Equipoise Consulting, Inc.

Evaluation

Project Management

Final Report for

Energy Trust of Oregon's Pilot Irrigation Initiative Program Process Evaluation

Submitted by:

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In conjunction with:

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1 EXECUTIVE SUMMARY

The Irrigation Initiative Program (IIP) was implemented by a Program Management Contractor (PMC) as a collaborative venture between Energy Trust of Oregon and the electric utility of the intended growers, PacifiCorp. It targeted agricultural customers within the Klamath Basin – a geographical area with growers in both California and Oregon. The PMC was charged with running the program as conceived by Energy Trust and PacifiCorp. The program was considered a pilot and planned to run from June 2005 through 2007. Subsequent decisions by Energy Trust and PacifiCorp caused a divergence in how the program was run, and brings the pilot to a close in Oregon as of July 31, 2007, although it is expected to continue within California beyond this time.

The program attempted to increase the efficiency of the irrigation pumping systems for the estimated 3,949 eligible customers (2,073 in Oregon and 1,876 in California) through two distinct avenues. Educating the growers regarding the efficiency of their pump system through a pump test, combined with financial incentives to help defray the cost of repairing the pump was the first approach. The second approach was down stream of the pump. Irrigation system nozzles were provided free of charge to any grower who exchanged old nozzles.

1.1 Evaluation Objectives

With the changes in the program implementation structure within Oregon, Energy Trust felt that an evaluation was needed to document the program and provide recommendations for potential future programs.

The evaluation goals for this process assessment were to:

1. Document the program's structure, goals, history, and performance.
2. Review and analyze the program to provide recommendations on how to improve program implementation and effectiveness.

1.2 Key Findings

While there were multiple findings from the evaluation, the key ones are:

- The Irrigation Initiative had a positive outcome from a field perspective in that those involved with the program agree there is a need for the program measures—nozzles, pump tests, and pump repairs— and participating growers and vendors expressed high satisfaction.
- Field contacts believe that many more pump tests could have been delivered had the program run unhampered for two full irrigation seasons. Progress had been made towards savings goals and the field contractors reported high levels of interest in the program among growers; consistent with this finding, surveyed participating growers expressed concern that their irrigation systems and components use energy and water efficiently.
- The collaboration between Energy Trust and PacifiCorp was hampered by their different organizational cultures, which in turn reflect their different regulatory oversight requirements. The regulatory oversight of Energy Trust has brought about systems that are inflexible. The political lines created by the differences between California and Oregon trumped the geographical realities of the Klamath Basin growers and the desire to provide a simply understood and effective agricultural energy efficiency program across state boundaries.

- Because of the different requirements, the program was administratively complex. This administrative complexity spawned micro-management which had multiple consequences: it increased program costs, strained program relationships, and ultimately resulted in far fewer measures being delivered by the program than anticipated, because the PMC effort was diverted into administrative tasks rather than field tasks.
- With a deemed savings of 9.2 kWh per year per nozzle, and assuming that all the nozzles exchanged were installed into an irrigation system, the 14,515 nozzles indicated to be exchanged by Oregon growers provide savings of 133,538 kWh/year (0.02 aMW). The average life of a nozzle is assumed to be 3 years, which provide 400,614 kWh for the lifecycle of the nozzles. Forty-five percent of the nozzles forecast to be exchanged within this period of time actually were exchanged.
- The program garnered no energy savings from pump repairs or pump retrofits, although survey participants indicated they took recommended actions outside of Energy Trust.
- One of the main drivers for the program, an expected >500 percent rate increase, did not unfold as planned.

1.3 Key Conclusions and Recommendations

Conclusion 1: In response to triple oversight from a board of directors, regulators, and legislatures, Energy Trust has evolved systems and processes that put its fiduciary responsibilities front and center, with very high standards of completeness and accuracy of actions, the tracking of actions, and the savings associated with the actions. Consequently, these systems and processes are not flexible. And they impose significant administrative costs that need to be offset by high program savings, so that on a per-kilowatt-hour-saved basis, the costs are low and programs are cost effective.

Recommendation 1A: Energy Trust needs to recognize its systems and processes are not flexible, having been designed to attain specific objectives. Energy Trust staff involved in program development need to keenly understand that "exceptions" to standard procedures—most significantly, the tracking of program activities—cannot be made.

Recommendation 1B: Should Energy Trust and another agency decide it might be mutually beneficial to offer a single program to customers, Energy Trust should clearly express to the other party that it needs to be the implementing agency. The other party could contribute to program design and would be asked to bear the costs of its participants, but Energy Trust is not able to work collaboratively; its systems and processes are fixed. However, because Energy Trust cannot be an implementing party in another state, collaboration across two states is not recommended in the future as the difficulties that arose are organizational and outside the ability of the program managers to overcome.

Conclusion 2: Following its established practice, Energy Trust's RFPs to solicit a PMC for the Irrigation Initiative requested contractor services to develop and implement a program. Also following established practice, the resulting contract for the PMC's services was relatively specific regarding the PMC's required activities, which assumes a program design. This process had the effect of limiting the contribution PMC team members could make to the articulation of program assumptions, design, and goals (in areas in which the PMC team members are considered to be experts), to the detriment of the Irrigation Initiative.

Recommendation 2: Energy Trust can continue to request PMC services through an RFP for program development and implementation, yet it should execute two sequential contracts with the selected firm, the first for program design/development and the second for program implementation.

This approach would enable Energy Trust to make better use of the technical and market expertise of the winning bidder by increasing their role in program design, an expertise that is particularly important for programs targeting a community with an associated culture, be that a geographic community or community defined by some other criteria.

Conclusion 3: Judging from the EQIP program, federal programs also lack flexibility. The Irrigation Initiative was hampered by inaccurate assumptions regarding how it would leverage the EQIP program.

Recommendation 3: When considering how an Energy Trust program might leverage a federal program, it is important for program developers to clearly understand how the federal program operates, its timelines, and its criteria. The program logic should reflect both Energy Trust and federal constraints and should be developed in advance of contracting with a PMC for implementation services.

Conclusion 4: A primary factor underlying the Program's design was the planned rate increase. Without the planned rate increase of >500% the anticipated demand for program services was reduced.

Recommendation 4: Energy Trust should consider changing the design of, or even terminating, a program if major factors on which the program's success are predicated change.

Conclusion 5: Some program participants that received pump repair and replacement recommendations from the program pump tests had taken action on recommendations. None of the irrigators that took action applied for or received Energy Trust incentives.

Recommendation 5: If, and when, Energy Trust considers offering a pump test services as part of one of its programs research should be performed to see if the provision of free (or partially subsidized) pump testing with no incentive for a repairing the pump will result in a sufficient number of pump repairs and replacements to make the service cost effective.

A. APPENDIX A – ENERGY TRUST RESPONSE TO RECOMMENDATIONS

Evaluators Comment

Process evaluations look at multiple aspects of how a program works. Such evaluations attempt to look at areas that work well as well as those that have difficulty. Recommendations are made to help smooth out areas and create an efficient program. By their nature, process evaluations can bring to light areas of complexity which are researched thoroughly, but recommendations are made that may have missed certain nuances or overemphasize areas of smaller significance. This section provides Energy Trust of Oregon the ability to respond to our conclusions and recommendations. We looked closely at each response and made changes to our draft report on areas with which we concurred. Any changes between the draft and final report are so noted below.

Energy Trust of Oregon Comments

Staff Response to Energy Trust of Oregon's Pilot Irrigation Initiative Program Process Evaluation Report Conclusions and recommendations

Conclusion 1: In response to triple oversight from a board of directors, regulators, and legislatures, Energy Trust has evolved systems and processes that put its fiduciary responsibilities front and center, with very high standards of completeness and accuracy of actions, the tracking of actions, and the savings associated with the actions. Consequently, these systems and processes are not flexible. And they impose significant administrative costs that need to be offset by high program savings, so that on a per-kilowatt-hour-saved basis, the costs are low and programs are cost effective.

Recommendation 1A: Energy Trust needs to recognize its systems and processes are not flexible, having been design to attain specific objectives. Energy Trust staff involved in program development need to keenly understand that "exceptions" to standard procedures—most significantly, the tracking of program activities—cannot be made.

Recommendation 1B: Should Energy Trust and another agency decide it might be mutually beneficial to offer a single program to customers, Energy Trust should clearly express to the other party that it needs to be the implementing agency. The other party could contribute to program design and would be asked to bear the costs of its participants, but Energy Trust is not able to work collaboratively; its systems and processes are fixed. However, because Energy Trust cannot be an implementing party in another state, collaboration across two states is not recommended in the future as the difficulties that arose are organizational and outside the ability of the program managers to overcome.

Energy Trust response: *We agree that Energy Trust has, what many perceive as fairly rigid, requirements on how programs are report, tracked and administered. These requirements are for the most part a result of Energy Trust mission and our legal responsibilities. For example,*

- *state law only allows Energy Trust to spend Oregon rate payer money for the benefit of PGE and PacifiCorp customers,*
- *standard accounting requirements require timely delivery and documentation of invoices,*

- *IRS tax documentation requirements collection of tax information and confidentiality requirements.*

To comply with its contract with the PUC, Energy Trust also sets a high bar for itself in the tracking of savings and program costs. Effective tracking is particularly important for a pilot program, both to determine the benefits of the program and to understand what activities are worth continuing. The reporting of tracking and administrative requirements is clearly specified in all of our contracts and the report indicated that the PMC was aware of the requirements at the time the contract was signed. In any future PMC contract negotiations Energy Trust must ensure that PMCs are aware of the necessity to comply with these contract requirements and must ensure that the firm has the capacity and resources to comply with the contractual requirements.

In addition, Energy Trust is in agreement that the legal, contractual, and reporting requirements of Energy Trust and those of partnering organizations need to be carefully reviewed since they may put strictures on the scope of program partnerships. The goals, mission, management philosophies, accountabilities, and needed contractual requirements of potential partners may not be complimentary in all cases, and in some cases may conflict. Energy Trust has developed successful partnerships with many organizations to implement programs. A foundation of a successful partnership has been that Energy Trust and its partners have a clear understanding of each others operating environments and that these are explicitly and clearly taken into account in contracts and that each party to an agreement have a clear set of expectations. However, Energy Trust is aware that not every partnership results in synergies and will approach future partnerships with a clear view that synergies may be limited and that partnerships can potentially increase the contractual, administrative, and other costs associated with a program.

Evaluation Team: After discussing our conclusion, recommendation, and Energy Trust response, no changes were made within the final report.

Conclusion 2: Following its established practice, Energy Trust's RFPs to solicit a PMC for the Irrigation Initiative requested contractor services to develop and implement a program. Also following established practice, the resulting contract for the PMC's services was relatively specific regarding the PMC's required activities, which assumes a program design. This process had the effect of limiting the contribution PMC team members could make to the articulation of program assumptions, design, and goals (in areas in which the PMC team members are considered to be experts), to the detriment of the Irrigation Initiative.

Recommendation 2: Energy Trust can continue to request PMC services through an RFP for program development and implementation, yet it should execute two sequential contracts with the selected firm, the first for program design/ development and the second for program implementation. This approach would enable Energy Trust to make better use of the technical and market expertise of the winning bidder by increasing their role in program design, an expertise that is particularly important for programs targeting a community with an associated culture, be that a geographic community or community defined by some other criteria.

Energy Trust response: *We are in agreement that when targeting a small group or specific region, consultation with the targeted stakeholders is needed and it is beneficial to consult with regional and industry specific experts.*

Energy Trust programs are designed by Energy Trust's planning department and the efficiency program staff with the input of experienced consultants and industry stakeholders. In this case, planning staff hired an expert contractor to design the program. While on-the-ground experts may feel they were not adequately consulted about program design, a significant effort was made to solicit and incorporate their input. The problem may have arisen because the program design changed significantly at least twice based on additional expert input. Some parties may have provided feedback on an early version.

When the design phase was over, it was determined that the implementation contract should be competed. The RFP process allows PMCs to offer approaches that fit into, or are alternatives to, the proposed framework. Once a PMC has been selected and contract negotiations are initiated additional, changes and additions to the program design are also considered with PMC input. In this case the contractor recommended significant changes to the program design, and some of these were incorporated. Adding an official design/development phase to our program implementation process appears to be redundant. We always consider input from program management contractors regarding savings and cost estimates, but use other experts to make sure their self-interest does not result in overly optimistic assumptions.

Evaluation Team: After discussing our conclusion, recommendation, and Energy Trust response, no changes were made within the final report.

Conclusion 3: Judging from the EQIP program, federal programs also lack flexibility. The Irrigation Initiative was hampered by inaccurate assumptions regarding how it would leverage the EQIP program.

Recommendation 3: When considering how an Energy Trust program might leverage a federal program, it is important for program developers to clearly understand how the federal program operates, its timelines, and its criteria. The program logic should reflect both Energy Trust and federal constraints and should be developed in advance of contracting with a PMC for implementation services.

Energy Trust response*: Staff agrees that the programs may have compatibility issues based on their objectives, schedules, and accountabilities. Energy Trust staff had great difficulty engaging the time and attention of overworked EQIP staff in the program design, and included coordination with EQIP as a key feature only in the final redesign, in consultation with the PMC. However, the EQIP program may work well for its stated purposes.*

Evaluation Team: After discussing our conclusion, recommendation, and Energy Trust response, no changes were made within the final report.

Conclusion 4: Energy Trust's systems and processes, including the use of PMC, are not suitable for small programs.

Recommendation 4: When considering opportunities for small-scale programs, Energy Trust should offer such programs only if they can be conducted as an augmentation to services provided under a larger program or can be implemented by Energy Trust staff. Field staff for small-scale programs could work as Program Delivery Contractors under the direction of the PMC of a larger program.

Energy Trust response: *We agree that we should review how we implement pilot programs and how we measure their success. The PMC model may not have been the best choice, but was also determined through the need for a PMC by our utilty program partner.*

Pilot programs are intended to test implementation strategies and potential costs and savings at a small scale, and should assess only whether the program design has the potential to be cost-effective at a larger scale or over longer periods of time. Also, Pilot programs should consider focusing on testing implementation strategies and their success (e.g.,. pump tests result in repairs/replacements using EQIP and Energy Trust incentives, and whether repaired and replaced pumps provide sufficient savings to make the program cost effective) and do not necessarily require having the elements of a large scale program (1-800 number, website, etc.).

After discussing our conclusion, recommendation, and Energy Trust response, no changes were made within the final report.

Conclusion 5: Activity tracking for the Irrigation Initiative required the tracking of scheduled and completed pump tests; for neither activity can energy savings be ascribed. FastTrack is not designed to track program-delivered measures that lack energy savings, which increased the administrative difficulty of the Irrigation Initiative.

Recommendation 5: Before making the final decision to proceed with a program that implements measures as a precursor to the attainment of energy savings, Energy Trust should clearly specify procedures for tracking program activities in FastTrack. These procedures should be fully understood by the selected PMC or implementing party, and agreed to as part of the implementation contract.

Energy Trust Response: *Staff does not concur with the conclusion as FastTrack is more like accounting software than savings tracking software. It can easily store all types of measure and accounting data. FastTrack is used to ensure prompt payment to PMCs for measures installed and services rendered. While we are constantly improving how we use Fast Track, we believe that the data requirements that are in dispute are basic, necessary information. Staff does concur with the recommendation that program tracking and administrative requirements be clearly specified in the PMC contract as was the case for this program.*

Evaluation Team: After discussing this conclusion, recommendation, and Energy Trust response, we chose to drop this recommendation from the final report.

Energy Trust also suggested two other findings/recommendations for the Evaluation Team to consider:

Finding 1: *A primary factor underlying the Program's design was the planned utility rate increase. Without the planned rate increase of >500% the anticipated demand for program services was reduced.*

Recommendation: *Energy Trust should consider changing the design of, or even terminating, a program if major factors on which the program's success are predicated change.*

Finding 2: *Of the seven program participants that received pump repair and replacement recommendations from the program pump tests, two had taken actions on all recommendations, two had followed through on some recommendations, and the remaining three were planning to take some action in the future (with their plans partially dependent on the availability of EQIP funding). None of the four irrigators that took action applied for or received Energy Trust incentives.*

Recommendation: *If and when Energy Trust considers offering a pump test services as part of one of its programs, research should be performed to see if the provision of free (or partially subsidized) pump testing will result in a sufficient number of pump repairs and replacements to make the service cost effective.*

Evaluation Team: After discussing these two findings and recommendations that were generated by staff at Energy Trust, we found them to agree with our assessment of the program. As such, we chose to include both recommendations in the final report.