

# Metrics for Measuring Performance of Market Transformation Initiatives

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## ABSTRACT

Regulators have traditionally rewarded utility efficiency programs based on energy and demand savings. Now, many regulators are encouraging utilities and other program administrators to save energy by transforming markets. Prior to achieving sustainable market transformation, the program administrators often must take actions to understand the markets, establish baselines for success, reduce market barriers, build alliances, and build market momentum. Because these activities often precede savings, year-by-year measurement of savings can be an inappropriate measure of near-term success. Because ultimate success in transforming markets is defined in terms of sustainable changes in market structure and practice, traditional measures of success can also be misleading as initiatives reach maturity.

This paper reviews early efforts in Massachusetts to develop metrics, or yardsticks, to gauge regulatory rewards for utility market transformation initiatives. From our experience in multiparty negotiations, we review options for metrics based alternatively on *market effects, outcomes, and good faith implementation*. Additionally, alternative approaches are explored, based on end-results, interim results, and initial results. The political and practical constraints are described which have thus far led to a preference for one-year metrics, based primarily on good faith implementation. Strategies are offered for developing useful metrics which might be acceptable to regulators, advocates, and program administrators.

Finally, we emphasize that the use of market transformation performance metrics is in its infancy. Both regulators and program administrators are encouraged to advance into this area with an experimental mind-set; don't put all the money on one horse until there's more of a track record.

## Introduction

Two years ago at this Summer Study, we presented a policy discussion of how regulatory rewards systems might be configured to encourage effective efforts to transform markets to energy-efficient equipment and practices (Schlegel & Gordon 1996). That paper proposed three alternative types of metrics, or yardsticks, for measuring success in market transformation:

“Performance or success can be defined, measured, and rewarded using several different metrics, including: (1) *ultimate outcomes* (energy and demand savings, product sales as a proxy for energy and demand savings, or market penetration); (2) *indicators of effects* (indicators of lasting market effects and/or reductions in market barriers); or (3) *effective and efficient performance of planned activities* (good-faith implementation).”

This paper describes the process for setting metrics in Massachusetts for gauging regulatory performance incentives for specific utility market transformation initiatives. The resulting metrics have not yet been tested in use, but have survived the test of the political process and will be the basis for regulatory rewards. We have learned a great deal about how the ideal measure of performance relates to the tactical objectives of different interest groups, about what is practically and politically possible, and most important, about how to *get started* toward a system to encourage market transformation through regulatory tools.

The authors of this paper offer their perspectives as consultants to efficiency advocates who have participated in settlement negotiations to establish metrics. To the extent that the perceptions of the authors allow, the paper also describes the interests and viewpoints of utilities (who are the program administrators in Massachusetts), state agencies, and other interested parties who participated in those negotiations and signed on to the settlements. We describe these positions because they influence the Massachusetts metrics and are likely to recur, and influence negotiations over metrics, in other states. We have chosen, in many cases, not to attribute positions to specific parties. This allows us to speak frankly without violating the confidences of the negotiations, which involved many informal and confidential, as well as public, discussions.

## **Context**

### **A New Regulatory Framework for Utility Efficiency Initiatives in Massachusetts**

In the period of July through December 1997, in response to Department of Public Utilities Order # 96-100 (Commonwealth of Massachusetts 1996), utilities filed five-year plans for utility energy-efficiency activities (Mass Electric 1997; WMECo 1998). In late 1997 and early 1998, most of the Massachusetts investor-owned utilities filed regulatory settlements which essentially separated distribution companies from the transmission and generation businesses within those utilities. Under these settlements, budgets were established to fund conservation, renewable energy, and low-income assistance programs. Near the end of 1997, legislation was passed which resulted in some changes to the restructuring settlements. Among other things, this bill included all utilities in restructuring and established public benefits charges for energy-efficiency, low-income, and renewable-energy initiatives. In the first half of 1998, additional settlement filings among utilities, advocates, and other parties established some details of how utilities would proceed (Commonwealth of Massachusetts 1998). These utility-by-utility settlements were reached with parties including the Office of the Attorney General, the Division of Energy Resources, low-income and environmental advocates, and various energy-efficiency business groups.

Regulatory guidance encouraged utilities to focus on market transformation in their five-year plans. All utilities proposed some initiatives intended to transform markets. Among the market transformation initiatives proposed were multi-utility initiatives, including initiatives for motors, unitary cooling equipment in commercial and industrial buildings, commercial and industrial lighting, code enhancement, residential lighting, and residential clothes washers. While, under the Massachusetts legislation, individual utilities retain primary control of public benefits energy-efficiency funds, the five-year plans stated that these initiatives were to be run in a coordinated fashion. A new nonprofit corporation, Northeast Energy Efficiency Partnerships, Inc. (NEEP), with a board consisting of utilities, advocates, and government entities, is helping to coordinate planning and implementation for some of the multi-utility initiatives.

## **Within the New Efficiency Framework, A New System for Regulatory Incentives**

Historically, investor-owned utilities in Massachusetts were rewarded by regulators for verified program savings through regulatory incentives. These mechanisms varied by utility. They included shared savings, payment per kWh, lost-base revenues, and related schemes. As part of the 1998 settlements regarding the five-year plans (Commonwealth of Massachusetts 1998), utilities agreed that a portion of their financial reward in the future should be based on their success in transforming electric equipment and service markets to sustainably higher levels of efficiency.<sup>1</sup>

Metrics for regulatory incentives were negotiated and specified in the 1998 five-year plan settlements. It has been said that legislation is akin to the process of making sausage. The same can certainly be said of the settlement negotiations. The end product had scraps of the desires of each party, but was not the whole of what anyone wanted. The following sections discuss what the authors, as advocates, thought the metrics should accomplish and how they should look, as well as what they eventually became, and why.

### **Rewards Based on Market Transformation End-Effects**

#### **What Type of Metric Provides Regulators with the Best Assurance of Success?**

At the outset of negotiations, we thought that the best type of metric, from an accountability point of view, would base utility rewards on indicators of market transformation *end-effects*. If the regulatory objective is to transform markets, the best assurance is evidence that sustainable market transformation has occurred. The five-year plans offer a period of time long enough that markets might be demonstrably altered. To illustrate, let us consider the market for premium-efficiency motors. At the end of five years, one might expect that, for markets to be transformed:

- Motors meeting program criteria should be available in most sizes and types from most manufacturers, and at least as available as non-qualifying motors from dealers. (This actually might be an indicator of intermediate progress after two or three years, but should certainly be the case at the program endpoint.)
- Qualifying motors should have significantly higher market shares than at the beginning of the period.
- Price differentials for qualifying motors, as compared to standard motors, should decrease.
- Non-qualifying motors should be less available from dealers than qualifying motors.
- An increased share of customers should be buying qualifying motors independently of any utility or government entreaty or incentive.
- Market studies should show that there was some causal link between these effects and program activity.

Such metrics of success would provide regulators with the clearest indicator that the market was transformed before incentives were awarded. An ultimate metric might be a benefit/cost analysis of the overall effort, proving that it was not only successful (sustained change), but cost-effective.

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<sup>1</sup> The remainder of the incentives would be paid using more traditional metrics, such as efficiency (i.e., cost-effectiveness) and maximizing (savings levels). This reflects a decision to transition from traditional resource acquisition approaches to market transformation in an incremental fashion.

By contrast, *outcome* measures which focus on sales, savings, penetration, etc., would assure that energy was saved in the program, but not that markets were sustainably transformed.<sup>2</sup> Indicators of *good faith execution* (e.g., dealers contacted, incentives offered) would prove that the utilities had tried, but regulators and advocates would prefer to pay for success.

As desirable as it might be to reward market transformation *market end-effects*, it quickly became apparent that a reward system based solely on this type of metric would not be satisfactory to any of the negotiating parties. Based on the reasons described below, we concluded that 1998 metrics could not ask to prove *sustainability* of market change, and could not be based on any type of end-effect.

### **Who Would Wait Several Years for a Paycheck?**

Most market transformation initiatives take several years to reach fruition. Utilities would not be highly motivated by rewards collected at the end of five years. Energy efficiency is not their core business. Market transformation requires significant changes in their approach to energy efficiency, and newly formed Discos have many pressing management issues to attend to. Furthermore, five years is a lifetime in regulatory and political terms, especially for a new, experimental mode of regulation. There would be the possibility of changes in perception, politics, and recollection among regulators and other parties. For utilities, this creates a risk that, even if they met the letter of the initial metrics, others would reinterpret the context. At the same time, regulators were not interested in rewarding initiatives for several years without interim indicators of success.

### **Reasonable Multi-Year Expectations Cannot be Predicted With Any Quantitative Certainty**

As discussed in Schlegel & Gordon 1996, market transformation initiatives involve progressive learning about how much can be accomplished in a market. Because program growth is often exponential, early-year capital risks tend to be modest and precision in predicting outcomes is poor. In many cases, it takes one to three years of incrementally larger investment before the prospects are clear. Furthermore, market transformation initiatives need to set high penetration targets to succeed in changing market conditions. At the outset, there are reasonable theories of how to reach those targets, but little precedent to say what precise share of the market can be transformed, or how long transformation will take.

For example, efficient motor programs in the Northeast have historically achieved penetration levels of 20% or less. Based on the experience of market transformation initiatives in Canada, there is hope that the joint-utility initiative being coordinated by NEEP will achieve a market share of qualifying motors of at least 60% (Howe et al. 1993). However, significantly different conditions (efficiency standards, utility scale, customer scale) existed for the Canadian initiatives, so transferability is not assured. Nationally, there is significant debate about the achievability of the 60% goal with the motor standards established by the Consortium for Energy Efficiency which are used by Massachusetts utilities.

Additionally, to reach this penetration level it is probably important to achieve a narrower price differential between standard and qualifying motors. That depends not only on increasing the sales volume of each type of qualifying motor, but also on accompanying changes in manufacturer packaging, pricing, and marketing strategies which extend well beyond efficiency issues and are difficult to predict. In fact,

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<sup>2</sup> This is true except in situations where the increase in penetration, savings, etc., is itself an indicator of a significant and sustainable market shift. Then the metric shows both *outcomes* and *market effects*.

some manufacturers have, in 1998, packaged many premium features into their qualifying motor lines and increased prices significantly, effectively increasing incremental cost. This development was not predicted, even by those observers who had talked in detail to manufacturers about pricing policies in 1997; the manufacturers hadn't decided yet. This demonstrates why long-term forecasts of market penetration are far from precise.

To provide another example, several utilities are trying to change standard practice for lighting system designs in new and remodeled commercial and industrial buildings. This is being undertaken by developing and promoting voluntary lighting design guidelines. The initiative promotes efficiency levels which are possible only with improved fixture quality and layouts, and uses the consequent improved quality of light to market the guidelines. While success is plausible, most prior utility programs have focused on equipment efficiency improvements and reduced wattage, with lighting quality a secondary issue. There is no market-wide precedent to predict how fast it will work, nor how big a market will be influenced. In this environment, any multi-year goals would involve considerable guesswork, and would likely look unreasonable in hindsight.

In circumstances like these, an incentive which pegged most rewards to a multi-year quantitative target would not be very attractive to program administrators because it involves significant, uncontrollable risks. If they are clearly rewarded for doing the right thing on a year-by-year basis, they are more likely to invest resources in market transformation.

## **Consideration of Two-Year, Progress-Based Metrics**

Given the impracticality of metrics based on *end-effects* for 1998, the authors hoped that metrics for performance incentives could be set on a two-year basis, considering, in some cases, *interim market effects* such as removal of specific market barriers and, in other cases, *interim outcomes* such as penetration or savings. We thought that two years was long enough to show some progress in actually changing market conditions, and short enough that expectations set at the time that the metric was developed might be realistic.

This proved to be untenable for the State's first set of market transformation metrics. While individual parties might have a "comfort level" with two-year performance, it was difficult to get a shared level of comfort among utilities, advocates, and agencies about a specific metric.

Even in a two-year time frame, achieving a consensus on forecasts was problematic. These additional issues hindered the use of two-year metrics.

## **Utilities Need Year-By-Year Rewards to Maintain Focus**

In our experience, the most difficult thing about assuring success of utility efficiency initiatives has been to maintain adequate utility management focus on the shifting and complex needs of efficiency markets in the face of other priorities for utility attention. Market transformation is still a new objective framework to many utilities, one which will require persistent management attention to multiple activities, shifts in strategy and organization, and extensive efforts to work with customers and trade. We believe that it takes a progressive ladder of metrics and rewards, over time, to help sustain utility attention.

## **A Dearth of Market Data**

Perhaps the most significant argument against the use of two-year metrics as a basis for rewards was the absence, in early 1998, of market information to set them well. Returning to our motors program example, the only study indicating baseline market share of efficient motors in Massachusetts is several years old, and is not based on the efficiency standard being utilized by the multi-utility initiative. It would have been politically difficult to settle on a five-year market share target without up-to-date baseline market share information. Regional information is also lacking on the share of motors with different numbers of hours of operation. This is a key determinant of cost-effectiveness of improved motor efficiency. Without this knowledge, the ultimate market share potential for qualifying motors is difficult to predict and would be difficult and expensive to collect at all.

Even where the data were available to project reasonable accomplishments for two years, the detailed program development work had not occurred which would have been necessary to bring all parties to a level of expertise needed to agree on the projections. It was difficult for the multiparty negotiation process to sustain detailed technical discussions on multiple issues for different initiatives, given the schedule and the mixed levels of expertise of the negotiators.

Given existing data, understanding, and the newness of market transformation incentives, two-year metrics proved not to be an acceptable basis of payment for utilities. It is important to note that at least one utility (New England Electric) has proposed that 1998 be dedicated to completing sufficient study of the market so that two-year metrics would be practical for the *second* and *third* years of the five-year planning period.

## **What Can Utilities Accomplish and Demonstrate in One Year?**

Practical issues and the need to reach consensus constrained us to a one-year time period for 1998 performance metrics for purposes of regulatory incentives. Consequently, the metrics could not be based on end-effects, or even major progress in shifting market barriers. The time frame was simply too short. In one year, we could only expect some initial process in changing markets, or in some cases, in learning what needed to be done. This resulted in a mix of metrics based on *good faith implementation* and metrics based on *near-term outcomes* (e.g., participants). A more detailed discussion follows of some of the issues regarding the nature of the metrics chosen.

## **Budgetary and Transition Issues**

Some utilities had concerns about the consistency of filed efficiency budgets and metrics. Could the targets be met within the scope of previously-determined program budgets? This issue was most serious for utilities in a financially-precarious condition and those with significant ongoing commitments to payments over-time for prior performance-based contracting programs. The extent to which these costs could be minimized, and the extent to which they precluded funding for new initiatives, needed to be settled before other program initiatives could be addressed.

## **Laying the Groundwork Versus Showing Results**

For many markets, there was insufficient knowledge to even establish clear goals for change. To

illustrate this, it is useful to consider another market targeted in five-year plans: commercial and industrial building operations and maintenance (O&M). Past experience has demonstrated significant energy savings available in a multitude of separate submarkets through a variety of program approaches (Herzog and Levine 1992 provides one of many examples). However, to our knowledge, there had been only two well-documented explicit attempts to change market conditions to assure more energy-efficient O&M on a sustainable basis (Peters, Baggett & Robison 1998; Coleman 1996). While well-researched, those efforts were in a different region, were finite in their goals, and one of the two examples was subject only to preliminary evaluation. Massachusetts' utilities and other parties were not convinced at the outset that these initiatives were the right place to start transforming O&M, and had very little organized information on their own O&M markets.

In the case of O&M, what was needed in the first year was some initial research and experimentation. As a consequence, sections of the five-year plans called for completion of market research and small-scale experiments with different program approaches.

There was significant debate about the merits of rewarding this type of preliminary action. On one side stood a group of advocates and utilities who felt that, without a system of rewards, most utilities would not pursue this type of research and development effort. Restructuring has produced significant pressure for the new Discos to cut staffing in order to minimize overhead. Research and development actions with long-term rewards tend to be the first things to go in this sort of environment.

Other parties took the position that utilities should be expected to perform this type of developmental activity as a matter of their public responsibility as regulated utilities, and on the prospect of future rewards, without any near-term financial incentive.

A third point of view, put forward by some efficiency businesses, was that any efficiency opportunity, no matter how potentially large and inexpensive, that required years of development before "real" savings were achieved was a low priority. This perspective held that market transformation is fine as long as it can be done quickly, with tangible savings early on to prove the merit of the strategy. This would effectively limit market transformation to strategies where measures, target markets, financial incentives (where needed), technical support, marketing, training, and other activities could be established, operationalized, and see some success in the first year. In other words, market transformation would be limited to markets where the business of efficiency was already well-established.

In the end, a compromise was reached whereby some metrics reward developmental activities, but focus on their completion, not on their initiation. This strikes a balance between the "pay only for annual savings" perspective and some early draft metrics which would have rewarded utilities for investigating issues regardless of the outcome or completion.

Some of the metrics rewarded utilities for completing studies or developing products. For example, a metric for Massachusetts Electric, in support of a home appliance market transformation effort, rewards the utility if they, "*Plan and complete a baseline study of consumer awareness of the EnergyStar® brand name in the MECo service territory in 1998*" (Commonwealth of Massachusetts 1998). Another metric, for the commercial lighting design market, rewards the utility if they, "*. . . develop commercial lighting design guidelines for four market segments*" (Commonwealth of Massachusetts 1998).

## **Rewards for Joint Action**

A particularly nettlesome issue involved incentives to encourage utilities to engage in joint activities. Many market transformation efforts will succeed only if the utilities in Massachusetts, and even surrounding states, act as one. To return to our example of the motors program, differences from utility

to utility in motors programs are thought to be a significant barrier to vendor participation. In 1997, NEEP facilitated efforts to establish identical forms, a unified process for marketing to vendors, and a single point of collection for motors program applications across utilities. While the level of success may not be certain, this program is far more appealing to vendors than fragmented programs based on utility boundaries. Yet the process to develop this joint program required significant labor and management attention from each utility over a year of negotiation. Utilities needed to compromise and surrender some autonomy to a collective group. Some parties, including utilities and advocates, felt it appropriate to establish one-year metrics to reward utilities who participated fully and constructively in this type of development process for future initiatives.

These metrics were opposed for two primary reasons. First, utilities objected that metrics based on joint action made the financial rewards for each utility dependent on the action of other utilities. This argument actually reenforced the need for metrics based on joint action, as it demonstrated that some utilities were not predisposed to cooperation. These utilities preferred to be in complete control of the actions required to achieve financial rewards.

Second, it is difficult to establish objective yardsticks for full and constructive participation. Does it involve more than showing up and eating the donuts? Who is to judge? How will regulators draw conclusions? Like the metrics for studies, some parties felt that cooperative actions, as unprecedented and unnatural as they were for many utilities, should be considered part of the responsibility of the Disco as a regulated entity. We believed that, without specific yardsticks and rewards, many utilities would turn their management attention to simpler objectives in other areas.

In the end, agreement was reached to include some rewards for joint activity. It was assumed that interested parties will call bad-faith efforts to the attention of regulators, and regulators would judge these issues on the context and merits. For example, the Massachusetts Electric settlement includes a metric for the motors program which calls for the utility to, "*Work with NEEP's Northeast Premium Efficiency Motors Initiative and provide incentives for 650 qualified motors to customers.*" This metric calls for both cooperation, and for Massachusetts Electric to deliver a specific level of activity through that process.

### **Few Metrics for *Interim Market Effects***

The constraints of time in the negotiating process, the complexity of the process itself, knowledge and information limitations, and uncertainty and perceived risks significantly narrowed the number of metrics which are clearly tied to interim indicators of market transformation effects. For example, we proposed that utilities implementing the motors program could be rewarded for increasing the proportion of high-volume motors dealers who sell a significant share of program-qualifying motors. This metric focused directly on a key market barrier. Most utility motors programs in Massachusetts achieve their sales through a small proportion of the dealers, while many dealers sell do not sell many qualifying motors.

This proposal was met with strong resistance from utilities because: (1) it was somewhat more lengthy and complex than many parties preferred; and (2) information on the number of large dealers was not available at the time of the negotiations. While this data were easy to collect, utilities feared that any future study of this issue could be interpreted differently by different parties. They wanted firm numbers established in the settlements. Furthermore, given the number of issues that the negotiations needed to handle, it was not possible to agree on the details of what constituted large dealers, what was a good target, etc. Some of the parties did not have the detailed knowledge to assess these issues. For others, the knowledge existed in their organization, but there were too many pressing issues for the negotiator to go back to the office, find the expert, and assimilate the information.

We conjecture that there may have been a third underlying issue: discomfort among utilities about their ability to actually achieve the goal. Most utilities did not appear to have given much thought to the importance of this market barrier, nor to the feasibility of overcoming it.

An alternative metric was considered, based on an increase in market share of program-qualifying motors (qualifying sales/total market sales). This proved difficult to agree on because of the data issues discussed in the section on two-year metrics, above.

Ultimately, the parties agreed to a metric based on the number of qualifying motors sold through utility programs (not on market share of qualifying products). We would have preferred to encourage utilities to shift market practices without prejudice as to whether the shift occurred among formal program participants. The intent of market transformation is to change the market through whatever means works, not necessarily to pay a large volume of rebates. However, the tangible nature of the “number of motors” metric (hard number, program participants only) made the metric unassailably clear as a performance target.

## **How Many Metrics?**

Market transformation initiatives often involve multiple, coordinated actions which converge to help shift market practices. To provide another example, the planned initiative to change lighting design practices includes market research in specific submarkets (e.g., speculative office development), establishing market-friendly guidelines for lighting design for several building space types, building demonstrations to show the merits of the guidelines, and firm-specific marketing and procurement reform assistance in some large firms.

While a single metric might be useful to indicate expected end-results, it is useful to have several first-year metrics to show if utilities are working on these multiple fronts. At the same time, multiple metrics have disadvantages: they water down the reward for any single action, and also create “decision clutter” for policymakers, who can be overwhelmed by the detail.

The final settlements constituted a compromise, with fewer metrics than one would ideally want from a planning perspective, but with more than would be ideal from a management perspective. The number of metrics in the settlements also proved to be different from utility to utility, based on the character of the parties to the settlement and the path of the negotiation.

## **Consistency Among Utilities**

There was a significant push by advocates and some state agency representatives to provide the same metrics to utilities working jointly on the same initiatives and markets. This proved to be problematic because utilities had different market starting points. For example, some utilities had run motors programs for several years and were approaching a 20% market share, while others were starting from scratch. Utilities wished to be judged based on improvements from the starting point in 1998. A draft metric calling for similar *increases* in market share among utilities partially addressed this issue, but did not gain sufficient support, in part because it took too long to explain and calibrate in the course of several parallel negotiations. In the end, the metrics included unit sales figures which were less consistent from utility to utility, and less clearly related to market transformation goals, but which could be clearly identified and evaluated.

## How Are the Metrics Working?

The “consensus” metrics are currently in five-year plans and settlements which are under regulatory review for some utilities and approved for others. Now that they are “on the books,” utilities are engaging in new activities to study markets and design or modify initiatives in accordance with the metrics. Once rewards were clearly tied to specific program actions and measures of accomplishment, utilities have taken the need to meet the metrics very seriously, sometimes even to an extreme degree. To provide one example, the process of developing lighting guidelines is likely to take the better part of 1998. This makes the completion of demonstration projects utilizing the guidelines in 1998 (as required in metrics for some utilities) problematic. Utilities are now proposing to do demonstrations first, in order to get them done on time, even if this will not serve the initial purpose of demonstrating the guidelines. This is a mixed blessing; getting started on multiple fronts is great, but there is a complex tradeoff between more activity and better-coordinated activity.

It is too early to say whether, in response to the metrics, utilities have made the significant commitments needed to have market transformation initiatives work. These include internal resources, money, flexibility, creativity, and willingness to share ventures and risks with others. The demand for planning, market analysis, and negotiating skills far exceeds those required for traditional programs, although the long-term cost per unit of energy savings may be smaller. There are many institutional and political barriers which make concerted efforts difficult. The existence of a new reward structure has not made these needs and barriers disappear. We expect that ultimate success will rely, to some extent, on market transformation metrics, but also on the efforts of utilities, regulators, and advocates to keep the focus on the ultimate program goals.

## Conclusions

1. Practical considerations drove the metric-setting process to one-year metrics for purposes of paying performance incentives. Uncertainties prevented use of a longer time frame.
2. Difficulty in empirically supporting, and agreeing on *market effects* metrics resulted in their infrequent use. Most metrics are based on completion of actions in consensus plans, or are based on first-year *outcomes* which are only loosely indicative of market transformation. Some of the *outcomes* could be loosely construed as indicators of *market effects* (e.g., increases in market share may indicate structural market changes in some circumstances).
3. The process is, correctly, largely experimental. By trying different approaches, we will learn what is most effective.
4. It is important to consider timing when developing metrics based on completed activities. In many cases, if the negotiating process takes longer than expected, the schedule for metrics becomes unrealistic, leading to a rush to “check off” actions in ways which do not lead to the optimal impact on the market.
5. Market transformation is often dependent on creating new partnerships. Rewards for “playing well with others” are important. Individual utilities can’t guarantee that partnership efforts will work, but their best efforts are essential.
6. The degree of risk placed on utilities depends on the difficulty of the specific market goals. If utilities view metrics-based regulatory incentives as a “bonus” for more emphasis on activities they would otherwise do, then they will accept some risk. If the metrics are

- intended to inspire fundamental changes in operation, new initiatives, etc., then there must be a significant level of reward for overcoming inertia, or utilities will not be interested.
7. It is useful, in devising metrics, to think about what data are needed to proceed, what actions are most crucial to the success of the initiative, what can be achieved in the time period, and what outcomes are primarily within the utilities' individual control.
  8. The success of this entire effort remains to be determined. Can utilities be individually funded for energy efficiency and then work together to transform markets based on coordinated and joint action? Can they sustain the integrated research, intervention, monitoring, and strategy adjustment actions to succeed? Will the incentive framework described in this paper help or hinder this effort? Will regulators be able to achieve the necessary balance between clear direction and flexibility to respond to the evolving market understanding needed to help utilities nurture market transformation? Will it be possible in future years to base performance incentives more on *market effects*? We hope to come back in two more years with more answers.

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