THE INCENTIVE STRUCTURE AND LEVEL FOR BPA's PURCHASE OF ENERGY SAVINGS

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The Purchase of Energy Savings (PES) is one of several commercial building retrofit activities currently being conducted by the Bonneville Power Administration (BPA) in the Pacific Northwest. The incentive structure and level used within this program has been refined over time. In field testing the PES approach, the private entrepreneurs responding to the solicitation requested rather high incentive levels and short payback periods for the commercial buildings to be retrofitted. This indicated that some sponsors were mainly identifying low cost, quick payback conservation measures through their preliminary audits and substituting BPA's payments for the building owner's contribution towards the cost of the job. The BPA incentive was set at a percentage of the cost of each job.

The problem with setting incentives based on cost of the job is that the approach does not recognize the value of the energy savings to the sponsor/building owner. For example, if a job cost $20,000, BPA would pay the same fraction of that amount regardless of whether there were 1,000 kWh saved annually or 100,000 kWh saved annually. Obviously, there is a big difference in dollar savings to the sponsor/building owner from these two different energy savings figures. So BPA's objective in redesigning the incentive structure and level for the pilot program was to take into account the value of the energy savings in determining the incentive BPA should pay.

For the PES pilot program, BPA negotiated a rate of return (ROR) on investment with each sponsor, which is applied on a job-by-job basis to calculate the BPA incentive. The primary disadvantage of using ROR centered on its potential complexity. The challenge was to clearly present the calculation, avoid complexity, and gain potential sponsor's acceptance of the approach. To clear these hurdles, a cookbook with step-by-step instructions was developed for applying the ROR calculation. To assure that sponsors would accept the approach, the cookbook was shared with field test sponsors and other potential pilot program sponsors to obtain their reaction and comments. They all felt the approach was an acceptable way of determining whether or not an investment is economicly attractive.

Using the ROR calculation, the sum of the value of the energy savings plus the incentive payments from BPA provide the sponsor with his negotiated ROR, if the project provides the estimated savings at the expected costs. Central to the calculation is reliable energy audit information on the costs and energy savings available in the building. Using this information, and the sponsor's ROR, the present value of the energy savings and the project costs are calculated. The BPA incentive necessary for the sponsor to meet it's ROR can then be calculated by subtracting the present value of the energy savings from the present value of the project costs. This single up-front payment can then be converted into an incentive payment per kWh saved over a number of years.

In reviewing the information submitted by potential sponsors on ROR for the PES pilot program, it was apparent that the methodology needed some adjustment. It was also apparent that most potential sponsors did not adequately consider BPA's ROR methodology in identifying the ROR they required to participate in the pilot program. Instead, they presented the ROR in terms they were used to dealing with. Some critical aspects of BPA's methodology were not considered, such as that it applies to a project, from which the sponsor does not usually receive all the benefits, or that there are certain overhead costs associated with completing a transaction which are not covered by the methodology. Some potential sponsors didn't recognize that the BPA ROR methodology is a pre-tax calculation, and that tax considerations must be taken into account if they need to achieve a post-tax ROR figure.

A letter was sent adjusting the methodology, highlighting it's critical aspects and requesting potential sponsors to reconsider the ROR figures previously submitted. The result was positive, with most potential sponsors submitting much more accurate figures. The rate of return on investment negotiated with participating sponsors varied between sponsors, with the average at about a 25% ROR. Those sponsors being paid based on measured energy savings obtained slightly higher RORs due to the increased risk of not achieving the expected energy savings.

BPA's PES effort is designed to attract private entrepreneurs as program operators. These entrepreneurs are targeting larger office buildings and retail outlets, as well as institutional buildings, through their marketing activities. The fact that BPA's payments for energy savings will be made over a number of years limits participation because the building owner or the lessee must have a long-term interest in the building and its energy use in order for this arrangement to look attractive. Sponsors are obtaining the financing needed to retrofit these buildings through loans, leases, shared savings, and internal financing by building owners. These building categories have been targeted because of their high potential for energy savings, as well as ownership characteristics and decision-making structures which offer a higher likelyhood for success.

Sponsors can receive payments from BPA based on either an estimated or measured energy savings approach. Under the measured savings approach, the sponsor accepts the risk that the energy savings will actually occur. The energy savings which actually occur, as measured by an agreed-upon methodology, times the incentive level agreed to by both parties, represents the sponsor's payment. While shifting all risk to the sponsor sounds very attractive, the measured savings approach can severely limit the types of sponsors able to participate in the program. Many of the transactions sponsors have proposed so far are financed by banks. These banks, as well as the building owners, are willing to finance the retrofit of a commercial building when BPA payments are based on estimated savings because then they are assured that the sponsor/building owner has the cash flow to repay the loan. Under the measured savings approach, the banks and building owners are less willing to finance the transaction because BPA payments are not assured.

As one can readily see, the incentive structure and level contained within a conservation program's design can have a dramatic impact on the program's effectiveness. A utility's objectives must be considered carefully because these design features determine the types of sponsors, financing and buildings able to participate. For BPA's PES effort, it is important to test the capabilities of a variety of sponsors that can deliver the energy savings from significant segments of the commercial market. However, this objective must be balenced against BPA's desire to use private sector financing, rather than U.S. Treasury borrowings, to produce the up-front capital necessary to retrofit a building.