Answers to Remaining Questions
Power Smart Webinar Jan. 18, 2012

Q: (Doug McKenzie-Mohr): What constituted the 8 residential categories in the CPR?

A:

1. Space Heating & Cooling
2. Lighting
3. Domestic Hot Water (DHW)
4. Refrigeration & Freezers
5. Appliances
6. Computers & Peripherals
7. TV & Entertainment
8. Small Appliances.

Q (Doug McKenzie-Mohr): How were the behaviors selected? Combination of probability, impact and penetration?

A: The simple answer is yes. BC Hydro identified and quantified the best opportunities for residential energy conservation through behavioural change in our Conservation Potential Review 2007. I was not involved with that Review because I was not with BC Hydro at the time yet.

For this project, the number of behaviours was first narrowed down by looking at the potential size of the impact and the availability of information, and by consulting with a range of internal and external experts. This resulted in a list of 24 behaviours in eight groups for the Residential sector.

For these behaviours, the Review used survey data to determine probability, impact and penetration, as you suggested:

- Penetration (what share of the customer base already performed those behaviours on a routine basis)
- Probability (what share of the customer base not already performing the behaviours on a routine basis, would begin to do so.) The survey asked residents how often they would do each behaviour and (for selected behaviours) how frequently they experienced a lapse in the stated behaviour frequency. The self-reported probabilities were discounted accordingly.
- Impact (based on simple engineering estimates)

The Review then calculated an achievable savings associated with each behaviour change looking forward over a period of years.

Note however, that when we design our interventions and communications, we group the behaviours quite differently. Because of the low electricity rates in British Columbia, electricity and electricity conservation face a challenging level of consumer indifference. As recommended by IDEO, BC Hydro therefore needs to make emotional connections between electricity conservation (low involvement) to the things that people care about (high involvement). In collaboration with Cullbridge, the behaviours that were identified were therefore re-categorized for making those emotional connections. The resulting matrix for creative content development also includes specific barriers to specific behavioural actions. The categories in the matrix are:

- Health & Wellness
- Food & Drink
- Life & Leisure
- Family & Friends
- Home & Garden
- Gadgets & Technology

For example, we use the content matrix when we develop the line-up for our member magazine; it helps us develop stories that are of interest to our members while still addressing specific behaviours and their associated barriers. (The member magazine is not an energy efficiency magazine, but rather a lifestyle magazine.)

Q (Elizabeth Babcock): Does anyone have any thoughts about how you might do this if the private utility company does not share data? Would this approach work if residents were to report their own utility data and we provided average use for homes in the area? Any ideas on this are welcome!

A: This will probably not work if people have to report their own consumption. Too much hassle; it will probably only attract the keeners.

Q (Adriana Gomez): What is the cost of this program?

A: no comment.

Q (Adriana Gomez): What is considered cost-effective?

BC Hydro's DSM plans need to pass certain cost-effectiveness tests. Business cases need to consider four different perspectives when calculating cost effectiveness for DSM programs:

1. **All Ratepayers Test (aka Total Resource Cost or TRC Test)** – Measures whether DSM makes sense to ratepayers as a whole. It is a test of economic efficiency and it helps to determine whether it is cheaper or more expensive than new supply from a provincial perspective.
2. **Utility Test** – Measures whether DSM makes economic sense to the Utility. It helps us to determine whether it is cheaper or more expensive than new supply to the Utility.
3. **Non-Participant Test (aka Ratepayer Impact Measure or RIM Test)** – Measures how DSM impacts non-participants. It helps to determine the impact that the DSM program will have on customer's bills or rates due to the cost of operating the program. Does DSM leave DSM non-participants better or worse off?
4. **Participant Test** – Measures whether DSM makes economic sense to the participants of the program by examining their costs and benefits. Does DSM leave DSM participants better or worse off?

Cost-effectiveness analysis is performed looking at the stream of benefits and costs of the DSM investment. Three metrics are calculated for each test:

1. **Benefit-cost ratio** = PV (benefits) / PV (costs)
2. **Net present value (NPV)** = PV (benefits) - PV (costs)
3. **Levelized cost ($/kWh)** = PV (costs – non-energy benefits) / PV (energy savings)