

## **Single-Resource vs. Combined-Resource Demand Side Management Project.**

**Produced by Ali Alnagger & Cluny South (UBC) for BC Hydro Power Smart .**

The research project's over-arching goal was a comparison of single resource versus combined resource Demand Side Management (DSM) Programs, primarily in North America. To this end the research set out to examine the costs and benefits of combined DSM programs, for the utility provider and the end user, in an attempt to determine whether combined DSM programs provide an improved experience for the end user (e.g. clarity of messaging, ease of participation, increased incentives, etc.) over single resource DSM programs, as well as to clarify whether combined DSM programs do indeed provide increased savings for utility providers. Following on from this the hope was to be able to draw on the research findings to inform future DSM program development at BC Hydro, in areas such as program modeling, incentive structuring systems, and DSM marketing strategies.

To fulfill the research objectives a combination of secondary research, and primary research was employed. Secondary research included online research, identifying existing programs, a literature review, and identifying and sourcing reports. Primary research included telephone interviews, program information collection, and requesting an E Source research report. As part of the project the research team also examined BC Hydro and BC Hydro-Fortis BC programs (past and on-going), as well as program data from other selected North American combined DSM programs. This resulted in the compilation of a combined DSM program database, with detailed information on the programs, which was intended to provide an informative resource bank for future program design. A set of best-practice tables was also compiled, along with a list of benefits and challenges, report recommendations, and future work suggestions.

### **Results:**

While the initial aim of achieving a detailed quantitative comparison of single and combined DSM programs was not ultimately possible, as a result of the evolving dynamic nature of the DSM programs currently available, we were none-the-less able to leverage the experiences of program managers and professionals working in combined DSM programming. This, alongside the extensive secondary research, provided a rich collection of information that is presented in the main report within the following sections: a combined DSM program database; a series of best practice tables; a benefits and challenges section; a recommendations section; and finally a future work section.

In support of combined DSM program delivery the general conclusion was that combined programs have the potential to build greater program awareness, trust and credibility compared to single utility programs. From a utility coordination perspective they have the potential to save staff time, and avoid duplication of effort. They can also allow the sharing of knowledge and stakeholder contacts. Combined programs also have the potential to be more cost effective, benefiting from pooled

## UBC Sustainable Scholars Program 2014.

resources and lower start up risks. Water-energy programs make intuitive good sense since their processes are so intertwined, and this area is flagged as showing potential for high rewards in future development. Perhaps one of the greatest gains combined DSM provision may have over single resource provision lies in the end user experience, where combined programs have shown significantly improved results in terms of awareness, ease of use, customer and trade contractor satisfaction and trust, and increased participation levels. From a marketing perspective, again there appear to be gains to be made from pooled resources and larger budgets, which can lead to greater impact and outreach capabilities. The co-marketing of combined programs is potentially able to deliver more leadership, add value to both utility brands, and enable the combined program to rise above single program competition. It also allows for a clearer more consistent messaging campaign.

On the negative side combined programs are clearly not without their risks and challenges. Program design is likely to be far more complex with a risk of poor implementation and delivery as a result. Corporate requirements may impact on implementation, and it can be hard to manage combined programs without the assistance of a neutral third party administrator. Combined programs need time, and careful human resource management. Data access may be tricky and trust hard to win. Not surprisingly there is a tendency for major partners to dominate and lesser partners to feel less committed. The technical and financial areas also have their issues. Unevenness of budgets is common and it is not unusual to find that each utility has different efficiency savings to harvest in the program. Mismatched service boundaries, reporting timelines, and delivery methods all add to the complexity of managing combined programs. Likewise the variable pricing methods, regulations and outlook of energy efficiency priorities between utility partnerships can be challenging to co-ordinate. There is also often a lack of consistency regarding metrics, reporting codes, and standards. In short finding a common language may be a challenge to achieve. Combined programs struggle with allocating costs and benefits across partners, and embedded data is a particular issue. Co-marketing of combined programs can also pose problems with conflict risk high in this area. Negative brand influence, spillover effects and brand equity are all high level corporate concerns, which make it complex as an area of risk management.

In summary despite the various challenges posed combined DSM programs are considered to be generally worthwhile and are being pursued by an increasing number of parties. The benefits are potentially great and it is likely that strategies to combat the various challenges will emerge over time. In the future work may be done to improve the funding options for combined DSM programming, as well as to streamline evaluation methodology regarding embedded energy, and mismatched metrics. Regulation of the resource industry is likely to continue to tighten across North America, and potentially bring more coherent and holistic standards as a result. Program models in combined DSM are increasing and evolving, and knowledge sharing between organizations is becoming more widespread. Ongoing research and interest in the water-energy nexus is likely to continue.