

Coordinating Market Transformation And Local Utility Conservation Efforts

David Cohan, NW Energy Efficiency Alliance, Portland, OR

ABSTRACT

For the past several years, market transformation has been on the ascendent within energy efficiency circles, both as a buzzword and, more concretely, in terms of budget expenditures. In the Northwest, recent events have dramatically changed this situation. No cutbacks in market transformation activities have been proposed but funding for local utility programs is increasing dramatically among both investor-owned and public utilities.

As the relative proportion of local utility program funding grows, questions arise as to whether market transformation efforts will be benefited, harmed, or simply disappear. While market transformation can be coordinated with local utility efforts it can also conflict with them. For example, market transformation programs tend to take a long-term, incremental perspective on acquiring savings; resource acquisition programs tend to focus on the short-term with heavy reliance on rebates and give-aways. Such activities can erode the perceived value of energy efficiency products and thus render ineffective the efforts of market transformation programs.

The Northwest has been a national leader in the implementation of market transformation programs. There exists therefore a great incentive to resolve conflicting issues in a way that will allow utilities to reach their short-term savings objectives without disrupting the long-term benefits that market transformation will bring to all consumers. Already, various groups are meeting around the region to discuss these issues and momentum is building to address them in a more unified fashion. The ultimate goal is to develop both policy- and implementation-level guidelines for coordinating all energy efficiency activity in the region.

Introduction

This paper explores the relationship between market transformation (MT) programs and resource acquisition (RA) programs. While it is the author's belief that the ideas contained in this paper are widely applicable, all references and specifics are based on the experiences and situation of the Northwest Energy Efficiency Alliance (the Alliance), a regionally-funded market transformation organization whose territory covers the states of Washington, Oregon, Idaho, and Montana.

As used in this paper, market transformation means encouraging energy efficiency by leveraging existing market forces to increase (1) the efficiency of products and services, (2) the availability of high-efficiency products and services, and (3) the demand for them. The salient characteristics of market transformation are the extended time needed to achieve results (usually 3-5 years or more), the lack of focus on individual transactions/installations, and the goal of permanently affecting the behavior of both supply-side and demand-side market participants. Resource acquisition programs, on the other hand, usually seek very short-term results, focus on individual transactions/installations, tend to rely heavily on end-user incentives such as rebates and give-aways, and are not interested in effecting permanent changes in the market (although this may occur as a by-product).

Background

As the preceding definitions illustrate, MT and RA build upon fundamentally different approaches. What is not clear though is whether these differences inevitably imply a conflict or if possibilities exist that are mutually beneficial or, at a minimum, non-conflicting. While there has been much theoretical discussion of how MT and RA might work together, in practice the two approaches have been largely separated in time in the Northwest. This was not done purposefully, but was the result of economic and political forces that culminated in the regional adoption of market transformation at a time of declining utility funding for energy efficiency programs. Market transformation did not displace RA programs so much as fill the gap left when RA funding was reduced. Figure 1 shows regional conservation spending from 1991 through 2000. One sees that at the time of the creation of the Alliance in 1997 the downward RA funding trend was well established and continuing.

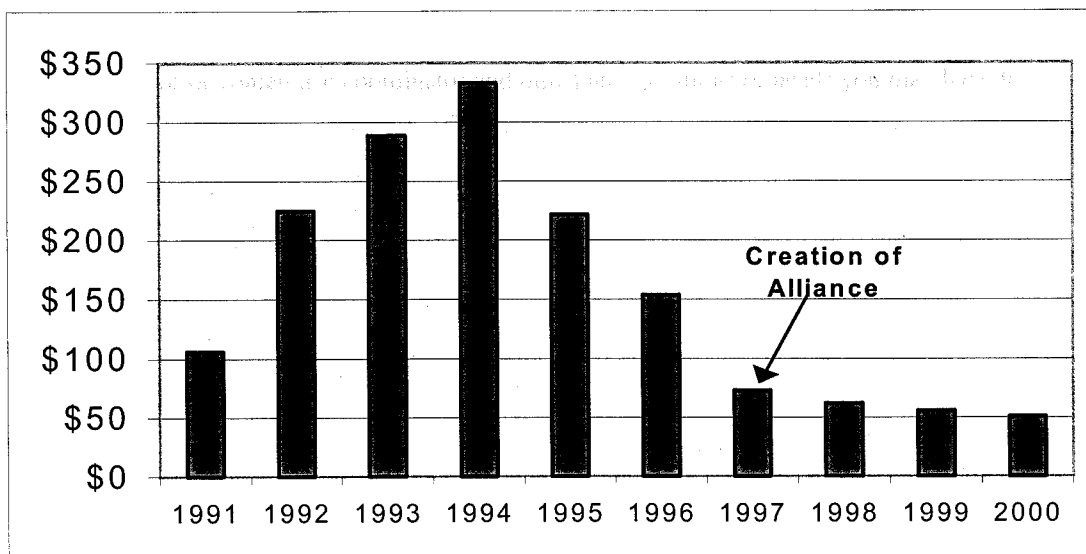


FIGURE 1. NW Regional Conservation Funding 1991-2000

(Source: 1991-96 NW Power Planning Council; 1997-2001 preliminary estimates from Regional Technical Forum report 2/15/01)

The interaction between MT and RA might have remained a matter of purely academic interest were it not for the emergence of a 3,000 Mwa electricity supply deficit resulting from the advent of the West Coast energy crisis, a severe drought year in the hydro-dependent Northwest, and unprecedented high prices. These factors have given an urgency and importance to this issue undreamed of even six months ago.

From the Alliance perspective, the major impact of the energy crisis has been the clarion call to conservation from everyone from governors to newspaper editorials to utilities. With the possibility of blackouts looming, the conservation need is very immediate and the solutions have necessarily focused on RA efforts that can bring quick results. This has produced a surge of RA funding and activity that is anticipated to grow tremendously over the assumed two- to three-year duration of the supply deficit.

The resulting change in the Northwest conservation picture is dramatic. Figure 2 shows the relative size of MT and RA funding at the time of the Alliance's creation in 1997 and then projected figures for 2001. While the absolute size of the MT funding has decreased slightly (\$26M/year to \$20M/year), this difference is overwhelmed by the huge increase in projected RA funding. The percentages on each column show that MT goes from being 22% of overall funding in 1997 to 6% in 2001. The discrepancy between these two figures is even greater than it appears because a large portion of the remaining RA funding in 1997 was for state-mandated low-income weatherization which is not

normally considered a transformable market. This means that discretionary RA funding that could have potentially interacted with MT efforts was extremely low.

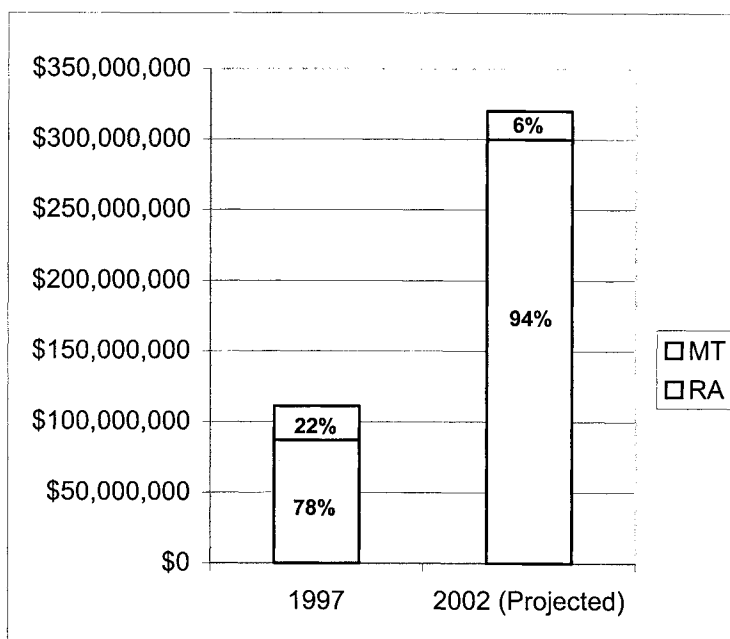


FIGURE 2. Market Transformation Funding vs. Resource Acquisition Funding

It is apparent from Figure 2 that MT and RA will now interact and the crisis atmosphere largely assures short-term RA taking precedence over MT efforts. Fortunately, there are relationships and a long history in the Northwest that argue against the utilities adopting a we-need-energy-now-who-cares-what-happens approach. The Alliance itself is funded by the region's electricity producers and its Board includes many high-ranking staff from the region's utility conservation departments. The Board therefore has both a professional and an economic interest in understanding the interrelationships between MT and RA and in implementing solutions that satisfy individual utility's needs while maximizing the impact of the existing MT programs.

In discussing the current predicament, the Alliance Board of Directors came to two decisions. First, the Alliance will in no way abandon market transformation as its central tenet. Second, it will operate to coordinate with and assist resource acquisition programs as much as possible without undermining its MT mission. The next section gives a specific program example of how the Alliance is coordinating MT and RA activities.

ENERGY STAR[®] Residential Lighting Program

When conservation started making the news and electricity rates began to increase in response to astronomical wholesale prices, the first thought at almost all utilities was to give away compact fluorescent lamps (CFLs). CFLs are an easy choice because they combine a variety of benefits: low-cost, high recognition factor, quick installation by anyone, applicable to virtually all homes, and, in aggregate, a source of significant energy savings. For the Alliance, however, the distribution of large numbers of free CFLs through non-market channels would have undone many of the benefits that had been gained in its three years of work in this market.

The Alliance's ENERGY STAR[®] Residential Lighting Program aims to increase the quality, availability, variety, reliability, and affordability of CFLs and CFL-based fixtures in the Northwest. The

first phase of the project used manufacturer buy-downs to make CFLs more affordable and circuit riders who visited the stores and provided both education to salespeople and ideas and materials for displaying the products. One of the main benefits of the program has been the creation of a strong, extensive network of relationships with retailers of all sizes.

In April 2000, the Alliance Board of Directors extended the implementation contract for this project for three more years, but purposely took a "wait-and-see" approach that did not radically alter its field operations. The most significant changes were the discontinuation of manufacturer buy-downs; an increased focus on retailers with provision of substantial funds for cooperative marketing, advertising, and promotional efforts; and an increase in the program field staff to support such efforts, especially in more rural areas. The other important change was to affiliate the program with the ENERGY STAR[®] brand by promoting only ENERGY STAR[®]-approved products. (Previously the program did not feature ENERGY STAR[®].)

The major change that was discussed but did not occur was the development of a consumer awareness campaign. There was strong agreement on the Board that this step was necessary to move CFL sales up to the next step, but there was an unwillingness to undertake the large expense associated with such a campaign in the absence of clear evidence that it would have the desired results. The Board therefore decided to wait and use the contract extension period to monitor the effects of other CFL programs around the country and to see if new funding for local conservation delivery might become available that could augment the Alliance's activities.

Less than three months after the extension was approved, the energy crisis provided a free consumer awareness campaign much larger and more visible than anything the Alliance had ever considered. The governors of two of the Northwest states went on television touting CFLs, full-page ads espousing CFLs were run by utilities and the Bonneville Power Administration (BPA), and newspaper ads, articles and radio programs promoted CFLs as a way to help tame the energy crisis and counteract higher energy bills.

In the midst of this, one large utility announced that it would mail out 200,000 CFLs free of charge to its customers and others began to plan similar actions. Such actions undermine market transformation efforts because they fail to communicate the true value of a product and do not provide an experience that can become part of consumers' normal buying patterns. Specifically, free bulbs do not communicate the high price of CFLs relative to incandescents so consumers will still experience "sticker shock" when they go to purchase a CFL in a retail store. Also, a mail-out program provides no information on where such bulbs are available should someone want to buy more later. While people will still get a chance to try the new bulbs and, to the extent they are pleased, that will make them want to buy more, the market transformation potential is substantially reduced from what could be achieved in a more market-based program.

Anxious that utilities were focusing their efforts outside normal market channels, the Alliance urged them to coordinate with the ENERGY STAR[®] Residential Lighting program to enhance the success of both efforts. Specifically, utilities were requested to:

- Offer CFL product discounts [rather than give-aways] and use established retail channels for distribution;
- Highlight ENERGY STAR[®] in promotions; and
- Link to Lightsite.net (a website listing stores that carry qualifying ENERGY STAR[®] products).

Soon afterward, the situation improved as a few utilities, still acting on their own, mailed out CFL coupons redeemable at retail stores to their customers. The turning point, however, came in February when BPA, a regional power wholesaler that sells electricity to 130 utilities, announced that it was funding a program in which participating utilities would send out \$6 coupons to customers that

could only be redeemed for ENERGY STAR® CFL bulbs at retail outlets. Retailers would send the coupons to a clearinghouse run by ECOS Consulting, the Alliance's ENERGY STAR® Residential Lighting Program implementation contractor, who would then reimburse the retailers using BPA-provided funds. This concept was so well received that several investor-owned (non-BPA) utilities have also decided to run coupon programs using the clearinghouse. Sixty-five Northwest utilities have signed up for the program and more have indicated strong interest in participating.

The coupon program benefits all parties. From the Alliance perspective, CFL purchases were made by consumer's going to retail stores and a large boost was given to its ENERGY STAR® branding strategy by limiting the coupons to ENERGY STAR® bulbs. While the coupons still detract from consumers properly valuing CFLs, the number of bulbs sold will be many times program projections, potentially increasing the trajectory of the market transformation dramatically.

The benefits to BPA and the utilities are also large. Regionally, the ability to leverage ECOS Consulting's experience, knowledge, and program infrastructure is saving utilities substantial costs relative to them setting up their own programs. Additionally, the time required to deliver the program was cut dramatically from a typical utility implementation. Less than two months passed from the first mention of the idea to the issuance of the first wave of 3 million coupons in mid-April. Another 3 million were sent out in mid-May. With the political and public relations stakes as high as they are, rapid implementation is of great benefit to the utilities.

Equally important is the comprehensiveness of the program that will be delivered. A utility toolkit giving program guidelines, collateral materials for in-store promotion and display, and knowledgeable, fully-trained circuit riders already exist, allowing the immediate implementation of a fully developed, fully supported program. This level of program support took time for the Alliance program to achieve but was available immediately to the utilities.

In conclusion, the near-term needs of the utilities could never have been met as quickly, easily, and cheaply without the groundwork laid by the existence of the long-term MT program. On the other side, the market penetration goals desired by the Alliance would have taken years longer without the funding contributed by the utilities.

General Guidelines

Different programs and markets may be more or less amenable to the mixing of market transformation and resource acquisition efforts. In all cases, however, there are two critical factors for optimizing results: (1) coordination, and (2) recognition of the strengths and weaknesses of each approach. Coordination is a function of communication and the Alliance has had both successes and failures in this arena. Interestingly, one major difficulty arises from the abundance of contacts the Alliance has at many utilities. While this would at first appear to be a benefit, we tend to have several of our staff members in contact with several different utility staff members about a variety of projects. The utility staff may be at different levels or in different departments and many of them may not communicate regularly within their own organization. This can result in inconsistencies in the messages we are giving as well as an assumption on our part that we have done a good job communicating when the messages may actually have gone to the wrong person at the utility. This situation is exacerbated in times of crisis and rapid decision-making such as we are experiencing now, in which utility staff are being given new assignments that change or eliminate traditional lines of communication. There is obviously no magic solution to improving communications but a critical first step is to ensure that adequate communication exists within one's own organization. Internal communication has become a more and more frequent topic at the Alliance and we have recently discussed re-organizing our administrative structure to better facilitate it.

The second factor, recognizing the strengths and weaknesses of market transformation vis-à-vis resource acquisition, is more clear cut. Market transformation arose, in part, because of the limitations of utility-run programs. In particular, utility attempts to work with or influence large market actors such as manufacturers and major retailers usually had little success because very few utility service territories are large enough to influence manufacturer's product development or distribution activities or retailers' stocking patterns. On the other hand, utilities tend to know their customers well, have contact with virtually all of them on a monthly basis, and are trusted and considered credible information sources. Market transformation organizations can complement utilities because they typically concentrate their efforts "upstream" in the market chain (e.g. with retailers, distributors, manufacturers) where fewer actors exist and their impact can be maximized.

If they are properly coordinated, RA and MT efforts can each operate where they are most effective. The danger comes when these boundaries get crossed. For example, the Alliance has agreements in place with the manufacturers and sellers of many energy efficient products. Utilities have sometimes contacted these businesses independently to discuss alternative agreements or variations on the current agreements tailored to their service territory. The result is almost invariably confusion on the part of the businesses (particularly if the utility person is not speaking to the exact same people as the Alliance) and the high probability that the businesses will simply cut off all energy efficiency efforts as it is not worth their time to sort things out.

POLICY

Attribution

The overlap of MT and RA programs has policy implications in addition to the already described implementation issues. First among these in the Northwest is 'attribution of energy savings', the polite term we use for discussing money. At issue is the need for all organizations that fund or implement energy efficiency initiatives to get credit for those activities, even though the motivation for obtaining the credit varies from group to group. Investor-owned utilities, for example, must convince regulators that their investments in energy efficiency are prudent so that they can, at a minimum, recover their costs and potentially obtain lost revenues or a return to shareholders. The Alliance needs to claim savings to show individual utilities the benefits of investing in the Alliance (i.e. to justify funding). Public utilities that rely on BPA for power need to document savings to claim special rate discounts from BPA. BPA itself, as a governmental agency, must justify its spending in public forums, and, more fundamentally, keep itself solvent by making cost-effective investments. One facet of this is not paying for energy savings that flow to other parties or that were already paid for by someone else.

In sum, everyone in the region is motivated to seek credit for its energy savings. At the same time, the attribution of those savings (even at a theoretical level) becomes more and more complicated as multiple conservation investments in the same markets result in multiple claims for credit for achieving those savings. These overlaps will continue to grow as upcoming utility RA efforts target the same measures and markets as the Alliance's MT programs and BPA's upcoming regional programs.

The wide-spread agreement about the importance of attribution resulted in a regional meeting in February called by the Northwest Power Planning Council (NPPC), the agency responsible for documenting the total regional conservation resource. An important cornerstone for all future discussions was laid when it was agreed that all attributions would be determined politically rather than quantitatively, avoiding the need for a very expensive and inevitably controversial modeling exercise. One important concept that came out of the meeting was that political attribution cannot be done unless both the parties who need to claim credit and those who are charged with accepting those claims agree that this method is acceptable. For example, regulatory staff at the meeting agreed that utility

investments in the Alliance are comparable to investments in an ESCO, but that this ESCO is focused on market transformation rather than resource acquisition. So long as the utility's portfolio of conservation investments is cost-effective, then attributing savings to one or another of its programs is less important. If its overall conservation investments are not cost-effective, then much more attention will (and must) be paid to individual program cost-effectiveness. Several broad principles were agreed to for the different types of organizations:

Utilities. It was agreed that savings shall always be linked to the local territory in which they occur regardless of whether the local utility directly invests in actions to secure them. That is, local utilities can claim any and all savings in which they directly contributed as well as those that they acquired through their contributions to the Alliance. Where there is a local investment component (e.g. marketing, rebates, etc) the utility may determine the share to assign to Alliance-funded activities and the share to assign to the utility direct activities. Utilities are responsible for reporting all savings to their respective regulatory agencies or BPA. The methodology used shall be up to each utility and the respective body they report to. Using a regionally consistent methodology is encouraged.

Alliance. The Alliance will report all savings related to its projects both regionwide and to individual utilities requesting such information. The Alliance will use such information in supporting its requests for continued funding from utilities and BPA.

NPPC. The Power Planning Council will continue its role of compiling the total regional conservation resource. In doing so, the Council will take steps to avoid double counting of savings (e.g. counting savings from Alliance programs that are also being reported by local utilities). The Council will also be responsible for tracking the total regional costs of conservation investments to assure the overall cost-effectiveness of programs targeted by both local utilities and the Alliance. In addition the Council will attempt to track savings that result from activities not funded by the Alliance or the utilities (USDOE, FEMP, etc.) While it will be noted that there is “double claiming” occurring (by the utilities and the Alliance) this does not result in double counting as long as the NPPC properly performs its tracking functions.

The Benefits of Stable Funding

As noted initially, market transformation is a long-term process. Much of the effort lies in developing the infrastructure and relationships that make market transformation feasible, efforts that can't be turned on and off without compromising the ability to reach an MT goal now *or in the future*. Many utilities have learned this lesson when they recruited trade allies to help promote programs, dropped the programs, and then tried to start them again (sometimes multiple times). The trade allies' cooperation and enthusiasm dropped with each cycle, reducing, and in some cases eliminating, the possibility of launching successful programs. When the time and cost of attaining such knowledge and relationships are undervalued it leads to poor long-term decision-making.

A concrete example is BPA's sharp reduction in its conservation organization. In 1993, BPA had 230 full-time conservation employees, 100 contractors, and a budget of \$150,000,000. In 1999, the figures had dropped to 60 employees, six contractors, and a budget of \$33,000,000, a reduction of approximately 75% in both staffing and dollars. While the decision to down-size was based on many organizational and political factors unrelated to conservation, the reality is that BPA has lost most of its planning and implementation expertise and is dependent on outside contractors to reduce energy

consumption energy on its system. This has significantly slowed its ability to respond to the current crisis.

Typically, the on-again, off-again nature of utility conservation funding has been related to its being tied to avoided costs¹. Avoided costs can and do change wildly over time for a wide variety of reasons – fuel prices, generating capability, transmission constraints, weather – most of which have nothing to do with the relatively predictable price of acquiring energy savings. The current situation has brutally highlighted the shortcomings of tying conservation funding levels to a set of dynamic, unrelated variables.

The most obvious flaw in the avoided cost approach is the need to predict future energy costs, an ability that, however desirable, has consistently been shown not to exist. Had anyone known that market prices for wholesale energy would be hovering in the 25¢-50¢/kWh range it would have justified conservation efforts orders of magnitude beyond what was done. And while it is true that actual prices could have been lower than the forecast rather than higher, the attendant risks and benefits are not equal. To see this, merely suppose that the cost of energy had gone to zero. Using the avoided cost approach, the money “wasted” on conservation would be equal to the total conservation expenditures; but even assuming an astronomical (for the Northwest) expenditure of 4¢/kWh on conservation and very expanded programs, total expenditures could not have come close to bankrupting utilities as is feared in some areas now. (And of course assigning any above-zero cost to energy reduces the “risk” equivalently.)

The policy lesson from all this is clear: MT funding needs to be stable over long periods to assure the double benefit of a hedge against future price increases and as a strategy for maintaining a conservation infrastructure that can be called upon to more easily produce short-term savings whenever necessary. Consider that if the Northwest had continued to achieve just three-quarters of its 1993 savings of 1.1 million MWh each year, it would have saved almost \$300 million in one year at last year’s average cost of power on an investment of less than \$100 million.

An existing and successful policy solution to achieve this is public benefits charges. These usually consist of a percentage of annual utility revenues permanently dedicated to specific categories such as energy efficiency, low-income weatherization, renewable resources, and low-income bill payment assistance. Public benefits charges have already been adopted in several states, including Montana in the Northwest which collects 2.4% of revenues generating over \$8M/year. Oregon has a bill pending in the current legislature that would initiate a 3% charge in October of 2001 with anticipated funding of \$60M/year. The adoption of public benefits charges across the country could significantly mitigate the impact of any future fluctuations in energy prices and supplies.

Evaluation

While market transformation evaluation has always been considered difficult, the events of the past six months are likely to leave evaluators nostalgic for the past. To date, the segregation of MT and RA activities has made it uncontroversial to assume that a market change was to a large extent the result of MT activities. The Alliance’s ENERGY STAR[®] Windows Program, for example, raised the saturation of high-efficiency windows from 17% to 60% in 2½ years. Since no other organizations were working in this market and nothing in the macro-economic climate had changed drastically it is reasonable to believe that our leadership in this arena drove the change. Now, however, there are at least five major influences working in most markets, all of which have much more influence than the Alliance:

1. Within the context of the current discussion (and very simplified), avoided cost approaches say that one should not spend more on conservation than it would cost to acquire the same energy through generation.

1. *California*. One could argue that the lion's share of any market transformation that occurs in the Northwest should be credited to (or blamed on) California. The events there have driven events here at all levels.
2. *Northwest State Governments*. The governors have publicly talked about energy numerous times, calling on everyone to reduce electricity use and emphasizing the short-term importance of conserving.
3. *Mass Media*. Energy has become a staple item in newspaper headlines and radio talk shows. Conservation is mentioned very frequently. Achieving an equivalent amount of exposure through advertising (assuming it was even possible) would cost millions of dollars.
4. *Retailers*. Savvy retailers, noting the preceding three items, have been heavily pushing energy efficient items in their advertising, outside of Alliance or utility programs.
5. *Rate Increases*. Virtually all Northwest utilities have already raised their rates (as much as 60%), are in the process of doing so, or will be forced to so in the near future. BPA's wholesale rates are expected to rise by 75% or more in October. More than anything else, it is likely that permanent changes in behavioral and purchasing habits will be influenced by rising electricity prices.

The above factors have made moot any individual organization's claims to uniquely impacting the market; the search for program effects has in many cases been transformed into a search for market effects. For the Alliance, the problem now is how to distinguish between the deluge of short-term activity and actual market transformation. In other words, when the crisis is over will the status quo have shifted or stayed the same? Answering this question requires time and a baseline.

With regard to time, if the current rate of change in events keeps up it may take several years until we again attain a "normal" level of activity that can be compared to pre-crisis levels. In the meantime, it is necessary to establish relevant baselines and monitor selected market indicators so that trends can be observed and compared. Relevancy is important because market conditions may have changed so much that existing baselines are no longer appropriate. In many programs, such as ENERGY STAR[®] Residential Lighting, we are in the process of conducting overall market assessments that are not tied directly to individual program activities. In this way we hope to be able to track the market without worrying about necessary adjustments to the program over time.

A related issue concerns the allocation of market transformation funds in rapidly changing markets. Most of the original arguments for market transformation cited various "S" curves representing how technologies diffused into a culture over time or categorizations of consumers (early adopters, laggards, etc.) purporting to explain who is most likely to adopt a new technology sooner or later. The common thread in all the explanations was that it was first necessary to get a small group of influential people interested in doing/changing/buying something and then the practice would spread over time. For funders of MT, the trick is to pay only until the change becomes self-sustaining and self-expanding and then to move on to other projects. For evaluators, the challenge is to identify this point so that proper funding decisions can be made.

Finding this "tipping point" is never a straight-forward process and it is complicated tremendously by the presence of strong, short-term market fluctuations. In the present circumstances, if high-efficiency products are flying off the shelves due to news reports about the energy crisis, is there any point to spending MT funds on promoting them? Though "No" may seem the obvious answer, it is only correct if the current sales represent a long-term shift in buying habits rather than a 'blip'. As long-term shifts cannot be determined immediately much of the decision-making about initiation or continuation of funding must rely more on intuition than science.

Evaluators can help, however, both by making decision-makers aware of market conditions through monitoring and by gathering additional information that may be indicative of longer-term trends

such as surveys of customer attitudes (about energy issues in general as well specific products) and satisfaction levels with newly experienced, high-efficiency products.

Conclusion

In the Northwest, the current energy crisis guarantees that market transformation and resource acquisition programs will be run at the same time in the same markets. Proper coordination and planning can minimize the conflicts between these different approaches to energy efficiency and help to mitigate both long-term and short-term energy supply shortages. Such efforts require strong communication between the implementing organizations, however, as well as the development of policies ensuring proper credit for achieved savings and evaluation efforts that can adapt to changing program and market conditions.