



The Reliability Spending Conundrum

What is the right and prudent level of spending on service?

Times have changed for electric utilities. The combination of deregulation, mergers, major storms, and widespread outages has shifted the industry's emphasis to reliability. That wasn't always true. Even 20 years ago, the growth of load was adding so much to ratebases and driving such large rate increases that regulators spent a lot of time reviewing plans for capacity additions—and challenging utilities for over-spending. Because of these “prudency reviews,” excessive costs sometimes were disallowed as additions to ratebase.

Generation today is deregulated in many states, while many states have excess supply. And concerns about reliability are escalating. Consequently, regulators are focused on whether utilities are spending enough money to ensure quality of service.

Trending, benchmarking, and modeling are three good tests utilities and regulators can use to determine the right amount of spending for the desired quality of service.

Trending

One of the most commonly used tests for spending prudency examines the trend of spending and service levels. Looking back over a specific time period, what has the utility spent on reliability, service, or system integrity? How does that compare to service level and performance over the same time?

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Take five years of spending on reliability, service, or system integrity, and compare that with five years of service level performance. If the results look like Figure 1, where spending and service are both going down, there is a problem. The utility either is not spending enough or not spending it prudently.

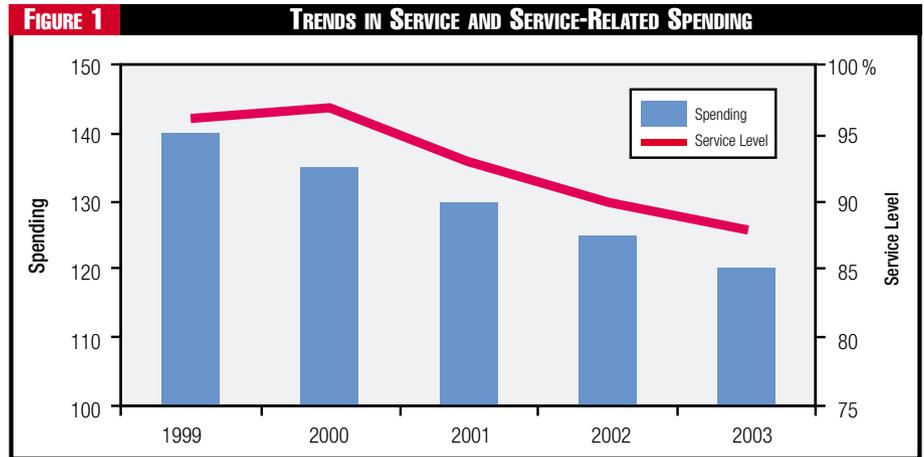
Some utility executives may consider trending a backward-looking, late-emerging test. If trending is known to be part of the utility's review process, it can cause forward-looking decision makers to take action in advance to avoid the situation. If a utility is decreasing its spending on service-related categories, it would do well to ensure that service levels are trending up. When the curves slope in opposite directions, the case that spending is inadequate or imprudent is less compelling.

When there is more than one indicator of spending or service level, the test is more complicated. For some utilities, "inconclusive" results may be considered good enough. However, for more progressive organizations, the objective (and challenge) is to ensure that the results tell the same positive story: spending is going down and service problems are going down too. This will help stabilize rates, continue service improvements, and beef up return on investment.

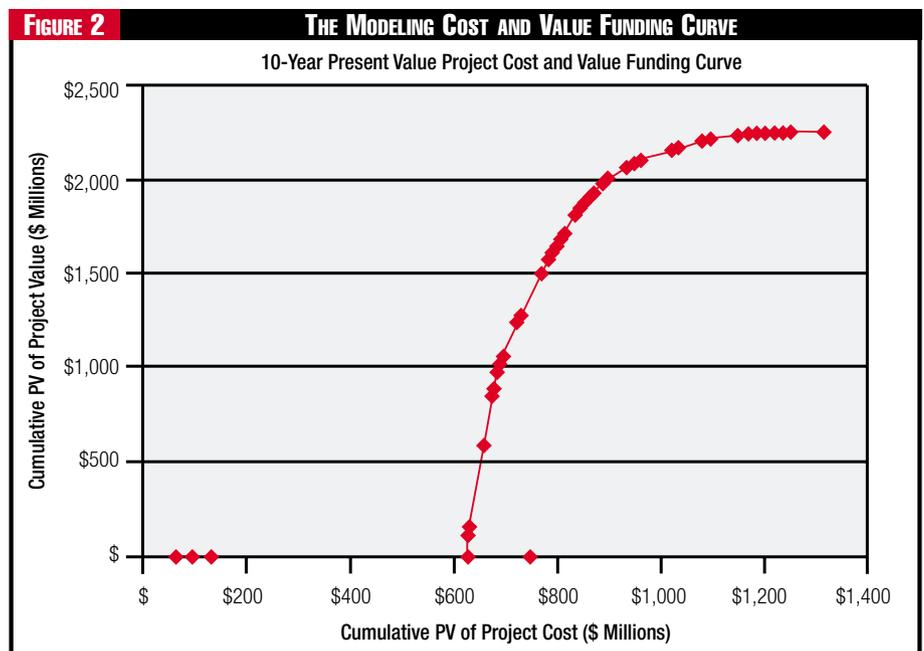
Benchmarking

The results of benchmarking to determine whether the spending level is right and prudent also can be either ambivalent or compelling. Presumably, a company that spends less than its peers on service-related problems, and which has a better service level, has no problem. But is that all there is to it?

Many companies want all their benchmarks to be in the first quartile or even the first decile—where "first" applies to the end of the scale with low costs and high levels of service.



Source: Navigant Consulting Inc.



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Other utilities may have a compact with their customers and regulators to find the right point along some tradeoff curve between cost and service.

Frequently in today's environment, rates are capped or expected to remain stable. In such circumstances, a company with low service-related spending and poor service may be pressured to explore ways to improve service without a rate increase. Part of any prudence review is determining whether the spending was efficient and effective in accomplishing what the customer wanted.

As with any benchmarking, arguments may be made that the peers are not really comparable. However, in electric generation, where benchmarking has been used extensively, a certain type of plant should be able to achieve a certain efficiency no matter where it is, adjusting for how it is dispatched. For transmission and distribution, regional differences between territori-

al geography and climate and even customer preferences can be used to argue that cost and service indicators are not comparable, so peers often are chosen from comparable territories.

Benchmarking can be particularly compelling when it is linked to a best practice. For example, if an electric company's peers are trimming trees on a 4-year cycle, trimming less than 25 percent of its miles per year would raise concerns—particularly if the company's tree-related customer interruptions are higher than its peers.

For gas companies, the annual rate of replacement of leak-prone cast iron and bare steel tends to be 1 to 2 percent of a company's inventory when that inventory is over 500 miles. If a company were to replace only half of 1 percent, it would cause regulators to be concerned about long-term system integrity. And as companies with smaller inventories move toward more rapid replacement (some even adopting 10-year replacement goals), it puts pressure on the others to consider accelerating their policies too, even though replacement could drive up costs.

An analysis of prudence is incomplete without an examination of benchmark results. Even though the results may seem inconclusive or can be explained by differences in territory, the question has to be asked, "How does this compare with others?"

Modeling

A good modeling approach that relates the spending level to the service level is probably the best test of prudence. The model should not replace the trending and benchmarking tests, but it should be consistent with the story told by those two tests.

A model allows the decision makers to ask "what if" questions, and it helps them see what can be done to fix a problem. Not only can a model raise an alarm that costs are decreasing and service problems are rising, but a good model can tell you what spending level is required to fix the trend and achieve the desired level of service.

An effective model requires an appropriate degree of complexity. For starters, it needs to be a dynamic model that can predict how spending today and tomorrow will affect the level and the trend of service in the future. So it will probably have at its heart a set of difference equations (the discrete equivalent of the differential equations some of us dealt with in calculus) that can exhibit dynamic behavior. In addition, it should have some details about which programs address which indicators. For example, the model should show how tree trimming affects one aspect of electric reliability, as well as how adding new lines and substations affects another aspect of reliability. Ideally, the model should have a dual function of optimization and prioritization. That is, it should help determine not only the right level of spending, but also which programs

should be funded and in what order.

Typically, this type of model can be represented in a funding curve like that shown in Figure 2. On the horizontal axis, the curve shows the level of funding, starting from a basic minimum and increasing as additional discretionary programs are added. On the vertical axis, various measures might be used, from a simple point-scoring method to an appropriate valuation method that computes the incremental benefits associated with the incremental cost of each program.

The trouble with the point-scoring approach is that it can prioritize but not optimize. It can tell you which projects to do in what order, but it cannot tell you what the right level of spending should be. To accomplish that, the model must be able to predict the impact on service indicators and to value that service in such a way that when the incremental value/cost ratio equals 1.0, the right level of spending has been achieved. This method has been shown to be a good test of prudence, and it can subsume the other two measures. In fact, a good model can explain the trend in spending and performance and make the benchmarking moot.

One of the advantages of such a model is that it only gets better with time. As the relationships are proven out and refined, the confidence in the model's predictions grow, and the conclusions become even more compelling and credible. The model's elaborate detail will allow you to fine-tune optimization and prioritization.

Boards Care Too

Utility executives will find that their boards of directors are equally concerned about achieving the right and prudent level of spending. Board members know that one of the key risks in utility finance can be the disallowance of costs for rate recovery. They also recognize that they may be forced to significantly increase spending to address a perceived or real service quality problem. Knowing that spending levels are right and prudent for ensuring service helps directors feel good about approving business plans.

So, what is the right and prudent level of spending? To make your case and make it firmly, apply all three tests. If the first two support your case, that's good. If the two tests are inconclusive, be prepared to explain why you think they are not relevant. In either event, rely on the third approach, modeling, to provide not only a conclusive answer but also a way to achieve the promised results, to monitor progress, and adjust if necessary. To do anything else would not be prudent. And that means it would not be right. ■

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