Comprehensive Conservation for Less Money: A Balanced Strategy

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A consortium of public utilities view the recent changes in the electric utility industry as an opportunity to find the balance between public service objectives. They have a continued strong interest in service to all customers, not just large, mobile customers. There is desire to capture cost-effective conservation as a first choice resource, and an understanding that this cannot be done for free. At the same time, these desires must be balanced against their need to remain the low-cost power provider to their customers.

A strategic plan has been developed to achieve this balance through a series of low cost (averaging under 2.2 cents/kWh levelized), high-impact efficiency programs that serve most customer groups. A keystone to the overall plan is the use of an Energy Service Charge (essentially a loan paid back on the utility bill) in concert with modest rebates and loan subsidies. Other distinctive features include (1) substantial increases in marketing and customer service elements, (2) use of a catalog covering multiple end-uses to market new technologies and measures that are difficult to deliver on-site, and (3) emphasis on equipment replacement options.

INTRODUCTION

This paper presents key features of a *Conservation Strategic Plan* developed for the Conservation and Renewable Energy System (CARES). CARES was formed by eight public utilities in Washington to develop and offer conservation and renewable energy programs to the member utilities. Pacific Energy Associates, Inc. (PEA) worked with the CARES staff, a *Conservation Committee* composed of utility conservation staff, and an ad hoc *Oversight Committee* of utility managers and board members to develop a conservation strategy for the future.

The overall purpose of the *Conservation Strategic Plan* is to provide a comprehensive redesign of CARES current conservation strategy and programs. Currently, the CARES conservation programs are largely similar to the Bonneville Power Administration (BPA) programs that the utilities were operating prior to the formation of CARES. In response to competitive pressures, BPA has substantially reduced their conservation funding, while supporting the efforts of their utility customers to develop alternative means for securing conservation. To meet the demands of the new utility environment, the CARES *Conservation Strategic Plan* offers programs designed to provide needed customer services while also providing conservation resources. The programs are designed to accomplish these goals at a lower cost than previous programs, while still offering significant savings for typical customer bills.

The development of a *Conservation Strategic Plan* at this time is very pertinent. The electric industry, and conservation programs within the industry, are currently undergoing significant changes. Some elements of the industry restructuring will not be known for years, but within the Northwest, three major changes have taken place which dramatically effect conservation programs. First, the Bonneville Power Administration will no longer be funding most conservation programs. Second, the cost of supply options has dropped substantially. Third, the regional electric utility industry is subject to increasing competitive pressures, both between suppliers of electricity and with other energy sources.

The changing situation presents both challenges and opportunities to the CARES member utilities. The key challenge is that the past ''ground rules'' are no longer appropriate. Utilities will need to become more independent and resourceful in an increasingly competitive and uncertain environment. The main opportunity is that utilities are free to redefine the energy products and services delivered to their customers.

Given the current regional turmoil, CARES is indeed in a fortunate position. While many utilities are forced to make hasty, and possibly ill-considered, decisions about their conservation programs, CARES has a contract with BPA that assures them of stable funding for the next two years. This allows CARES the opportunity to pilot different approaches when new and less-proven program strategies are required, or to move aggressively in markets where current financial incentives may be more attractive to customers than future incentives.

OVERALL STRATEGIC DIRECTION

In developing an overarching approach and more detailed strategies, PEA relied on strategic goals, objectives, and policies developed by the *Conservation Committee* and the *Oversight Committee*, information garnered from orientation activities (such as visits to individual utilities), and its own information base.

The Conservation Strategic Plan (CSP) provides an overall strategic response to several significant external, internal, and situational factors confronting CARES utilities, summarized in Table 1. First, are the major external factors involving changes in the regional and national utility industry. Second, are the internally generated challenges presented by the objectives and policies of CARES as developed in the planning process. Finally, a number of ''situational factors'' are listed which provide challenges and opportunities in specific conservation markets.

The *Conservation Strategic Plan* provides a strategic response to these external elements and the *CSP*'s own objectives that is most simply summarized in the following ''formula'':

Customer Participation =
Incentives + *Financing* + *Marketing/Customer Service*

The ''formula'' suggests that customer participation in conservation programs is a function of the incentive or rebate level, the financing package, and the marketing and service effort provided to customers. If one element is de-emphasized (e.g., reduced rebates), then the other elements must be enhanced if participation levels are to be sustained. The *CSP* suggests just such a basic strategy consisting of those three elements:

Modest Incentives. Although traditional rebate programs have been very successful in capturing conservation resources, the *CSP* objectives call for reducing conservation cost impacts on utility budgets and rates. Under the *CSP*, rebate incentives are reduced or eliminated depending on the market served.

Financing and the Energy Service Charge. The *CSP* recommends that CARES utilities assist its customers with the financing of conservation investments where appropriate. Preferably an *Energy Service Charge* mechanism (discussed later) would be offered to customers as a way for utilities to recover their costs. The proposed *ESC* would be preferred to more standard loan arrangements because it would be more convenient for customers to access, could have a low interest rate, builds utility relationships with customers, and offers the utility an opportunity to integrate other non-efficiency products and services.

Enhanced Marketing and Customer Service. Effective marketing and service provision become critical elements of this equation as customers are carefully weaned from large rebates to increased cost-sharing. Aggressive marketing and education are necessary to make customers aware of the types and effectiveness of energy efficient products and practices, and the direct benefits (both monetary and non-monetary) that they can accrue from these investments. Customer service that is professional, efficient, that is tied directly to customer purchasing channels, and that directly meets customer needs will be essential in overcoming many of the motivational and hassle barriers to customer participation.

Initially, CARES members believed that the primary reason to operate conservation programs was for resource acquisition. But as the changes in the national and regional utility market became more apparent, CARES utilities increasingly recognized the importance of customer service benefits from conservation efforts in a more competitive market. In addition, there was a recognition of the opportunities to integrate

Table 1. *Conservation Strategic Plan*
External, Internal and Situational Factors

Major External Factors:
- Demise of most BPA-supported conservation efforts. Lower cost of supply.
- More ''competitive'' environment for electricity.

Major Internal Factors (Key CSP Objectives):
- Provide conservation services at very low cost (20 mills or less).
- Provide quality services to customers.
- Sustain participation by customers.

Other Situational Factors:
- The Super Good Cents name is well established in the marketplace.
- There is a limited ability of small, diverse utilities to create ''market transformation.''
- Some retrofit markets are nearing saturation, and/or will be difficult to reach if incentives are lowered.
- Higher efficiency equipment is available in the marketplace, but is not purchased during normal market events due to initial costs and other marketplace barriers.
- Existing manufactured housing is a virtually untapped conservation resource.
- Business sector remains an attractive market for conservation services.

conservation services with other electric services such as beneficial electrification and the long-term prospect of marketing of other products such as on-site renewables and fuel cells.

INNOVATIVE FEATURES OF THE CONSERVATION STRATEGIC PLAN

To accomplish the overall strategy and satisfy the more detailed CARES conservation policies, the *Conservation Strategic Plan* presents a number of innovations.

Financing and the Energy Service Charge

Early in the development of program concepts, it was clear that some form of financing would be a major element in program concept design for the long-term. CARES utilities indicated support for conservation programs that are meaningful to both the customer and the utility, and low cost programs with an emphasis on customer cost-sharing. Reducing rebate amounts to levels affordable by the utilities would likely cause a precipitous drop in program penetration levels. However, CARES utilities do have access to low-cost capital that could be loaned or otherwise accessed by customers.

Thus, a key element of the *CARES CSP* is a *Financing/ Energy Service Charge (ESC)* mechanism. This is proposed as an overlay to most of the residential and business program concepts (except new construction). The *ESC* component is designed to facilitate utility financing, billing, and customer repayment of the utility costs of energy efficiency products and services. When financing/*ESC* is offered, customers will have the option of using that service or selecting a rebate of equivalent value.

Functioning as an ultra-convenient loan, the *ESC* would be useful to fund major measures, such as wall insulation and windows, for retrofit programs. The *ESC* could also be useful in supporting product offerings in *The CARES Catalog*, ranging from compact fluorescent lamps to solar water heaters. The *ESC* may also be useful in supporting high-efficiency replacement equipment such as heat pumps and central air conditioners. The *ESC* has substantial opportunities in the *Business* programs as well, especially for customers with limited capital resources. Financing of new construction projects was not considered due to restrictions in Washington State on public utility financing.

Utility financing of customer conservation measures and an *Energy Service Charge (ESC)* are proposed for some programs as a way to lower the cost of conservation while still removing one of the key barriers to conservation: a lack of financial resources by customers. The *ESC* is essentially a rate tariff that allows the utility to recover its cost of capital from customers for utility financing of certain products and services. While utility financing will require substantial legal, financial, and administrative work to establish initially, the system is designed to operate very efficiently once in place. It is proposed that the financing program be piloted by two or more utilities over the next two years, at which point CARES members can evaluate its success and decide whether to fully implement a utility financing approach. In keeping with a theme of flexibility, rebates will continue to be an option for utilities and customers, although rebates will typically be less than currently offered.

Marketing, Education, and Customer Services

With less reliance on strong financial incentives, educating and motivating customers becomes more important in eliciting program participation. Each program needs to have a distinct marketing plan and all programs need to offer quality customer services to support customer participation.

PEA also recommends that a general customer education/ marketing campaign be supported in addition to program-specific marketing. In particular, operation of a general marketing campaign can support purchases of equipment, whether new or replacement, and otherwise help to capture lost opportunities.

The following lists major marketing/customer service concepts emphasized by the *CSP*:

Increased Marketing/Customer Service Budgets And Activities. In order to sustain meaningful customer participation in response to reduce incentives and increased customer cost-share, the Strategic Plan recognizes that increase marketing and customer services activity would be needed.

Traditional Marketing Methods. These include bill inserts, advertising, direct mail and telemarketing. Aggressive use of telemarketing, not commonly used by CARES utilities, would be a very effective tool for utilities that wished to accelerate program penetration during the near-term under the BPA contract, and to promote new programs elements, such as the *ESC*.

Alliances With Trade Allies. Many of the conservation programs (e.g., *Business* and *Manufactured Home*) strongly emphasize trade ally alliances (e.g., local vendors, contractors, builders) to promote and implement programs.

The CARES Catalog. Discussed in detail in the next section, the *CARES Catalog* is designed to support sales of

specific equipment, primarily in the residential sector. But it is also intended to be used as a marketing and educational vehicle for other programs, including non-residential energy efficiency, beneficial electrification, and other utility services and products.

''Call Your Utility First'' Theme. The *CSP* strongly emphasizes a common marketing theme for CARES utilities; namely, encouraging customers to call their utility first for ''one-stop'' energy services whenever contemplating equipment replacement, a remodeling project, a new building, or any other energy-related activity. By capturing the attention of customers before they have made their final investment decisions, utilities can provide valuable services and capture maximum amounts of energy efficiency at costs far lower than through traditional retrofit programs. The evolving partnerships between utilities and customers would also provide a basis for providing other utility services as well.

Custom Service Path. The *CSP* also recommends a custom service path for businesses with more complex projects requiring extensive customer interaction and technical assistance. An account-executive approach would be most suitable in these cases.

Expanded And Targeted Markets. The *CSP* identifies a number of new or under-served markets that provide major opportunities for providing conservation services. These include: manufactured housing, lighting, heat pumps, and appliances.

Customer-Initiated Equipment Replacement

Both business and residential programs place an increased emphasis on upgrading efficiency at the time that equipment, such as heating equipment, motors, and appliances, is normally replaced. The goal of these efforts is to take advantage of the low-cost efficiency opportunities available when equipment is being purchased for reasons other than energy efficiency, for example, as a result of equipment failure or remodeling projects.

For businesses, the *Strategic Plan* recommends a special marketing and service effort to enhance the efficiency of equipment during customer initiated equipment replacement events. Recommendations include equipment labeling, a customer specific data base, and quick response assistance and vendor referrals.

Utility Product/Service Catalog

The CARES Catalog is a new and innovative program concept. As proposed, *The CARES Catalog* is a periodic publication designed to establish and nurture communications with residential and small business customers, and to provide an efficient vehicle for marketing DSM programs, products, and services. As a regularly distributed newsletter/catalog, *The CARES Catalog* would provide consumer education and promotion of the overall CARES effort, the residential-sector program offerings, and direct sales of DSM products not available through the other residential programs. Local vendor support will also be provided, through *The CARES Catalog* and local referrals, to facilitate increased energy efficiency of market-driven equipment purchases.

This ''publication'' would consist of an electronic information file that utilities can customize and integrate with existing communication vehicles. One key element of the catalog program is an effort to support high-efficiency heating equipment and appliances, as this market requires regular marketing to stay in the public eye. Another key element calls for alliances with local vendors and contractors. Finally, this marketing and customer service tool can be used to promote other utility products and services.

Flexible Options for CARES Utilities

CARES members, while sharing some common goals, differ in size, experience, customer base, and geography. CARES was formed because the member utilities believed that such an organization could provide the benefits of core planning, economies of scale, technical support, and organizational efficiency, while also offering flexibility in program implementation, an ability to share experiences, and more control over possible paths in conservation programs. The *Conservation Strategic Plan* articulates a role for CARES, relative to each proposed program, typically including program development, many types of technical support, and joint marketing of programs in some markets. It is also proposed that CARES would develop the bonding or other financial resources needed to fund the *ESC* concept, and assist utilities with loan management and customer billing, if needed.

The *CSP* recognizes that not all of the CARES utilities will be interested in implementing more aggressive conservation financing/service programs. In some cases, staffing concerns, differing utility priorities, or other resource limitations will cause some utilities to desire a lower level of conservation services. Therefore, a *Basic Path* and an *Enhanced Path* are offered to reflect individual utility needs/ preferences regarding financing options over the long-term. The *Basic Path* relies strictly on rebates (although smaller rebates than under the current CARES programs), while the *Enhanced Path* includes financing through an *ESC* as an option for customers along with a more aggressive marketing and customer service effort. The main features of these alternative paths are summarized below:

Enhanced Path:
Offers financing or Energy Service Charge

Has enhanced marketing and customer services including CARES catalog and expanded markets.
Achieves high customer participation rates

Basic Path:
Offers rebates for most programs
(Local bank financing at customer's discretion)
Traditional marketing and customer services
Lower rate of customer participation

PROGRAM CONCEPT SUMMARIES

PEA worked with the CARES advisory committees to identify program concepts that merited further development. Some are enhancements of current programs and others are new innovative programs. The program concept development process included a review of utilities' conservation progress to-date and an assessment of the remaining needs of each market segment for each utility. Program concepts were designed to be responsive to the goals, policies, and objectives developed in earlier *CSP* steps.

Programs were treated at the conceptual level, so that CARES utilities could select the direction for future program development. The *CARES Conservation Strategic Plan* provides five program concepts to serve the residential sector and two business program concepts. These are enumerated in Table 2.

PEA recommends separate near-term and long-term strategies for both residential and business program incentives. Generally, it is assumed that reduced customer incentives will be needed in response to the phase-out of BPA funds, and to reduce the utility cost-of-conservation to levels supported by the *CSP*. Most of the program concepts that are based on existing programs offer a strategy for transitioning customers away from large rebates to higher levels of customer cost-share. New program concepts, and new elements proposed for existing programs, were developed with incentives that are consistent with long-term objectives. Financing options, such as an *Energy Service Charge*, are expected to assume a primary role as the current utility rebates are reduced or eliminated after BPA funding expires.

Table 2. *Conservation Strategic Plan Program Concepts*

Residential Programs:

- Comprehensive Weatherization Program
- Manufactured Home Weatherization Program
- SGC/CARES Residential New Construction Program
- SGC/Manufactured Home Program
- The CARES Catalog

Business Programs:

- Fast Track Service Program
- Custom Service Program

Residential Program Concepts

Several of the residential program concepts are modified versions of programs currently or formerly offered by CARES members. The proposed *Comprehensive Weatherization Program* and the *Super GOOD CENTS/New Construction Program* are based on BPA program designs, but are refined to better meet the near-term needs and desires of the CARES member utilities. In the long-term, adjustments to the incentive offerings for these programs are proposed to reduce the utility cost of the conservation acquired.

The *Super GOOD CENTS Manufactured Homes/MAP Alternative Program* is proposed take advantage of regional interest in sustaining the momentum created by BPA's *Manufactured Housing Acquisition Program (MAP)* in securing energy efficiency in new manufactured homes. BPA's very successful program effectively ended in July 1995. In its place will be a new market-driven effort which does not rely on manufacturer incentives and heavy involvement by BPA. The proposed *CARES Super GOOD CENTS Manufactured Home Program* will build upon recent agreements involving BPA, several regional utilities, and state energy offices. The resulting program will retain most of the *SGC-MAP* program elements, but will eliminate the manufacturer incentive. Instead, consumer rebates and dealer sales incentives will be provided.

Two new program concepts are being proposed to reach additional markets: the *Manufactured Home Weatherization Program* and the *CARES Catalog*, a proposed marketing publication discussed earlier.

The *Manufactured Home Weatherization Program* uses an innovative ''two-step'' approach for retrofitting manufactured homes. The current BPA developed program, a technically competent comprehensive retrofit, has not met the needs of either utilities or customers, and few mobile homes have been weatherized. The proposed approach provides an initial array of low-cost, highly effective services to the customer at no direct cost. The second step, more substantial weatherization work, is undertaken if the customer elects to pay for most of the work by use of the *ESC* and/or modest rebates.

Business Program Concepts

For the purposes of this strategic plan, the business sector includes commercial, industrial, irrigation, public, and non-profit facilities. Many aspects of the proposed programs are similar to what CARES utilities are currently offering, such as commercial and industrial (C&I) retrofit and new C&I construction, but are redesigned to better reflect the needs and desires of CARES utilities. In general, these programs reduce cash incentives, offer financing options, and develop new marketing and technical service approaches to reach additional markets. As in the case of the residential programs, the *ESC* is proposed as an overlay to most of the business programs. The *Business Programs* consist of two service delivery paths:

Fast Track Service builds on the current CARES commercial/industrial conservation programs by folding all of the straight-forward projects into a single track. The *Fast Track* is designed to quickly handle pre-qualified (i.e., pre-screened) efficiency measures whether they involve new construction, equipment replacement, or retrofit projects. Utility conservation service providers would be able to use checklists to identify eligible projects and measures. Most of the projects that CARES utilities are likely to handle (although not necessarily most of the energy resource) will be through the *Fast Track*. High priority market segments that would most frequently be served by the *Fast Track* include:

Small Commercial Buildings
Pre-Qualified Lighting Measures
Equipment Replacement

The *Custom Service Program* is designed to handle projects that are too large or complex to accurately pre-qualify into a checklist or are sufficiently large in scale to economically justify custom service. Such complex measures as commercial HVAC systems, industrial processes, large irrigation systems, etc., will usually be covered under the *Custom Service*. The main innovations are a set of well-documented and streamlined procedures for: selecting the type of analysis that best serves the customer's needs; identifying and procuring technical assistance; and developing incentive/financing packages.

Typically, discussions and negotiations between the utility's account executive and the customer would be necessary for these types of projects. In addition, these projects usually require specialized technical assistance to be brought in from outside of the utility. High priority market segments that would most frequently be served by the *Custom Service Program* include:

Lighting Design
Complex HVAC Systems
Industrial Process Equipment Design
Large Irrigation System Projects

OVERVIEW OF CONSERVATION COSTS AND SAVINGS

This section summarizes the estimated costs, savings, and budgets of the proposed conservation programs over a ten year period. These estimates were made for the combined CARES utilities under three scenarios:

The original *Integrated Resource Plan (IRP)* estimates prepared by each of the CARES utilities;

An *Enhanced* scenario which is based on using the principal recommendations of the *Conservation Strategic Plan* (i.e., the *Enhanced* path), including use of the *ESC* and aggressive marketing; and,

The *Basic* scenario for utilities which elect not to adopt the principal *Strategic Plan* recommendations but wish to maintain a basic level of conservation services.

These energy savings, utility costs, and program budget estimates are based on a number of simplifying assumptions; however, realistic changes in these assumptions do not significantly change the basic findings that are presented in the following sections. These analyses were conducted for policy development purposes and are not intended to precisely project the future activities of CARES utilities. Although each scenario assumes that all of the utilities act uniformly, in reality, CARES utilities are free to pick and choose among the array of programs, to mix the *Enhanced* and *Basic* approaches, or to limit or exceed the activity levels assumed in these analyses.

Table 3 summarizes the program costs and savings estimates for the combined CARES utilities under the three scenarios. In addition, the table shows the cost and savings estimates as a proportion of the original IRP estimates.

The total utility cost estimate from the original *IRPs* is $55 million (expressed as levelized costs in 1994 dollars). By comparison, the *Enhanced* scenario's total cost estimate is $39.6 million, or 72% of the *IRP* estimate; and the *Basic* scenario's cost estimate is $22.9 million, or 42% of the *IRP*. These results are to be expected since the overall incentive structure proposed by the *Enhanced* scenario is lower than that of the *IRP,* and the *Basic* scenario is lower still.

Even more significant are the differences in the savings estimates. The *Enhanced* scenario offers 175,960 MWh's

Table 3. *Comparison of Costs and Savings Scenarios*
Totals for Cares Utilities
(1998 TO 2007)

	Totals	% of IRP	Residential Programs	% of IRP	Business Programs	% of IRP
IRP:						
Megawatt-Hours Per Year*	138,442		82,175		56,268	
Total Utility Costs ($1000s)**	$55,029		$40,562		$14,467	
Enhanced:						
Total MWh Savings Per Year*	175,960	127%	124,758	152%	51,202	91%
Total Utility Costs ($1000s)**	$39,604	72%	$28,431	70%	$11,174	77%
Basic:						
Total MWh Savings Per Year*	63,077	46%	39,345	48%	23,732	42%
Total Utility Costs ($1000s)**	$22,952	42%	$11,273	28%	$7,726	53%

*Total annual savings at full operation with line losses.
**Expressed as total levelized costs in 1994 $.

of total annual energy savings, or 127% of the *IRP's* estimate. The *Enhanced* scenario offers more savings potential than the *IRP* scenario, despite costing less, for two reasons. First, the *Enhanced* scenario contains programs which address new or under-served major markets including: retrofit mobile home weatherization; a residential water heater/ appliance/heat-pump program; and a new manufactured home program. Second, the *Enhanced* scenario projects a higher penetration rate than *IRP* estimates for some residential and business programs for some utilities. In these cases, PEA felt that the aggressive marketing and service effort proposed by the *Strategic Plan* would result in higher penetration rates than these utilities estimated in their *IRPs.* It should be noted that the innovative strategies employed in this plan to reduce cost/kWh will work only with aggressive and effective implementation.

The *Basic* scenario is estimated to offer 63,077 MWh's of savings annually, or 46% of the *IRP* estimates. Although slightly less expensive than the IRP scenario on a per kWh basis, the *Basic* scenario represents a significant reduction in conservation activity and costs more per kWh than the *Enhanced* scenario.

While the *Enhanced* scenario offers substantially greater efficiency savings than the *Basic* and the *IRP* scenarios, it is lower than the original CARES targets for savings under the BPA contract. Furthermore, the actual experience of CARES during the past two years of conservation activity dramatically exceeds the original BPA targets. Thus, although the *Enhanced* scenario provides a significant level of conservation activity, it is much less than what CARES utilities are currently doing under the current BPA contract with the availability of substantial rebates.

For all three scenarios, nearly every program is very cost-effective with levelized costs well below 28 mills per kWh on a utility cost test basis. The *Enhanced* scenario offers the most cost-effective package of programs where all save one are at or below 20 mills per kWh.

SUMMARY

The *Conservation Strategic Plan* presents a path for CARES to continue securing significant conservation resources and fulfill the organizational goals of CARES. It also recognizes the needs of member utilities to hold down costs and rates, while providing valued customer services. The CSP reflects a new direction that replaces large financial incentives with more sophisticated marketing, emphasizes loans rather than rebates, and works with natural markets to shift product

selection to more efficient choices. The *Enhanced Path*, if fully implemented by all utilities, is estimated to save slightly more energy than projected in the individual utility Integrated Resource Plans, but for only two-thirds the cost.

There is still some substantial program development work to undertake in the next six to nine months. While some of the program approaches are minor changes from current program offerings, in other areas, innovation is necessary to meet all of the goals of CARES for conservation resources. In the time remaining on its contract with BPA, CARES needs to fully develop the innovative aspects of the CSP to reap the benefits of a DSM strategy with more customer cost sharing and improved marketing and customer services.