating." We don't want too much investment; we don't want

too little investment. But we cannot achieve just the right amount of investment with a system that rewards only how much a utility spends providing service, rather than what it achieves.

- **A drive for ever-increasing sales.** We designed cost of service to drive adoption of the new "electric" technology. The more power a utility sold, the more it made. This is true both in the short-term through variable recovery of essentially fixed costs and in the long term through the increased investment the higher sales require. As interest in energy efficiency rose during the last 20 years, we expended significant creativity trying to neutralize or reverse the sales incentives our ratemaking methodology created. But we always stopped short of simply replacing it.
- **A win-lose regulatory game that rewards mediocrity.** Aside from investing and selling more than projected, the only other way to make money under cost of service regulation is to "beat" the cost assumptions used to set the prices in the first place. But the utility must not "beat" them by too much, or it risks having to reduce its rates. Cost of service doesn't recognize intellectual capital and cannot reward a "gamble" on a new technology or process that reduces cost. And we forbid, in reality or practice, utilities from providing interesting services or finding interesting ways to use their human and physical assets, in the name of preventing "cross-subsidization" or "protecting competition."

Second, cost-of-service does not produce what IS valuable to consumers:

- **Results.** Customers want results. Electricity is now fully integrated into our society and economy. It is how it performs that is important. But cost-of-service merely recompenses what a utility spends, not what it achieves.
- **Innovation.** What was the last major innovation in the electric utility industry? Quick now, the clock is ticking. While PURPA's introduction of competition into electric supply arguably produced some innovation in generation technology, little has changed on the distribution side for years. The principles of cost-of-service drive utilities to fully depreciate old technology before deploying new technology. Moreover, the system discourages taking risk on new technology because if it fails, there's no recovery and if it succeeds, there's no reward.
- **Customization.** The cost-of-service world is a "one-size-fits-all" world. Customers, however, increasingly expect offers tailored to their needs because that is how they receive value. While many decry the confusion of today's long distance and cellular pricing packages, the companies would not offer them if no one found value there. Our use of these communications services differs greatly. It is difficult to believe that our use of electricity is not similarly different.

The last reason to abandon cost-of-service is that it may well fail to produce healthy utilities. To the extent that a business model existed under cost of service, it was capacity-driven: build it, fill it up, build more. The big driver was, of course, generation investment. Even in states that have not restructured, however, new generation investment is a questionable proposition. Without new generation investment, a utility

faces a growth rate constrained by the population growth in its service territory or even lower if its customers become more energy efficient, using less to achieve the results they want.

Neither over-investment nor under-investment is desirable. If we preclude utilities from re-inventing themselves, the only sure result is that those organizations will fight to retain the status quo or exit the business. An organization in defensive or downsizing mode does not easily attract capital, either human or financial.

We stand at a crossroads with respect to the regulation of electric distribution. We can patch the current regulatory system, add a piece here or there to mend the stresses, and hope for the best. Or, we can start over. At least once every hundred years, we ought to consider starting over. As social, technological, and economic changes come ever more quickly, some of our institutions, organizations and systems are failing to adapt. Cost-of-service regulation is no exception.

In our increasingly fluid world, principles and processes will guide us better than this litigious, lengthy, system. *Principles* shape **what** we aspire to achieve. *Process* is the framework of roles and relationships within which we take action, check for feedback, and adjust our actions if necessary, all to achieve the result. The *process* I suggest is contractual and the *principles* it enables are below.

Some Principles for the Path

As we restructure and redesign, I suggest we strive for a world in which:

Results are what matter and rewards follow results

Utilities earn, grow as organizations, and increase their value by increasing the number of customers to whom they provide the same result or service (such as electric

distribution service) or by increasing the number of results or services they provide to the same people. We pay utilities for services to drive the desired results, which are not higher kWh sales, and cause measurement of what we want measured.

Utilities replace or add to the electric infrastructure, or cause others to take actions outside the boundaries of utility services, according to the results they have committed to achieve, using the lowest cost means available, whether that be capital or expense, theirs or another's. Energy efficiency, in this world, serves as a means to achieve the same results at a lower cost or more results at the same cost. If distributed generation solves a service quality problem or provides needed capacity at the right location for the lowest cost, the utility deploys it or causes someone else to do so through value-creating offers.

There are only customers

Some customers receive utility services under arrangements negotiated and managed for them by others, such as a government entity. For these customers, the transaction costs of individual negotiations for various electricity services exceed the value obtainable thereby because most desire a similar service provided by similar, and individually indistinguishable, means. Other customers negotiate and manage their own electricity services because the results, the means, or both differ sufficiently that the value of individual arrangements outweighs the cost of obtaining them. Discrimination exists because differentiation produces value. And regardless whether result management is collective or individual, the service relationship aligns success and persists only as long as it produces value on both sides: to the customers and to the utility.

Innovative people drive innovation

Utilities innovate to deliver to customers, and secure for their owners, the maximum value from utility services. In modern economic theory, it is neither earnings nor assets that matter to shareholders of a company: it is their relationship. Following the old maxim that less is more, the fewer assets a company must deploy to produce a given amount of earnings, the better. This aligns remarkably well with the goals of customers, including those who support greater sustainability in our use of natural resources.[5] Utilities also cannibalize their own services before someone else does, with the beneficial consequences that new technologies deploy much faster and customers never again pay the cost of capital made obsolete by technological change.[6]

The drive to create more from less causes the sharing of actions, information, and assets across infrastructures, such as natural gas, telecommunications, and water, and across services, regardless of ownership.[7] Utilities also freely share information about their network, their services, and their results to enhance the value customers receive, regardless whether the utility provides all of the components of that value. Sharing information allows innovative people to achieve unpredictable and valuable results.

[5] Because waste is the opposite of value, utilities strive to prevent waste or, in the least, recycle and re-use it. Innovation in sustainable practices and environmentally sound actions increases value, not cost.

[6] At a minimum, our aspiration should be that utilities accommodate the new technologies, rather than contest them. But a better aspiration is that the utilities themselves, who have the expertise to find valuable application of technology the fastest, actually drive its adoption.

[7] For example, utilities make readily available information on how to interconnect distributed generation safely and effectively with the network because such interconnection increases the value of the network even if the customer or another service provider supports the generation. In essence, this is the notion of a whole product, which is defined as that combination of product/service that enables the customer to achieve the results expected when he or she bought the product. In the high-tech world, where this concept took life, the need to create whole products has resulted in a vast number of strategic alliances as companies seek the right combination to deliver on customer expectations.

Feedback and dialogue govern

The content of utility and customer dialogue is the past results achieved, and any changes desired to maintain or increase the value of future results or accommodate new conditions. The presence of results articulated, achieved or not achieved, and evaluated supports an environment rich in feedback for both utilities and customers. We move from prescriptions that presume we know the future, to processes that allow us to work productively together on what the future brings.

Introducing the Regulatory Contract

One way to apply the principles described above is to adopt a contractual framework for regulation of those electricity services that must remain utility services or that require a transition period from monopoly to competition. While other paths likely exist, the commercial world has much to offer regulation.

In the best commercial service relationships, the buyer and seller focus on *what* and *value*, just as we must do. The seller listens as the buyer describes the results needed to achieve success and the value of those results. The buyer then listens to the results the seller offers and assesses the price against value achievable. If the match between result desired/value obtainable and result offered/price charged is close enough, the buyer and seller create a relationship to achieve the results. The relationship aligns the success of buyer and seller such that the more value the results create for the buyer, the more value the seller receives. This alignment transforms the relationship from supplier and buyer to a partnership.

In other commercial service relationships that fail, the buyer and seller discuss *how* and *cost*. Without articulating the results desired or value those results make

achievable, the buyer delves deeply into how the seller should provide the services; i.e. the seller's capabilities. Every "how" constrains innovation. Without understanding the results and value of those results to the buyer, the seller talks about the cost to the buyer. The negotiations are contentious as the buyer tries to get more capabilities for less and the seller tries to provide fewer capabilities for more. Since the buyer and seller can align success only by accident with this process, the success of each party is at best neutral to the other's and, at worst, opposite.

In the commercial service world, the buyer and seller capture their initial dialogue about results and price in a contract. A few key elements determine whether that contract will survive and support a healthy relationship, or fail and lead to the termination of the relationship or litigation. These elements include: scope, performance commitments, restrictions on how, consequences for non-performance, change orders and change process, term, termination and "unwind," and pricing. Achieving agreement around these elements supports a healthy buyer-seller relationship. Moreover, because the contract does not dictate *how* the seller must provide the results, the seller need not dictate *how* to its employees. Instead, the same notions of scope, expectations, and consequences can govern, distributing power, producing unpredictable means, and attracting the right people.

I do not claim that applying this process to electricity services will be easy. Defining the scope, articulating the results, and establishing the measurement systems will take time and effort. But, then again, the average rate case takes six to twelve months. Personally, I would rather work on results and value, than full-time equivalent

employee positions and cost of capital. I suspect many in this arena would choose similarly.

The Contracting Parties

Initially, the utility would be the service provider under the contract. Over time, depending on the term provided for the various utility services put under contract, other companies could become service providers. This is the meaning of sequential competition.

On the purchaser's side is an individual customer or an aggregator, depending on the utility service covered by the contract and the particular application of that service. In general, an aggregator will act as the customer for everyone taking services for which the individual charges are too small to make individual negotiation worthwhile and the facilities and activities involved in providing service are not easily allocated. Customers will act individually as buyers where this is not true. For example, the charges for distribution service to a large commercial customer may be significant enough and the facilities and activities supporting that customer discrete enough to support individual negotiation of a distribution services contract for that customer.[8] In contrast, an aggregator would likely arrange a basic electricity supply for users of less than 1000 kWh per month.

[8] For existing customers, one choice is to unbundle the costs (facilities and activities) associated with serving each such customer and enter into a series of individual contracts that define any differences in scope, performance expectations, etc. and establish the unit-based price for that customer. This could be done simultaneously with the negotiation and pricing of the aggregated service contract. For new customers of this nature, the utility and the customer could negotiate to reach agreement on the scope, performance commitments, and other parameters of service, with the resulting contract subject to Commission review under pre-established review standards. This option will work only if the customer has alternatives to any one of more of the utility's services, including finance, design, construction, and maintenance services.

Again initially, a Public Utility Commission would likely serve as the aggregator for all consumers in a given historical service territory. Over time, one can imagine other aggregators, including cities and neighborhoods, within the area served by a utility's facilities, either in place of or under the coordination of a regulator/aggregator for the entire service territory. For example, a city may want a broader scope to a utility service contract, or additional performance commitments. Such a city would negotiate its own contract terms, building on a base service territory contract in some cases, and then collect the associated charges.[9]

The aggregator's role is the same as that of an individual customer or buyer:

- Negotiate the contract, including scope, expectations, constraints, consequences, change processes, termination and, of course, price.
- Monitor performance under the contract, review regular reports, and in general administer the contract's terms.
- Initiate change requests, when the contract's services no longer meet the aggregated customers' needs or responding to change requests initiated by the service provider.
- Apply consequences for non-performance.
- Design the price charged to consumers covered by the aggregation contract and make payments to the service provider.

[9] This proposal comes closer to resolving historical conflicts between state and local authority over utilities than the current regulatory system but does not eliminate them. It would still not be possible for City A to have a different service provider than the utility chose, or to have a lower level of service than that provided in the service territory. After the initial term, however, a city could participate in whatever process the Commission uses to decide whether to extend, renegotiate or terminate the contract and, if termination is the decision, select a new service provider.

- Prepare for and handle end-of-term negotiations and unwind the relationship if those negotiations fail.

The Commission will likely also serve as the regulator of public safety, access to and interconnection with contract facilities, and complaints under the contracts. Replacing cost-of-service regulation with a contract does not eliminate the need for regulation; it only changes the nature of regulation from the policing of costs to the management and influence of results desired. Instead of approving a debt or stock issuance, the Commission may order a revision in interconnection policies to permit greater innovation. Instead of reviewing a utility's budget or acting on a property sale, the Commission may revise the safety standards applicable to the builders and property owners now outside the box of standard distribution service.

Contract Scope and Service Definition

The scope of a contract defines what and where the service is and, by implication, what and where it is not. It relates not only to the results we want to achieve through the contract, but the results we want to achieve around the contract. It does this by setting the boundaries of the regulated utility service – both geographic boundaries and substantive (activities and assets) boundaries. Anything outside the scope is competitive immediately. If we ensure that use of and interconnection with the service is simple and clear, innovation will thrive outside the boundaries. Anything within the scope becomes competitive at the end of the contract's term. Innovation will occur within the scope of the regulated service as the utility identifies ways to increase its net income and to remain competitive at the end of the contract's term.

I cannot over-emphasize the importance of the scope decision. One cannot set a price without knowing the scope of the service provided. Resolving scope requires that we examine every aspect of the bundled service to determine whether the facilities and activities involved in providing it still meet the conditions for requiring that it be done only as a monopoly. For example, should we restrict the design, finance, and construction of extensions of the distribution system to the utility or allow others to provide this service subject to standards and audits? If designing and building extensions can be competitive, what about operating, maintain, or restoring them? Could designing, financing, and constructing new generation be competitive? What about managing an aggregation of plants and contracts to follow a given load?

We are unlikely to "get this right" the first time and certainly the evolving environment will change the answers over time. More contracts of smaller scope and shorter terms, rather than single comprehensive contracts of greater length, will preserve flexibility to adjust over time. The change process should also ensure that we can adjust the scope of contracts as necessary.

Once we have set the boundaries for a regulated service and defined the general nature of what the contract covers, scope becomes an iterative process, driven by what activities and facilities the contract must cover to enable the service provider to produce the desired results. Stated somewhat differently, over what facilities and activities must the utility have control so that it is willing to accept responsibility for the contracted results?

Assume for a moment, that we are working through the issue of scope in the context of reliability. While we may already have agreed on the measurements the

contract will use, we now must agree on the point or points on the system at which we will measure reliability. Possible choices are: at the junction of the service drop and a line that spans multiple service drops; at the meter; at the junction of wiring that distributes electricity within the home or business and the wiring that connects that home or business to the system. With the "what" and "where" of a reliability result determined, the service provider asks itself:

- What facilities and activities will affect our performance of this result? Here, the activities include design, finance, construction, maintenance, repair/restoration, and replacement of the facilities up to and including the point of measurement.
- Can we adequately protect our ability to perform if someone not under our direction or control provides those facilities or performs those activities? For example, the utility might be willing to assume responsibility for the reliability of facilities financed and constructed by another if those facilities complied with published standards and it had the right to test them before accepting responsibility. In contrast, the service provider might not be willing to assume responsibility for outage duration results if someone else performed restoration activities.
- If we cannot adequately protect our ability to perform when someone not under our direction or control provides relevant facilities or activities, can we isolate the effects of their actions and/or facilities from our measurements? And if so, is this exclusion acceptable to the aggregator?

The results for which the utility is responsible will attach only to what is under its direction and control, or what it accepts subject to pre-determined conditions. Thus, exploring scope is critical to understanding when to isolate one or more desired results and either attach different price and other terms to them, or define them out of the contract altogether. This separation should occur only when the facilities and activities related to the separated result(s) are removable and distinct from the activities and facilities important to other results at an acceptable economic consequence.[10]

Other Contractual Terms

Performance Commitments

Performance commitments define the desired results within the scope of the contract and, depending on that scope, these may be results for the entire group of aggregated consumers, results for individual aggregated consumers, or a mixture. The results must be measurable and that the contracting parties must agree on that measurement. By removing the uncertainty around the desired results, the buyer frees the seller to find the most efficient and valuable means to produce that results and the seller, in turn, can free its human resources to the same end.

Many of the measurements that will be important already exist. For example, assume we are defining the performance commitments for a distribution services contract. Performance commitment measurements might cover the following:

[10] It would almost always be possible to separate one or more results with a duplication of facilities and activities. But the benefits of doing so should outweigh the costs of whatever duplication is necessary to make this happen. For example, some have suggested separating customer service from electric distribution utilities. Assuming the utility remains responsible for reliability, however, the scope of its contract to do so likely must include some facilities and activities related to obtaining information from customers on outages. If someone else's direction and control of the facilities and activities related to outage reporting negatively affects the utility's willingness to assume responsibility for reliability, the only option may be to establish separate systems, with some duplication of facilities and activities and some loss of economic efficiency.

- Reliability: the number of times, and total and average length, per period that the system is unavailable;
- Quality: the number of momentary outages per point of delivery and number of voltage dips or surges per period;
- Safety: the number and severity of preventable accidents per year, stated separately for those working on the distribution system and for the general public, awareness of safety issues, and compliance with national and local codes;
- Environmental Responsibility: compliance with national, state, and local regulations as determined by audit; annual reductions in identified waste streams, and general public awareness of ways to minimize the environmental impacts of the use of electricity; and
- Accessibility: the availability of both telephone and web-based access to information, the promptness of response to inquiries, and awareness of information about the electric distribution system and related policies.

For an energy supply services contract, the performance commitments would likely reflect choices within the key preferences relating to power supply:

- Price stability: notice and frequency of price changes;
- Price simplicity: how simple the pricing scheme is;
- Price finality: any factors that affect the price after use;
- Quantity controls: any restrictions on amount of demand or consumption;
- Content: any restrictions on the source of supply to meet a customer's needs; and
- Term flexibility: notice required to start or stop service.

Restrictions on How

The transition from regulatory compact to regulatory contract requires an inventory of the constraints on how utilities perform services that exist in statutes and rules. Many of these constraints exist to manage utility actions or decisions that could increase the costs included in cost-of-service regulation. Because one of the purposes of the regulatory contract is to enable a permanent departure from cost-of-service regulation and the associated rate base, the need for most constraints disappears once the contract is in place. These include such restrictions as those on mergers and acquisitions; financing and capital structures; affiliated interest transactions; property sales; contracts between utilities; accounts; and depreciation practices. Because they increase cost and stifle innovation, restrictions to which the contracting parties agree should be of sufficient value and/or necessity to outweigh the adverse consequences of their adoption.

Consequences for Nonperformance

Numerous methods exist to quantify the consequences of a service provider's failure to meet any of the results. Today's consequences – disallowances – relate to amounts spent or proposed to be spent; the contract's consequences will relate to results achieved or not achieved. The consequences may be monetary or not and scaled to increase or decrease with performance. In applying the consequences, the contract may establish bands, rather than points, for some of the measures of evidence, with consequences occurring only if performance dips below the bottom or above the top of the band.

For more extreme nonperformance, the contract may allow the aggregator a "self-help" remedy. For example, if the utility was not installing assets or performing activities identified as necessary to achieve the results, the aggregator could acquire these assets or

activities from third parties and charge the utility. The parties may also agree that, should the utility fail to achieve certain results over a certain period, the aggregator may terminate or re-negotiate the contract. These results could include maintenance of credit worthiness and financial strength identified as necessary to continue performance. This is common in commercial lending agreements, for example.

What remains of utmost importance is that the contract specify the consequences. Known consequences enable good decisions; unknown consequences can paralyze.

A Change Process

Nothing is as certain as change. Electric utility services exist in a much larger economic and social environment that both affects and is affected by those services. The parties can anticipate major known changes by setting a contract term that allows re-negotiation before such changes occur. Within that term, however, unanticipated changes will certainly occur that stress even the most carefully designed contract. Including in the contract a change process honors the relationship that pre-dated and enabled the contract.

Some of the major changes for which the contract might want to provide include:

- when and how the evidence by which they measure results may change;
- when and how either party may add or remove activities or facilities from the scope;
- when and how either party may add or remove results; and
- what changes will cause re-pricing.

The change process may include committees that consider proposed changes and independent third parties that resolve disagreements about changes. It matters much less what the process is than that the parties agree to it and honor it as the framework of how they handle change.

Contract Administration

Providing some structure to when and how parties communicate can improve the health of the contractual relationship. The contract should specify the reports the utility will provide the Commission or aggregator, and the topics of regular or as-needed communication.[11] Designated contract administrators on both sides and a contract administration governance committee are helpful.

Pricing

Price is the most powerful tool by which the contract either aligns, or fails to align, the success of the aggregator and the service provider. For example, our current "pricing" of distribution services fails the alignment test in both the short term and the long term. In the short term, our usage-based prices means that the more electricity a utility delivers over the distribution network, the better it does, regardless whether all of that usage has value to individuals or society. In the long term, the more distribution plant a utility can add, particularly without raising additional capital, the more it will "earn." These plant additions may not provide any value in terms of better results to the Commission or the customers it represents. They simply become "cost" and, at the extreme, produce negative value. To align success, and drive results, we need different pricing.

It is impossible to price without reference to scope which, in turn, ties closely to performance commitments. Ideally, the contract prices a result, or groups of results, for maximum effectiveness. For energy supply, these results will reflect a selection among

[11] For example, the Commission may want to stay abreast of the methods by which the utility or service provider is performing certain aspects of maintenance or other activities on a distribution system. These are not matters of scope or consequences or compensation but simply matters of information sharing that will improve the relationship.

the preferences discussed above. For distribution services, a number of key results relate to the health of the network, both for the points of delivery already present and all future points of delivery. To encourage the maximum amount of innovation and provide the utility the maximum flexibility, the contract may price all of these results as a unit price per point of delivery on the network, such as the meter. Or, the contract may use a mix of measures, such as meters, number of line miles, and system capacity to capture the extent of the service the utility is providing. Priced thus, the contract drives the service provider to maximize the points of delivery on the network and simultaneously minimize the costs associated with maintaining the required reliability, quality, safety, environmental results, and accessibility for those points of delivery.

Assuming the contract uses a unit-based pricing scheme, an issue the parties must address is the number of unpredictable activities, particularly those performed for only one or a few of a contract's beneficiaries, included in the unit cost. This is how price becomes iterative with scope. For example, predictable activities related to the distribution system include maintenance, restoration, and the additions caused by normal growth in the usage of the system and highly correlated with the number of points of delivery on the system. Unpredictable activities include moving significant amounts of facilities to accommodate road widening, changing the configuration and content of facilities because of a change in usage type or level at an existing point of delivery, or constructing new facilities to accommodate a large load with special quality requirements. Existing utility practices address this issue fairly well, with line extension allowances and rules that allow individual charges for special work on the network. The contract could simply continue these policies with some refinement.

The aggregator and the utility could determine the initial prices of one or more regulatory contracts in a traditional rate case that includes not only test year results but also forecasts of future cost streams. This is similar to the efforts that have produced numerous performance-based ratemaking plans over the last decade. The parties could also consider other evidence than cost, however, including prices charged by entities providing similar services. The parties also must decide if, during the initial term of the contract, the prices may change except in connection with a change in scope or desired results.[12] For example, the service provider may want the ability to change prices according to inflation indexes. The aggregator may want the ability to change prices according to prices charged by entities providing similar services. The final mix of these price re-openers is a matter for negotiation between the parties. Overall, the goal of pricing should be to ensure that the contract delivers good economic value, defined as a lower price for the desired results than alternate suppliers or alternate means of achieving the results.

The basis on which the utility receives compensation for the regulated service need not be the same basis on which it charges the consumer base for the services. Given that many states still charge for distribution services based on usage, this separation allows a Commission to continue this practice either for public policy reasons or to avoid dramatic cost shifts among consumers, or both. Second, the separation allows a change in the design of the prices used to collect for amounts owed the utility during the term of the contract.

Term, Termination, and Unwind

[12] For example, if the Commission decides during the initial term that it wants the utility to provide a higher level of reliability, the change should occur only if the utility is allowed a price change. This would be part

The initial term of a contract should be sufficiently long to allow the utility and the Commission fully to develop their new roles. It should also allow time for competitors to emerge for the services covered by the contracts. The period for which the utility and the Commission are willing to commit to a price may also dictate the contract length.

Several choices exist for the end of the initial term. The parties might include an "evergreen clause," under which the contract simply continues with all terms unchanged until either gives notice at the specified time. The contract might allow either party to trigger re-negotiations and also allow the parties to agree to binding arbitration to settle differences of opinion on new terms, including pricing. The possibility of real termination is critical, however, to transform the relationship between the utility and Commission to one of service provider and customer, rather than utility and economic regulator.

Service relationships, of necessity, must cope with unknowns as the term of the relationship progresses. Parties can never anticipate every contingency in designing their contract, and managing unforeseen events successfully requires constant vigilance and dedication by both buyer and seller. Somewhat perversely, the ability of either party to terminate the relationship typically provides the needed perseverance and discipline to achieve successful resolution of the inevitable issues. Termination is certainly painful for the service provider, meaning a loss of revenues and idle staff. But termination can be almost as painful for the customer, requiring a transition to a new service provider and potential disruptions in results. This shared desire to avoid pain helps the parties find reasonable solutions to the unanticipated issues.

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of the change process discussed above.

The Commission must be able to seek another service provider with the knowledge that processes exist whereby the utility will transfer physical assets[13] to the new service provider and perform all services necessary to achieve the transition. Both the asset transfer and transition services should, of course, have a price. Many ways exist to price the physical assets, such as original depreciated cost or replacement cost less standardized depreciation based on vintage. To ensure that customers do not bear the cost of stranded facilities, this should cover only those facilities necessary to perform under the contract at the time of termination. Transition services could be priced on time and materials, or some fixed basis.

The possibility of termination and transfer only of useful assets once again places investment at risk. This creates a value proposition for private ownership of companies providing utility services that is different from what a publicly-owned utility can offer. Government must pay its debts regardless of the usefulness of the underlying property.

A Recent Application

Early in 2001, PGE decided to add a small generating unit in response to the supply shortage in the WSCC. The best site for the unit was next to an existing generating plant that could provide necessary facility and physical support. PGE approached the Oregon Public Utility Commission (OPUC) to discuss ways of sharing the risks and rewards of this relatively short-lived generating project.

[13] This would include only assets that the utility and Commission agree must be transferred. For supply services based on new construction, for example, the parties may agree that the assets involved revert to the utility at the end of the contract with no need for transfer. For most distribution assets, however, transfer pricing will be needed.

A brief description of the project gives a basis for understanding the risks and potential for reward presented. Environmental rules, fuel availability and the need for haste all pointed to the installation of a small – about 25 MW – natural gas fired turbine generator (the Unit). Environmental emissions constraints would limit the operation of the Unit and at a heat rate of about 11,500 Btus per kWh, it was not very efficient and would dispatch only when market power prices were above about $68 per MWh. While high by historical standards, it appeared that western U.S. markets would exceed this, at least for a year or two. Thus, PGE calculated the value of the Unit assuming operation for no more than three years, starting in August 2001, and a sale thereafter at half of the original book value. With these assumptions, the net present value of the project, after paying all capital costs and for use of the site and personnel, was around $14 million.

The risks were considerable and included the usual risks of a generating project, such as construction cost overruns, delays in permitting and other construction events, environmental constraints on operating hours, unit performance, fuel availability and price, and pipeline or electric transmission constraints. But the uncertainty of market electric prices presents by far the greatest hazard. A single season of operation, perhaps six months, could easily become reality.

Because of Oregon's pending transition to competitive markets, traditional rate base treatment for this plant was not feasible. Instead, PGE approached the OPUC Staff with a collection of four alternative contract-like proposals, represented in one-page term sheets, that demonstrated the variety of ways that PGE and its customers might share the risks and benefits of the project. PGE used a set of five three-year scenarios to show the primary risk variable, the market price of electricity and also prepared an analysis of the

other project risks. PGE's preferred proposal shared the risks and rewards of the project with PGE's customers in such a way that the net benefit of the project, positive or negative, would be shared approximately equally across a wide range of market prices. After some negotiation, PGE and the OPUC Staff agreed to terms that gave more of the net benefits to customers if market prices were much higher than expected, but also committed customers to paying the capital costs of the project, even if actual market prices were much lower than expected. Thus, PGE gave up some opportunity but received some additional protection from loss.

Procedurally, the outline of this agreement is in the form of a stipulation that the parties can present to the Commission for approval. Following an order approving the stipulation, PGE and OPUC Staff plan to develop the details of an agreement that will closely resemble a normal commercial contract.

To Aspiration and Beyond

Does the process serve the principles? Do results matter and will rewards follow results? Are there only customers? Will utilities under the contract attract capital and innovative people, and drive the adoption of new technologies and new practices into this industry? Will feedback and dialogue enable us to move ever closer to our aspirations? Obviously, we cannot know unless we try. But one can imagine at least some benefits of adopting the process.

The regulatory contract overcomes our current inability to "force" a utility to achieve certain results. The framework is inherently pro-active and focused on doing the right things. Customers also obtain a price certainty that does not currently exist and a foundation from which differentiation is possible.

The regulatory contract also allows customization through the addition to regulated services of valuable competitive services. Currently, competitors find it hard to design individual services for individual customers because it is usually unclear exactly where the utility stops and what the utility's services are. Indeed, many utilities use this ambiguity as a barrier to entry. The precisely defined scope of the regulatory contract removes the ambiguity, making it clear both to the utility and to competitors where the regulated service stops and where customized services can begin.

Utilities gain as well, which is fitting for a construct designed to promote mutual benefit wherever possible. The first benefit is abandoning the acrimonious, win-lose environment of a general rate case, with its focus on cost and activity rather than value and result and arcane debate about hypothetical costs of capital. As significant as this is, however, the potential for the entity's growth overshadows it completely. No longer under cost of service regulation or restrictions on itself as an entity other than those any business must operate within,[14] utilities can begin to look for other ways to give and receive value in the economy. With the scope of its regulated service(s) defined, a utility can compete with others to offer differentiated infrastructure services and other products and services that make "more" from what it has: physical and intellectual assets, the "trust" of the residents and businesses in the communities it serves. If our goal is more from less, it makes little sense to discourage utilities from finding multiple uses for their trucks or call centers or talented people. One can imagine utilities branching into services to other local infrastructure owners, into retail products such as lighting and

[14] Utilities would remain subject to anti-trust laws, environmental laws, labor laws, and the full panoply of regulation that applies to every business. Removing the economic "entity" regulation we now impose merely puts utilities on even ground with other competitors; it does not give them any special advantages.

appliances, and into retail services – particularly those for which a strong local presence and years of reliable service are valuable.

Maintaining the current regulatory system leaves all stakeholders with a "heads you lose, tails you lose" outcome. We will achieve our goals only by accident, if at all. As we enter the next century, let us apply all we have learned over the last 100 years and start a new era of regulation that focuses on results, price, and the combination of both: value.