

# Manitoba Hydro's Action Plan

## Dunsky Energy Consulting Power Smart Portfolio Review

The following outlines recommendations being made by Dunsky Energy Consulting on Manitoba Hydro's Power Smart efforts and the Corporation's actions plan addressing the respective recommendations.

**1. Recommendation:** *Close program gaps by creating or expanding programs for:*

- a) *multifamily residential housing,*
- b) *manufactured new homes,*
- c) *consumer electronics and office equipment,*
- d) *appliance retirement,*
- e) *commercial new construction,*
- f) *commercial custom retrofits and small commercial retrofits*

**1a) Recommendation:** Multifamily residential housing sector customers are eligible for the following programs:

**Action Plan:** Manitoba Hydro's Power Smart initiative has been and will continue to target cost effective energy efficient opportunities within the multifamily residential housing sector.

- The following Power Smart Programs target opportunities in multi-family customers classified as residential buildings (less than 3 stories with individual entrances, condominiums and townhouses):
  - Residential Lighting Program
  - Residential Insulation Program
  - Residential New Home Program
  - Power Smart Residential Loan (owner as applicant)
  - Water and Energy Saver Program
  - Residential Earth Power Program
- The following Power Smart programs target opportunities in multi-family customers classified as commercial buildings (large apartments; taller than 3 stories with a floor plate larger than 600 m<sup>2</sup>):
  - Commercial Building Envelope Program (windows and insulation)
  - Commercial Heating Ventilation and Air Conditioning Program
  - Commercial Parking Lot Controller Program
  - Commercial Lighting Program
  - Commercial Clothes Washer Program
  - Commercial New Building Program
  - Commercial Earth Power Program

- Water and Energy Saver Program
  - Manitoba Hydro has Power Smart sales staff dedicated to pursuing energy efficient opportunities with commercial customers, including property managers and landlords, and, as such, multifamily housing has been one of the more active market sectors to engage in energy efficiency upgrades and Power Smart Programs. Although customers within this sector are participating in the programs, the Corporation sees merit in enhancing its marketing efforts by developing a customized marketing brochure which may increase awareness and facilitate additional participation within this market sector.
  - Manitoba Hydro also developed a customized Water and Energy Saver's Program targeting energy and water efficient opportunities within the multifamily housing market sector. This program was launched in the September of 2010.

*1b) Recommendation:* Close program gaps by creating or expanding programs for manufactured new homes.

**Action Plan:** Manufactured (Ready-To-Move) homes are currently eligible for the New Home Program, however there may be merit in taking a more targeted marketing approach with this specific market segment. Manitoba Hydro's primary focus in the new home market has been the typical residential single family home sector as this sector contains the majority of the energy saving potential and has been most challenging due to various barriers unique to this market.

- Continue to focus on the single family home sector, however, supplement this effort through developing a specific marketing strategy targeting the ready-to-move market that will mitigate some of the unique market barriers. A marketing plan specific to the Ready-To-Move (RTM) market segment has been developed. Manitoba Hydro's web site has been updated to include information specific to this market, and has made contact with large builders of RTMs.

*1c) Recommendation:* Close program gaps by creating or expanding programs for consumer electronics and office equipment.

**Action Plan:** Manitoba Hydro is working toward closing the gaps within this market sector and is pursuing emerging opportunities in tandem with other leading edge energy efficiency organizations. For example, Manitoba Hydro is working with a number of Canadian utilities through the Corporation's active participation in the National Set Top Box Alliance. This alliance was created to leverage its combined size to negotiate and influence national service providers to incorporate energy efficiency into the products supplied to consumers. Manitoba Hydro is also a member of the national Standby Power Committee, providing input into potential standards and/or regulation covering standby

power consumption. Manitoba Hydro is investigating the potential to offer cost-effective programs for home electronics, including televisions and home office equipment and will continue to work with other leading edge utilities in pursuing additional economic energy efficient opportunities within this market sector.

*1d) Recommendation:* Close program gaps by creating or expanding programs for appliance retirement.

**Action Plan:** At the time of the Dunskey review, Manitoba was in the process of assessing the economics of pursuing opportunities within this market sector. Manitoba Hydro recognizes the opportunities in this product sector and at present, refrigerators are the only cost effective retirement appliance. Other devices will be monitored on an ongoing basis. Manitoba Hydro will be launching a Refrigerator Recycling Program in early 2011.

*1e) Recommendation:* Close program gaps by creating or expanding programs for commercial new construction.

**Action Plan:** At the time of the Dunskey review, Manitoba Hydro was in the process of developing a new program targeting this sector. Manitoba Hydro launched a Commercial New Buildings Program in March 2009 and is pursuing all economic opportunities within this market sector.

*1f) Recommendation:* Close program gaps by creating or expanding programs for commercial custom retrofits and small commercial retrofits.

**Action Plan:** With respect to commercial custom retrofits, Manitoba Hydro investigates opportunities for economic energy efficiency upgrades in the commercial market on an ongoing basis. Presently, condensing water heaters and water efficient fixtures are being assessed.

With respect to small commercial retrofits, this market opportunity is fully addressed through Manitoba Hydro's Power Smart Shops Program. This program was in the process of being finalized during the Dunskey review. Under the program dedicated Power Smart staff actively solicits companies and pursue opportunities in this market sector and encourage both end of life as well as early retirement replacement of existing inefficient systems. Customers are also provided with predictable energy savings associated with a broad range of opportunities.

**2. Recommendation:** *Provide market actor training in the residential sector, beginning with a comprehensive review of opportunities and needs for market actor training for all programs.*

**Action Plan:** Manitoba Hydro agrees with this strategy and has always considered and offered such training with all of the Corporation's Power Smart programs and providing training is an integral component of all designs where applicable. For example, Manitoba organized and subsidized installer training for geothermal technology. Supplier training has also been completed and is ongoing for participants in highly technical programs such as the R2000, New Home and Residential Solar Hot Water programs.

**3. Recommendation:** *Use upstream incentives in both residential and commercial/industrial sectors, beginning with a comprehensive review of the potential of upstream incentives in all programs. Market actors - retailers, designers, and contractors – are uniquely situated to help customers overcome several market barriers. Product unavailability can be overcome by increased retailer and contractor stocking, which can be encouraged by stocking incentives and market share incentives. Hassle and transaction costs involved in integrating efficiency into complex building designs can be overcome by offering design incentives through owners directly to their design teams. Product first cost can be more effectively reduced via negotiated cooperative promotions (product buy downs) offered to manufacturers and wholesalers. Sales staff incentives can also be used to ensure customers receive adequate information on product efficiency features.*

**Action Plan:** Manitoba Hydro recognizes the value of upstream incentives and the need to encourage and incentivize retailers to provide energy efficient products. Manitoba Hydro therefore evaluates the applicability of upstream incentives as part of the design process for all programs and incentives are offered when considered an effective option. For example, sales staff incentives have been utilized as part of the Energy Star Appliance Program and stocking incentives are currently being considered as part of the redesign of the Energy Efficient Light Fixtures Program. Another example is the incentives used to encourage ecoENERGY evaluators in completing Home Insulation Program applications.

Point-of-purchase discounts are another mechanism used by Manitoba Hydro. For example, point-of-purchase discounts were introduced in the fall of 2008 for Compact Fluorescent Light rebates and in the fall of 2010 for Energy Star Light Fixture rebates to simplify the process for customers.

On the industrial side, Manitoba Hydro also works actively with retailers, designers, and contractors to overcome market barriers to promotion and adoption of energy efficient products. When appropriate, Manitoba Hydro has used stocking incentives for retailers and contractors to ensure an available supply of energy efficient products is in the marketplace. Another example of upstream incentives involves co-funding feasibility studies for implementation of energy efficient technologies which reduces the costs for designers and increased their willingness to consider examining these options.

Activities undertaken by Manitoba Hydro technical staff to influence national market suppliers and stakeholder associations go further upstream than local vendors. Examples

include active involvement in the Canadian and US Department of Energy's Motor Master initiative, the Compressed Air Challenge initiative, the Pump Systems Matter initiative, as well as participation in the development of provincial and national codes, standards and governance advisory boards.

Manitoba Hydro intends to continue considering the option of upstream incentives for all programs and intends to incorporate this mechanism into program designs whenever they would prove effective.

**4. Recommendation:** *Consider options for encouraging limited third-party ideas or implementation: Manitoba Hydro should evaluate the effectiveness of a variety of options for encouraging innovation within the specific context of Manitoban opportunities. Third-party set-asides, such as those in California and Minnesota, are one option to consider.*

**Action Plan:** Manitoba Hydro has welcomed and continues to welcome, third party ideas on how to achieve additional energy savings through efficiency opportunities. Examples of such initiatives include:

- Provincial C4 Initiative: This initiative involved working with four communities on a provincial government sponsored C4 initiative. The objective of this particular initiative was to reduce greenhouse gas emissions in the four communities of Winkler, Thompson, Brandon and Peguis First Nation. Manitoba Hydro supported all four community initiatives by sharing information on potential energy efficiency opportunities and offering resources to assess and pursue those opportunities.
- Climate Change Connection: Manitoba Hydro supports the provincial Climate Change Connection, which is managed through the Eco-Network. The objective of this organization is to educate and inform Manitobans about climate change issues and encourage Manitobans to take action. The Corporation expects these efforts will lead to more Manitobans participating in energy efficient opportunities. Manitoba Hydro is represented on the Climate Change Connection's steering committee.
- Power Smart WISE Program: Manitoba Hydro partners with the Manitoba Society of Seniors to administer and offer the Power Smart WISE program to Manitoba seniors.
- Manitoba Hydro delivers a portion of its lower income program through two community based groups: BUILD and Brandon's BEEP.
- Manitoba Community Led Emission Reduction (CLER) Program: Manitoba Hydro is working with communities participating in the CLER Program which is a Provincial pilot initiative to reduce greenhouse gas emissions within the Province. Support has been provided through working with community

- Manitoba Hydro is utilizing a third party to deliver its single family component of its Energy & Water Saver Program. This option was considered more effective and economic relative to running the program internally. Concurrently with this effort, Manitoba Hydro is using its commercial sales force to reach the landlords in the multifamily sector for the same energy efficient opportunities. In this case, a hybrid approach was judged to be the most efficient and effective. Manitoba Hydro intends to use a similar model in delivering its planned fridge buy back program planned for early 2011.

Manitoba Hydro does not agree that establishing “third party set asides” is the most effective and efficient strategy for achieving the Corporation’s energy efficient objectives as this may lead to implementing some programs in a more costly manner simply to spend set aside funds as opposed to undertaking an initiative in a more cost effective manner. Manitoba Hydro intends to continue exploring opportunities to pursue energy efficient opportunities through third parties and intends to use third parties whenever this option is assessed to be the most efficient and effective.

**5. Recommendation:** *Establish aggressive savings targets: Manitoba Hydro should adopt aggressive savings targets (e.g. 1-2%/yr), in line with those of leading regions, if possible with extensive stakeholder input.*

**Action Plan:** Manitoba Hydro notes that regardless of this specific recommendation, the Dunsky report cautions against using metrics to compare energy efficiency efforts among regions due to contextual differences such as rates, industrial loads, use of electric space heat, weather, and deemed savings practices. Manitoba Hydro strongly agreed with Dunsky’s cautionary statement as the Corporation is aware and understands the impacts of these regional differences. As such, the Corporation uses metric comparisons with extreme caution, especially those metrics based on relative percentages of load. These latter metrics are especially distorting and potentially misleading due to Manitoba Hydro’s substantial industrial load, significant use of electricity for space and water heating and Manitoba’s extreme cold weather.

Manitoba Hydro agrees with establishing aggressive energy conservation targets, however the Corporation believes that it is more appropriate to base the targets on identifiable and realizable economic potential for achieving energy savings rather than basing targets on arbitrary percentages. Except for some regions, it is common industry practice to establish targets based on a bottom-up approach and supported by detailed market potential studies of energy efficient opportunities within the respective region.

Manitoba Hydro’s reluctance to use arbitrarily set targets is due to the Corporation’s integrated resource planning process and the potential consequences of not meeting unattainable and unrealistic energy efficiency targets. The Corporation makes significant

long lead time capital investment decisions based on an integrated resource process, which includes a forecast of what energy savings will be realized through its Power Smart investments.

Manitoba Hydro notes that regardless of the method used in establishing its energy conservation efforts, the Corporation's efforts in the area of energy efficiency programs is among the leaders within North America.

To continue being a leader in pursuing energy efficient opportunities, Manitoba Hydro's plans included hiring Dunsky Energy Consulting to review our current efforts and for the Corporation to take steps based on recommendations made through the review. Manitoba Hydro's future plans include:

- Undertake a market potential study to identify current energy savings potential remaining in Manitoba.
- Undertake a detailed comparison of Manitoba Hydro's Power Smart Plan to BC Hydro's Power Smart Plan to assess for potential gaps in targeted energy savings.
- Continue to monitor leading edge utilities and programs.

**6. Recommendation:** *Screen programs by either Manitoba Hydro's (PACT test) or society's (TRC or SCT tests) perspectives: As discussed, the Rate Impact Measure test is likely leading to lost opportunities. We urge Manitoba Hydro to reconsider its screening process as a whole to ensure it is in line with common and leading practice.*

**Action Plan:** Manitoba Hydro uses a number of cost effective tests to assess energy efficiency opportunities, including whether to pursue an opportunity, how aggressively to pursue an opportunity, the effectiveness of program design options and the relative investment between ratepayers (via utility incentives and other costs) and participants. In addition to quantitative assessments, Manitoba Hydro also considers various qualitative factors, including equity (i.e. reasonable participation by various ratepayer sectors such as lower income) and overall contribution toward having a balanced energy conservation strategy and plan.

Manitoba Hydro prefers using the Levelized Utility Cost as opposed to the PACT since the Levelized Utility Cost provides a specific cost on a per unit of energy basis however all tests should be used in aggregate in determining which opportunities to pursue and which program design is best suited to meeting the Corporation's energy conservation efforts.. With respect to using the TRC (Total Resource Cost) or SCT (Societal Cost Test), Manitoba Hydro uses a more inclusive version of the TRC which includes the value of emission reduction impacts.

Manitoba Hydro does not agree that the use of the RIM test is restricting its ability to pursue energy efficient opportunities. Evidence of this is apparent as the Corporation has a number of programs which do not pass the RIM test. Manitoba Hydro intends to

continue using a broad range of quantitative assessments of energy efficient opportunities including using the following cost effective tests:

- Marginal Resource Cost (MRC) test;
- Total Resource Cost (TRC) test;
- Rate Impact Cost (RIM) test;
- Levelized Utility Cost (LUC);
- Simple Customer Payback calculation; and
- Participating Customer (PC) test.

**7. Recommendation:** *Screen alternative program designs on whole-program cost-effectiveness: As discussed, the ‘Option 3’ incremental approach to considering more aggressive program designs likely leads to missed opportunities. We suggest that all program designs considered should be screened for total program cost effectiveness. Again, we urge Manitoba Hydro to reconsider its screening process as a whole to ensure it is in line with common and leading practice.*

**Action Plan:** Manitoba Hydro performed an “Option 3” incremental analysis on program designs for the first time as part of the 2006 Power Smart Plan. The objective of the incremental option was to ensure that existing program designs were as aggressive as possible, while remaining cost-effective. Program staff were directed to develop an aggressive program plan and then push the design to its limits to achieve incremental savings. The incremental costs and benefits were then analyzed to determine the cost-effectiveness of achieving the additional savings. This incremental analysis was also included in the creation of the 2007 and 2008 Power Smart Plans. Although in theory the incremental analysis will determine the cost-effectiveness of achieving additional savings, Manitoba Hydro recognizes that the analysis, in practice, was not achieving the desired results. As a result, the incremental analysis is no longer included in the program planning process.

**8. Recommendation:** *Consider an expert-supported stakeholder advisory group: An adequately funded stakeholder review of energy efficiency plans can lead to better designs and programs, especially where stakeholders are supported by independent experts and the process is non-adversarial in nature. This model needs to be carefully considered and designed to avoid some key pitfalls, however, especially as they relate to potential for micromanagement and for undue influence given to individual intuition and ideology.*

**Action Plan:** Based on past experience, Manitoba Hydro has concluded that the best approach for designing effective, timely, and leading edge programs in a cost effective manner is achieved through a combination of the following efforts:

- Hiring skilled marketing staff who are capable of researching and understanding the environment and market characteristics associated with an energy efficient opportunity;



- Reviewing program designs and concepts with peer organizations, some of which hire third party consultants, and seeking input from leading edge organizations;
- Consulting with industry stakeholders who understand the market and the factors that influence customer decisions. The appropriate industry stakeholders vary by program and taking this customized approach to seeking industry stakeholder input has proved to be very effective and efficient;
- Maintaining relationships and open communication with key customer groups, such as school divisions and multi-family property agents, to identify both emerging barriers and program design strategies to effectively achieve energy savings;
- Annually reviewing and adjusting program designs based on experience, customer take up, and new information.
- Seeking input from key industry provincial stakeholders on high level issues or specific issues as deemed appropriate. These key industry stakeholders include the Provincial Government, TREE/RCM, CAC and MSOS. Input from the latter three groups is obtained either informally or through the extensive regulatory process.
- Complementing these efforts by hiring an expert third party consultant to review Manitoba Hydro's overall efforts (e.g. the Dunsky review).

In the past, Manitoba Hydro has held broad stakeholder meetings to discuss the utility's Power Smart plans. Although seeking input on strategy and policy and sharing conceptual information provided some value, the process proved to be ineffective for detailed program designs which involve specific marketing concepts, product delivery channels, and undertaking complicated computer assessments to provide program metrics (e.g. TRC, LUC, etc.). Experience demonstrated that the number of interested stakeholders was limited and that much time was required to explain the overall concepts and underlying drivers and rationale supporting the investment. As Dunsky's recommendation cautioned, most often, suggested program concepts from stakeholders are based on intuition and ideology, while actual energy savings potential, cost effectiveness and measurement of energy savings are not considered.

Manitoba Hydro appreciates stakeholders' desire to have consultants paid for by ratepayer funds to support their input however incorporating this practice on an ongoing basis and from a business operational perspective, would be a very costly approach. In essence, the practice which would involve duplication of resources to undertake business operational activities (i.e. Manitoba Hydro hires staff who are experts in the field of designing energy efficient programs and supplements this effort with hiring consultants when appropriate. Hiring consultant to support stakeholder's review of the Corporation's detailed operational work on an ongoing basis would essentially be hiring duplicate resources to accomplish the same undertaking). Manitoba Hydro notes that the regulatory process allows for a reasonable amount of oversight through the hiring of consultants to review Manitoba Hydro's energy conservation efforts and the extensiveness of this investment is also controlled through the regulatory process.

Manitoba Hydro recognizes that consultations with stakeholders offers value however this value must be balanced against the pitfalls associated with such consultations as indicated by Dunsky Consultants. Manitoba Hydro intends to continue to consult with interested stakeholders utilizing a customized approach for individual programs and a broad approach for specific issues. Manitoba Hydro intends to accommodate all reasonable stakeholder requests to provide input on its energy conservation efforts on an ongoing basis.

*9. Recommendation: Consider independent evaluations for some programs: Independent evaluations can be expensive, but ensure an unbiased review of program accomplishments, increase the credibility of utility claims, and provide insight into program operations. Manitoba Hydro should consider periodically hiring independent evaluators to conduct impact and process evaluations for a portion of its programs, selected using criteria similar to California's (program's relative importance to portfolio; market or program design changes; uncertainty or risk around savings and net to gross estimates).*

**Action Plan:** Manitoba Hydro has been discussing the pros and cons associated with hiring an independent evaluator to conduct program evaluations on a select number of programs. To assess the merits of hiring a third party evaluator, Manitoba Hydro intends to hire a third party to conduct an evaluation on one of its Power Smart programs during the upcoming year.

### **Residential Retrofit Programming**

*1. Recommendation: Integrate programs further: The current four programs are targeting similar markets and overlap on many measures. Although MH has made it relatively simple to apply to each program, multiple application forms and separate marketing likely create barriers and missed opportunities. Ideally, customers applying for an ecoENERGY audit should be automatically contacted or enrolled in HIP and the Power Smart loan program, and auditors should assist in enrolment on the spot. All HIP and PS loan program applicants should similarly be automatically contacted re the ecoENERGY program.*

**Action Plan:** Manitoba Hydro recognizes the value in taking both a product targeted approach and an integrated approach in its efforts to achieve energy efficiency savings. Both approaches are therefore currently used. For example, the ecoENERGY evaluators are familiar with and promote all applicable Power Smart Programs when home audits are undertaken. Through this process, homeowners are advised of all opportunities. Experience has shown that many customers participating in the ecoENERGY program also participate in more than one Power Smart program.

Another example of taking a “total solutions” approach was demonstrated through the Fall 2009 province-wide campaign that promoted all opportunities available to

customers. These opportunities went beyond single programs offered by Manitoba Hydro and included information on all Power Smart programs, federal government grants, Home Renovation Tax Credit (HRTC) and provincial tax credits. Further, an annual Power Smart Directory was developed to facilitate educating and informing customers about all available residential programs.

Manitoba Hydro intends to continue to promote energy efficient opportunities using both a product targeted and "total solutions" strategy.

- 2. Recommendation:** *Consider direct installation of cost-effective measures: Simply 'getting through the door' of a participant requires substantial program effort. Once an auditor is already in the home, it becomes cost-effective to install many measures even with a 75%-100% subsidy. One approach to take advantage of this would be to have ecoENERGY auditors and participating HIP and furnace contractors install CFLs, light domestic hot water measures and possibly air sealing as standard practice, free of charge or for a small fee.*

**Action Plan:** Manitoba Hydro had discussed this opportunity prior to the Dunsky review, and staff have been assessing options for pursuing the low cost opportunities. The concept is being utilized in the Water and Energy Saver Program, the Lower Income Program and the WISE program. With all initiatives, it is ultimately the customer's choice in terms of which energy efficient opportunities will be implemented.

- 3. Recommendation:** *Harness the sales power of contractors: Insulation contractors, HVAC contractors and energy auditors already promote MH programs directly relevant to them, and ecoENERGY auditors receive an incentive for referring customers to the HIP program. At a minimum, however, MH could provide referral incentives for insulation and HVAC contractors for successful referrals to all four programs. At the other end of the spectrum, MH could adopt the auditor-contractor turnkey model used in NYSERDA and Massachusetts.*

**Action Plan:** The auditor-contractor turnkey model is not a viable option under the Code of Ethics guidelines outlined in the ecoENERGY license agreement. The intent of the guidelines is to restrict auditors from directly promoting any interest they may have as a contractor/installer. The guidelines restrict auditors from providing literature unrelated to the evaluation. They also serve to ensure auditors recommend that the customer obtain multiple bids before selecting a contractor for the renovations identified in their ecoENERGY audit report. Incentives for contractors that refer customers to Power Smart Programs have been incorporated into the design process for all new residential programs.

- 4. Recommendation:** *Improve contractor skills: As mentioned, it is likely that Manitoba faces the same issues with insulation, air sealing and HVAC sizing skills faced by the*

*rest of North America. At a minimum, MH should investigate and consider options (training, increased quality control, certification) for addressing this problem.*

**Action Plan:** Manitoba Hydro agrees that contractor skills are important and as such, the Corporation's Power Smart Program designs have pursued training, quality control and certification options to address any gaps whenever appropriate. For example, contractor training is offered and provided for all applicable Power Smart programs, including the Earth Power, Solar Hot Water and R2000 initiatives.

Contractor certification is also pursued and supported where appropriate. For example, Manitoba Hydro is supportive of the certification program put in place for geothermal installers by the Canadian Geothermal Exchange.

Ongoing efforts are also in place with contractor associations such as HRAI, to optimize efficiencies in heating system and duct sizing.

Manitoba Hydro intends to continue to provide or support training and certification program to address skill gaps within industry for all advocated efficiency programs, when appropriate.

5. **Recommendation:** *Provide generous incentives for comprehensive air sealing: Comprehensive air sealing in attics and basements will typically cost ~\$2 000 per home. Current ecoENERGY incentives of \$150-\$300 are unlikely to incent unplanned, comprehensive work, especially because this measure is unpopular among homeowners because of a lack of tangible, immediate benefits. Higher incentives are needed to increase uptake, either as part of the HIP program or as part of a new turnkey program.*

**Action Plan:** Preliminary analysis has determined that pursuing the potential savings through air sealing are not economic due to the high labour costs. As such, Manitoba Hydro does not intend to offer a broad program to support this opportunity as recommended by Dunsky Consultants.

6. **Recommendation:** *Address the "finding contractors" barrier, by one of two means:*
- i) Using the auditor-contractor turnkey installation model: This model has many advantages over the more traditional audit-and-incentives model, especially when all of the design elements used by NYSERDA are in place. For homeowners, it eliminates one of the biggest market barriers still in place: the difficulty of finding trustworthy, competent contractors. On the contractor side, it supports the development of a new market by reducing barriers to contractor investment. Auditor-contractors also have a strong incentive to market the program.*
  - ii) Providing neutral support in evaluating contractor bids: Phone-based technical support in reviewing and comparing bids, combined with Manitoba's*

*Hydro list of approved contractors, could reduce participant transaction costs and increase their comfort level with the program.*

**Action Plan:** Manitoba Hydro offers the home audit service as part of a service contract with Natural Resources Canada. Under the terms and conditions of this contact, an auditor-contractor turnkey model is not permitted.

Evaluating customer bids on an individual customer basis is not economically feasible and further, providing this service would expose the Corporation to potentially significant liability issues. In most cases, an expensive site visit would be necessary in order to ensure that all factors have been taken into account prior to selecting a quote. Industry is very sensitive to Manitoba Hydro's role in the market place and has expressed its concern over any efforts by the Corporation to interfere with a competitive marketplace. Given that the success of Manitoba Hydro's Power Smart initiative is dependent on industry working cooperatively with the Corporation, Manitoba Hydro needs to exercise caution in managing this relationship to ensure the continued success of its energy efficiency program.

### **Residential New Construction**

*1. Recommendation: Provide incentives to builders rather than homeowners: This addresses the biggest barrier for new construction, split incentives between builders and owners. It is a key feature of all three case studies, which have two to five times the market share of the Power Smart program.*

**Action Plan:** Manitoba Hydro is currently reviewing design modifications to its New Home program and builder incentives will be assessed along with other options.

*2. Recommendation: Consider "a la carte" incentives: Additional incentives for optional measures can push builders to go further in achieving savings.*

**Action Plan:** Manitoba Hydro is currently reviewing design modifications to its New Home program, wherein a la carte incentives will be assessed along with other options.

*3. Recommendation: Require improved insulation inspection: The thermal bypass checklist developed by Energy Star could be easily adapted for the Manitoba market, and is seen by all program managers as the only way to ensure quality control on wall insulation and air sealing.*

**Action Plan:** Builders have stated that one of the barriers to their willingness to participate in the Power Smart New Home Program is the requirement for air tightness testing. Since builders expect one-hour turnaround when requesting testing, increasing the number of inspections will further discourage the builders from participating. Inspection prior to wall close-out is currently available to builders under the existing program design, with virtually no uptake by builders. It is important to note that with the

longstanding promotion of and training for, the Power Smart New Home and R-2000 programs in Manitoba, standard building practice has evolved so that new homes in Manitoba are achieving very tight construction with the lowest average air change rates in Canada.

The cost and benefits of adding an additional visit to each home will need to be taken into consideration when assessing this option. Manitoba Hydro intends to review the use of the thermal bypass checklist to determine if the process, or parts of the process, can be incorporated into the redesign of the New Home Program.

**4. Recommendation:** *Evaluate the need for contractor training: It is likely that Manitoba faces the same issues with insulation, air sealing and HVAC sizing skills faced by the rest of North America. Standard design and construction practices may also offer substantial opportunity for improvement via training. All other programs offer regular and free training sessions for builders and contractors. While Manitoba Hydro offers some training, it is unclear if this is sufficient to transform the building market. At a minimum, MH should evaluate the need for advanced design and installation training for the building community.*

**Action Plan:** As indicated in the Dunsky report, Manitoba Hydro does offer training to the new home construction industry. As part of the redesign process, Manitoba Hydro will assess whether there is a need for additional training to be offered in the new home construction market.

### **Low Income Retrofit**

**1. Recommendation:** *Obtain funding for non-gas/electric heating systems: A missing measure for Manitoban low income households is the repair or replacement of oil, propane, and wood heating systems in areas not served by gas. This measure is outside of Manitoba Hydro's electricity and gas efficiency mandate, but could be offered by the LIEEP program, with funding via the provincial government.*

**Action Plan:** This initiative was being discussed during the Dunsky review and was subsequently put in place in Spring of 2009.

**2. Recommendation:** *Consider new measures: Several commonly cost-effective measures are worth exploring for inclusion in Manitoba's program:*

- *GFX installation*
- *Lighting fixtures*
- *refrigerator and freezer replacement*

### **Action Plan:**

- a) GFX is under review and will be considered if adopted in the Corporation's comprehensive Power Smart Programming.

- b) A review was done of the existing mass market Energy Star light fixture program and it was determined to be too costly for the Lower Income Sector due to the code requirement for an electrician to install the fixtures.
- c) Offering a broad refrigeration program has received internal approvals and will be launched in early 2011. Adoption of this program within the Corporation's Lower Income program is being reviewed.

3. **Recommendation:** *Consider increasing participation targets to remain among leading programs, which are aiming for 4-8%/year and in some cases beyond.*

**Response:** Current targets are 3.2%/yr. for the duration of program.

### **Lighting and Appliances**

1. **Recommendation:** *Collect additional data on appliance market share: If feasible, collecting data on market share would allow Manitoba Hydro to track the market transformation impacts of its programs and benchmark its performance against other programs.*

**Action Plan:** Manitoba Hydro agrees that appliance market share data is required to determine success of existing programs and that this information would be valuable in identifying energy saving opportunities for future programs. In the past, appliance manufacturers have been unable and/or unwilling to provide Manitoba Hydro with data on equipment supplied to retailers. Manitoba Hydro has been communicating with the Canadian Appliance Manufacturers Association (CAMA) and the Corporation is hopeful that more cooperation will be experienced in the future with the CAMA, so that this data might be obtained. Manitoba Hydro intends to continue collecting data on existing appliances which are in the marketplace and intends to pursue options for collecting data on new appliances entering the market through retail channels.

2. **Recommendation:** *Investigate appliance opportunities: Manitoba Hydro should analyze the energy savings potential of efficient dehumidifiers and consider strategies to promote appliances meeting CEE SEHA specifications.*

**Action Plan:** Manitoba Hydro reviews all energy efficient technologies on an ongoing basis and pursues all economic opportunities. Manitoba Hydro has assessed opportunities with dehumidifiers and the Corporation has concluded that this product does not provide a viable economic opportunity. Operation of dehumidifiers in Manitoba occurs mainly during the winter season due to the tight building envelopes and undesired moisture trapped within homes. A non-Energy Star dehumidifier model, on average, would consume 10 KW.h per day and an Energy Star model will consume 8.6 KW.h per day. Total energy savings over a 24-hour period of operation is 1.4 KW.h. With the assumption that a residence may operate the dehumidifier for 100 days a year, total potential energy savings for purchasing an Energy Star model without interactive effects, is 140 KW.h per year or \$8.82 (energy rate of \$0.063 KW.h.). Accounting for interactive effects, the total energy savings in an electrically heated home would be zero,

because all inefficiencies of a non Energy Star unit would contribute to heating the home. If the customer has a natural gas heated home, and assuming an efficiency of 80% on the gas heating system, the potential annual bill savings would be \$3.07 per year. Looking beyond this economic assessment, a review of the stock carried by the major retailers (i.e. Canadian Tire, Rona and Home Depot) in Manitoba indicates that local market has effectively converted to an efficient standard, as these retailers only stocked Energy Star dehumidifiers.

Manitoba Hydro will continue to assess all opportunities with energy efficient technologies on an ongoing basis and pursue identified economic opportunities. Concurrent with other leading edge utilities, opportunities are being investigated in the areas of televisions and set top boxes, and preliminary research is being conducted regarding other home electronics.

**3. Recommendation:** *Consider upstream incentives: Manitoba Hydro should consider negotiated cooperative promotions, stocking incentives, market share incentives, sales commissions and advertising co-operative incentives as additional strategies to target the lighting and appliances markets.*

**Action Plan:** Manitoba Hydro evaluates upstream incentives, cooperative advertising and other promotional opportunities as part of the program design process. The Corporation incorporates such strategies into program designs where appropriate. For example, the Residential Appliance Program offered a monthly sales prize draw to retail sales staff to encourage the promotion of Energy Star appliances to the customer. Manitoba Hydro intends to continue assessing using upstream incentives with all of the Corporation's Power Smart programs. Currently, Manitoba Hydro, as part of the national Strategic Lighting Initiatives Committee (SLIC), is investigating offering shelf space incentives at a national level. The SLIC is a national effort with membership from utilities across Canada and is chaired by National Resources Canada.

## **Geothermal**

**1. Recommendation:** *Explore the loop tariff model: The loop tariff model is a powerful tool for bringing geothermal energy into the mainstream. In particular, DMEA's (Delta Montrose Electric Association) recent experience suggests that its new model can overcome barriers that even generous customer rebates and financing leave in place, principally consumer reluctance to take on debt and the split incentives between home builders and home buyers.*

**Action Plan:** Manitoba Hydro has extensively explored the loop and system tariff model for geothermal heat pumps and concurs that utility owned infrastructure could result in additional installations. However, this model has some drawbacks relative to the financing option offered by Manitoba Hydro. Specifically, the financing option offers



lower monthly payments for the customer due to the overhead and administration costs associated with offering a leasing program.

Since Manitoba Hydro assessed the loop leasing option, the Canadian GeoExchange Coalition has introduced a process through which systems are certified and contractors are accredited. This new development could impact the costs of offering a loop lease. Manitoba Hydro will reassess the loop option to evaluate the viability of offering a loop lease.

- 2. Recommendation:** *Consider builder incentives: If Manitoba Hydro maintains its current approach rather than the loop tariff model, it should consider incentives for on-spec builders to reduce split incentives.*

**Action Plan:** Based on Manitoba Hydro's experience, it is doubtful that builder incentives would result in lower prices and/or installation of additional geothermal systems in Manitoba. The demand for geothermal systems has driven prices up for these systems over the years, and any incentives offered to builders would most likely benefit only the builders through increased profit, rather than resulting in an increased number of geothermal systems.

### **Commercial Kitchen Prescriptive Program**

- 1. Recommendation:** *Coordination: There are opportunities to integrate program features, measures and services to create a more comprehensive approach to addressing the efficiency needs of customers. Housing the current group of Manitoba Hydro programs in one over-arching program would streamline the application process. Combining that approach with an auditing service would allow a wide variety of efficiency solutions to be proposed and installed which could be tailored to individual customer needs.*

**Action Plan:** Efficiency opportunities found in commercial kitchens are currently captured through customers' participation in the Commercial Kitchen Appliance Program and Commercial Refrigeration Program. Application forms and marketing materials have been deliberately designed as individual modular pieces in order to facilitate the creation of customized program kits for customers, since materials can be easily added or removed to better reflect the inventory of equipment found in specific customer sites. For example, in the vast majority of grocery and convenience stores, refrigeration would be the only technology found in their inventory.

Manitoba Hydro Programs have also been segmented by trade (appliances, spray valves, and refrigeration), in order to make them more conducive to being delivered to customers directly by industry. The majority of retailers and contractors are dedicated to only one of the aforementioned trades, therefore application forms and marketing materials have been designed as individual pieces in order to be more favorably received by these industry partners. Past experience has also shown that it is rare for customers to pursue

renovations and upgrades to these areas at the same time, thus negating the risk of duplicate applications. It is also typical practice for retailers and contractors to complete application forms on behalf of a customer to better facilitate the sale.

With regard to offering an auditing service to help identify a wider scope of opportunities, all Power Smart for Business programs are supported by a sales team with a representative specifically assigned to provide field-level customer and industry support. The sales representative actively solicits all Power Smart opportunities to engage this sector through site walk-throughs to identify energy saving opportunities. Field staff from the Power Smart Shops Program also actively solicit site visit opportunities, since they are assigned to the very smallest commercial customers. The Power Smart Shops Program had not been announced at the time the Dunsky team was reviewing the Power Smart portfolio.

**2. Recommendation:** *Outreach and Education: Because the industries that benefit from these particular programs are ones in which energy costs makes up a small portion of overall operating expenses, but equipment makes up a very large portion, it is difficult to prioritize efficiency above other investments. With the correct approach to explaining the benefits of efficiency to a business' bottom line, combined with several turnkey solutions to efficiency opportunities, it is possible to convince business owners dealing with even the slimmest of profit margins of the benefits of investing in efficiency.*

**Action Plan:** Manitoba Hydro has a number of outreach initiatives that it offers to this customer group and its supporting industry. Current offerings include both face-to-face presentations, program training sessions, as well as specific technology and program information sheets that are discussed one-on-one with customers and industry. Since the time of the Dunsky review, development of a comprehensive energy efficiency guide for restaurants has been completed. The guide provides low-cost/no-cost energy saving tips, customer success story profiles, and payback periods for applicable technologies. Although already discussed in the existing technology and program information sheets, the guide will reinforce the significant non-energy benefits of efficiency upgrades, including: more uniform cooking through fewer temperature variations, extended food holding times, higher food production rates, quicker heat recovery for equipment, and reduced water consumption. The Power Smart Sales representative for this sector also reinforces all energy and non-energy benefits of retrofits with customers on a regular basis.

Manitoba Hydro regularly disseminates of the energy efficiency guide for restaurants to sector stakeholders, which is also available online at the Manitoba Hydro website.

**3. Recommendation:** *Expanding the list of measures: Including a greater number of measures (such as ovens, ice machines and ventilation) would increase the opportunities for Manitoba Hydro's customers to realize additional savings.*

**Response:** Manitoba Hydro regularly reviews and screens opportunities to advocate additional technologies through existing or additional cost-effective programs. Although the current suite of programs is very comprehensive, program staff continues to conduct re-evaluations since variables such as product availability, product cost and energy savings potential change over time.

Ice machines were researched in 2006, and although the technology passed the various economic tests, design of the program was halted as federal regulations were proposed and implemented which increased the minimum performance standard to the level for which the program was intended to be promoted. A number of measures, including griddles, convection ovens, combi-ovens, and holding cabinets were also initially researched when developing the program in 2007, but these opportunities were not found to be economic investments for the customers at that time. Technologies which did not pass the economic tests in 2007, are being re-evaluated to assess both the current state of these technologies, and the supporting market. New technologies also currently being reviewed for this sector include hood fans and commercial dishwashers.

### **Commercial Lighting**

**1. Recommendation:** *Provide incentives for lighting design.*

**Action Plan :** Since Manitoba Hydro recognizes the value in having incentives provided for design, feasibility studies for lighting design projects are currently eligible for incentives through the Commercial Custom Program. The Program pays an incentive of 50 per cent of the first \$5,000 and up to 25 per cent of the remaining portion, to a maximum incentive of \$10,000 per study.

Manitoba Hydro intends to investigate the potential and impact of integrating the feasibility incentive structure directly into the Commercial Lighting Program, including lighting focused marketing materials, which would increase customer awareness of incentives offered.

**2. Recommendation:** *Increase the level of account management by seeking out small and medium sized customers, rather than have these customers approach Manitoba Hydro.*

**Response:** Manitoba Hydro recognizes and appreciates the challenges in motivating smaller commercial customers to implement energy efficiency measures in their businesses. To address this barrier, Manitoba Hydro created a Power Smart sales team to target and assists this customer sector in pursuing energy efficiency opportunities. In addition, Manitoba Hydro designed and launched a Power Smart Shops Program, specifically to address some of the barriers confronting the small business sector. The Power Smart Shops Program had not been announced at the time of the Dunsky review.

Motivation to have these customers contact Manitoba Hydro account representatives could be increased through creating a communication vehicle to heighten awareness of

the benefits of energy efficiency measures available to these customers. For example, customers could compare their energy use to others in their market sector through the introduction of an energy consumption comparator. The comparator would serve to promote self-identification of outliers, while highlighting efficiency opportunities suitable to their particular need. The comparator could be made available on the Manitoba Hydro website, at trade shows and other business venues.

Manitoba Hydro intends to investigate communication opportunities targeted to small and medium sized customers to help them recognize energy efficiency opportunities and seek out the assistance of Manitoba Hydro Account Representatives.

**3. Recommendation:** *Increase renovation incentives.*

**Action Plan:** As part of Manitoba Hydro's Power Smart strategy, lighting incentive levels are reviewed on an ongoing basis and adjusted when deemed appropriate. The current incentives have been effective at achieving both retrofit and early replacement opportunities among commercial customers.

**4. Recommendation:** *Engage outside engineers and architects to identify viable projects.*

**Action Plan:** Manitoba Hydro's Commercial Lighting Program is well known and well utilized by Manitoba's design industry. Based on the high level of participation of Manitoba professionals, Manitoba Hydro does not believe a gap exists in this area.

**5. Recommendation:** *Provide turnkey advice and installation (project scoping, documentation and project oversight by 3rd party contractor).*

**Action Plan:** Third party project implementation currently exists in Manitoba through a number of energy service companies and, based on industry activity, there does not appear to be a gap existing within this area.

**6. Recommendation:** *Improve support and information on incentives for controls.*

**Action Plan:** Manitoba Hydro is currently creating marketing material to address this area. Manitoba Hydro intends to create informational material, including a Power Smart Profile, which communicates the benefits of lighting controls.

**7. Recommendation:** *Educate lighting professionals.*

**Action Plan:** Manitoba Hydro agrees that it is important to have educated lighting professionals working within Manitoba's industry. As such, training has been and will continue to be provided on a regular basis.

**8. Recommendation:** *Calculate custom incentives based on the condition of the existing lighting system, not a "properly operating" system.*

**Action Plan:** Manitoba Hydro has considered this approach; however, the design option is not cost effective due mainly to the high cost associated with deploying staff to each site for verifying the current state and energy efficiency of the existing system.

**9. Recommendation:** *Measures: Significant opportunities may result by extending or increasing incentives for control technologies and lighting design. Most exemplary programs focus resources equally on lighting design, lighting hardware (fixtures and ballasts) and control technologies. There are significant savings to be gained from installation of lighting controls and efficient lighting design, especially designs that amplify reliance on natural lighting and task lighting. Further, customers can exercise a greater level of control over their lighting system when it is designed and controlled properly, which leads to greater customer satisfaction.*

**Action Plan:** To encourage the implementation of lighting control technologies in Manitoba, the Commercial Lighting Program offers custom calculated incentives of \$1,000/KW saved and \$0.20/kW.h saved. It is not evident that the monetary level of the incentive is precluding participation since recent applications have demonstrated that the incentive has paid near to, or in some cases, 100% of customers' product costs. Manitoba Hydro has two engineers dedicated to the Commercial Lighting Program, who at no charge, complete customers' custom calculated incentive requests. This removes the uncertainty of the incentive amount prior to system installation.

The Commercial Lighting Program's dedicated engineers also serve to promote superior and more efficient lighting design through no-charge technical guidance and assistance with customers' lighting design. The Commercial Lighting Program also encourages customers to take advantage of the free design services offered through local lighting distributors. In cases where a customer prefers to use an independent design consultant, the Custom program provides an incentive for a feasibility study of 50 per cent of the first \$5,000 and up to 25 per cent of the remaining portion, to a maximum incentive of \$10,000 per study. Increasing the level of promotion to customers and industry with respect to the availability of both the custom calculated incentives and feasibility study incentives could be of benefit.

Manitoba Hydro intends to increase the level of promotion to customers and industry with respect to the availability of both the custom calculated incentives and feasibility study incentives.

**10. Recommendation:** *Customer Services: For any custom commercial lighting project, Manitoba Hydro requires an energy audit to enroll in the commercial lighting program, but the customer must pay the full cost of the audit, before there is any indication of incentive amounts, or even whether or not the proposed project will qualify for enrolment*

*at all. While some custom projects are large projects for which the cost of an audit is negligible, there are also small custom projects for which the added up-front cost could be a significant barrier to overcome.*

**Action Plan:** It is extremely rare that customers are required to spend any money to quantify the incentive amount available through the Commercial Lighting program. Manitoba Hydro has two engineers dedicated to the program, who at no charge, complete customers' custom calculated incentive requests. This removes the uncertainty of the incentive amount prior to the customer installing the system.

**II. Recommendation:** *Upstream Approach: The programs examined in the case studies section all report significantly lower costs per MW.h saved than does the Manitoba Hydro commercial lighting program. One major reason for this is the upstream approach that the case study programs have adopted. They have all elected to actively engage wholesalers, vendors and contractors to participate in the program. Incentives are offered not only for installing efficient technologies but also for stocking them on shelves and promoting them to customers.*

**Action Plan:** Manitoba Hydro recognizes the value of upstream incentives and the need to encourage and incent retailers to provide energy efficient products. Manitoba Hydro therefore evaluates the applicability of upstream incentives as part of the design process for all programs and, if considered the optimal approach for the market, upstream incentives may be included as part of the program strategy.

The Commercial Lighting Program, however, is extremely well known and well utilized by Manitoba's design industry. The program design strategy has been revisited numerous times since inception with many technologies moving off the promotion listings as industry feedback demonstrates that the market has transformed. Based on the high level of participation by the Manitoba lighting industry, Manitoba Hydro does not believe upstream incentives would increase participation in this program. Wholesalers, vendors and contractors are actively engaged in the program which they demonstrate by consistently stocking and promoting all eligible products.

### **Commercial Custom**

**I. Recommendation:** *Increased Account Management: As stated previously, removing market barriers requires active account management. Often times, undertaking custom projects means that production facilities need to be taken off line, or scaled back. At a minimum, retrofit projects cause disruptions, and create hassles. Account executives must be able to manage complications involved in project design and project management so that the business/facility owner can concentrate on their day-to-day operations. Coordination of prescriptive measures with custom projects by a single point of contact removes many of the hassles for end users and keeps efficiency projects on track toward completion. In addition, many customers need to be convinced that retrofitting systems*

*that are working but inefficient makes economic sense. This also requires outreach by dedicated account managers.*

**Action Plan:** While Account Management is a very effective approach to dealing with the needs of large customers, this work can be very time consuming. Account managers can not work effectively with large numbers of accounts without becoming overwhelmed by the workload. As a result, they may not provide the specific attention to the accounts that is required or expected by the customers on basic services related to energy rates and billing issues, service upgrades and extensions, equipment maintenance and ancillary services, and energy efficiency improvements. The 350 largest customers in Manitoba that have access to an Account Management representative account for 85% of the total general service commercial and industrial energy consumption, while representing approximately 2% of the total number of customers. Accordingly, market outreach efforts concentrating on this segment generate significant energy savings impacts cost effectively, utilizing traditional Account Management techniques. While the remaining 18,000 general service customers receive individual outreach attention, including technical support on request, aggressive outreach activity in this customer segment would occur only at significant cost, without accompanying significant incremental savings.

For a nominal fee, Manitoba Hydro provides larger customers with access to an on-line energy profiling tool called EnerTrend. This product captures and presents historical energy use data, and can be used as a self-service tool by customers to identify opportunities for energy efficiency improvements. Manitoba Hydro also offers customers who have subscribed to the EnerTrend service an option for energy consultation, where their energy consumption is regularly monitored and anomalies and opportunities identified. Manitoba Hydro will consider offering this on-line energy profiling tool to smaller customers, by contracting a third party to regularly review the energy consumption data, and identify opportunities for pro-active contact by a Manitoba Hydro representative

Manitoba Hydro intends to review approaches utilized by other industry leaders to increase market participation with small to medium sized customers, and identify those which could be used or modified and cost effectively implemented in Manitoba. Manitoba Hydro also intends to explore the potential to expand self-service account management through the marketing of EnerTrend to all industrial and commercial customers, examine the use of third party involvement to review energy consumption data and identify opportunities for pro-active account management, and fast track the development and marketing of a “Real time” version of EnerTrend with device control capabilities.

**2. Recommendation:** *Differentiation – Consider distinguishing commercial prescriptive programs from custom programs. Drawing brighter lines between easy-to-reach savings and deeper savings per customer site requires a comprehensive set of tools including richer incentives to reduce market barriers to deeper savings in the commercial retrofit*

*market. For example, enrolling commercial customers in a prescriptive lighting program may, at best, reduce consumption by 10-15%, but if Manitoba Hydro can demonstrate positive cash flows from custom multisystem projects, energy consumption may be reduced by 25% or more. This level of energy savings would make the programs exemplary.*

**Action Plan:** Past experience has shown that it is rare that customers are financially able and willing to pursue renovations and upgrades to multiple areas of their operation at the same time. Furthermore, to economically upgrade many mechanical systems or a building's envelope for instance, the existing equipment must often be very near or at the end of its useful life. Even by offering incentives that are beyond cost-effectiveness limits for Manitoba Hydro, replacing equipment with a long remaining useful life results in lost capital asset value that makes the upgrade uneconomical from the customer's perspective. Manitoba Hydro's current programs effectively encourage customers to upgrade equipment when an economical conversion opportunity presents itself, and it is not believed that richer incentives or more robust analysis for the customer will make these conversion opportunities occur prior to near the end of the existing equipment's useful life.

**3. Recommendation:** *Education - Address the lack of information which causes many customers to view enrolment in utility programs as a hassle. Opportunities exist to provide more customer management combined with assessment and contractor recommendations to offer customers an understanding of what constitutes energy efficiency and how it is undertaken.*

**Action Plan:** As indicated previously, Manitoba Hydro's 350 largest customers who account for 85% of the total general service commercial and industrial energy consumption have access to an individual Account Management representative. In addition to providing service on request, Power Smart Sales and Power Smart Shops staff also actively solicit smaller, non-Major account customers. Manitoba Hydro does not see any need for further action on this item.

**4. Recommendation:** *Incentives – Removing uncertainties about incentives, especially for custom projects, is important for enrolling customers when cost-effectiveness is less obvious or more difficult to achieve.*

**Action Plan:** Feasibility studies are the only way to determine incentive amounts for custom projects, as they are used to determine current energy consumption, efficiency levels, and anticipated project savings for the customer. Once a feasibility study is approved by Manitoba Hydro, specific incentive amounts are offered and paid upon completion of the project. Incentives are paid in accordance with the implementation of the upgrades identified in the feasibility study, and are not reduced, even if achieved savings are less than anticipated, thus making the incentives quite certain.

### **Network Energy Manager**



*1. Recommendation: Provide online training sessions and technical training (post software install) for customers.*

**Action Plan:** The approved suppliers under the Network Energy Manager Program currently provide training sessions to customers.

*2. Recommendation: Provide free software to customers without an application process.*

**Action Plan:** Manitoba Hydro has already considered offering free software under the Network Energy Manager program. This design option was not considered the most effective since it was expected that a large number of customers would accept, but fail to implement, the free software. This design option would result in high program costs and would likely be non cost effective.

### **Commercial Programs - General**

*1. Recommendation: Increases incentive to overcome first cost barrier, increase renovation incentives to encourage early retirement.*

**Action Plan:** Manitoba Hydro recognizes both the economic and the messaging power of higher incentives for addressing first cost barriers; especially when offered on a limited time basis. Incentive levels for programs are reviewed on an ongoing basis and adjustments to incentive levels are made when justified.

*2. Recommendation: Provide extra incentives for multi-program participants.*

**Action Plan:** Manitoba Hydro has reviewed this recommendation and feels that the costs and resulting confusion to customers would outweigh any minimal additional energy savings that may be achieved. Commercial customers have more sophisticated decision making processes for conducting capital upgrades, which include factors that dictate the timing and nature of expenditures for which incremental incentive increases would have little impact.

*3. Recommendation: Provide loans and financing (on-bill)*

**Action Plan:** Manitoba Hydro has assessed the option of offering financing services to its commercial customers and has decided that this activity is best managed by companies (e.g. banks) who have the expertise in this business activity. Assessing the risks associated with various commercial customers is complex and would require the Corporation to enter into a business which is well serviced by the financial services sector. Unlike the residential loans offered, commercial loans would involve significant dollars and thus would require costly administration and interest rate costs. Although Manitoba Hydro does not offer financing to commercial customers as a regular service offering, exceptions have been, and will continue to be, made where justified.

*4. Recommendation: Actively participate in code development and enforcement.*

**Action Plan:** Incorporating energy efficiency measures into codes and regulations is an integral component of Manitoba Hydro's long term Power Smart plan and strategy. Manitoba Hydro has therefore committed staff resources to the current code development process for commercial buildings that is being undertaken by the Building Standards Board of Manitoba under the Minister of Labour. Manitoba Hydro has a dedicated staff position that works cooperatively with both Provincial and Federal governments to support additional energy efficiencies requirements being incorporated into codes and regulations. Work at the national level both for model codes and product performance is also undertaken on an ongoing basis.

**5. Recommendation:** *Create and make public a listing of "recommended" contractors.*

**Action Plan:** Manitoba Hydro does offer listings of qualified service providers for programs where a gap has been identified in the level of expertise required for successful program delivery. For example, Manitoba Hydro provides a list of qualified contractors for the Commercial Building Optimization Program (CBOP). These contractors are required to submit their qualifications and attend a Manitoba Hydro delivered session on retro-commissioning and required CBOP deliverables prior to being listed as a qualified provider. Manitoba Hydro intends to continue assessing gaps in the market and will address any identified gaps as deemed appropriate for each specific situation.

### **Prescriptive Programs - General**

**1. Recommendation:** *Expand list of measures offered.*

**Action Plan:** As part of the Corporation's Power Smart strategy, Manitoba Hydro regularly reviews and screens opportunities to advocate additional technologies through existing or additional cost-effective programs. Staff continues to re-evaluate product availability, product cost and potential energy savings as market conditions change. In addition, Manitoba Hydro's Custom Program continues to be available to fund any energy saving upgrades not already supported through an existing program. Technologies currently being reviewed include hood fans, commercial dishwashers, air source heat pumps, gray water heat recovery, commercial solar space and water heating, condensing water heaters, condensing unit heaters, heat recovery ventilators, outdoor reset controls, server virtualization, and commercial hand dryers.

**2. Recommendation:** *Creating or expand Programs for small commercial retrofits.*

**Action Plan:** The Power Smart Shops Program was launched in March 2009 to address this market. This Program had not been announced at the time the Dunsky team was reviewing the Power Smart portfolio.

### **Custom Programs - General**

**1. Recommendation:** *Eliminate requirement for feasibility studies as they make small projects cost prohibitive.*

**Action Plan:** Eliminating the requirement for feasibility studies has been considered in the past, however, it was determined that feasibility studies are valuable for determining the current state of energy consumption, efficiency levels and anticipated energy savings. The feasibility study also serves to protect customers from unrealistic anticipated energy savings, which could potentially be promoted by manufacturers and consultants.

**2. Recommendation:** *Provide feasibility studies at no cost to customer in order to encourage more to be done.*

**Action Plan:** Manitoba Hydro already offers generous incentives for feasibility studies which involve up to 50 per cent of the first \$5,000 and up to 25 per cent of the remaining portion (to a maximum incentive of \$10,000). Paying for the entire feasibility study would encourage customers to undertake such studies without any commitment to implement any energy efficient measures. By requiring payment for a reasonable portion of the study costs, customers are generally more committed to following up with the implementation of these measures. To address cases where customers may be hesitant to invest in the feasibility study as the scope and savings of the potential project are too small to justify their portion of the study investment, Manitoba Hydro's engineering staff conduct scoping/feasibility studies in lieu of an external consultant, thus removing the cost of the study as a barrier to participation. Upon implementation of the upgrade, the customer is paid based on the savings calculations presented in the scoping study.

**3. Recommendation:** *Customize incentives so they are based on a per cent of total project costs rather than a fixed amount per kWh and M3.*

**Action Plan:** It is doubtful that offering incentives based on a percentage of the customer's project cost would result in meaningful additional energy savings. Rather, this approach would likely encourage industry to raise prices, as Manitoba Hydro would be committing to a percentage of cost as opposed to energy savings. The result would also likely lead to the pursuit of uneconomic projects.

### **Industrial Processes**

**1. Recommendation:** *Account management for small and medium-sized customers: Manitoba Hydro does a truly excellent job of managing the energy needs of their largest customers. There is an opportunity to provide this type customer management for their smaller and medium sized customers. Many of those customers can benefit significantly from facility audits, engagement of their facilities managers concerning their options for improving efficiency (where feasible) and general information on the suite of options that are available to them under the industrial process program. Many smaller customers do not have the available resources to procure those services or obtain that information. As a result, Manitoba Hydro could be failing to capture substantial savings for those customers.*

**Action Plan:** Manitoba Hydro believes that program coverage to small and medium commercial and industrial customer process facilities is strongly targeted and established through proactive delivery channels that include mass marketing, Power Smart advertising, bill stuffers highlighting program information, web based program details and customized marketing through targeted workshops for customers and vendors on HVAC, heat pumps, lighting systems, motor systems, pump systems, compressed air systems, and cooling and refrigeration. In addition, customer service staff in district offices and the Customer Contact Centre are trained and informed on how to provide personal response to inquiries and opportunities.

This market segment is also targeted by the Power Smart sales team and the large team of energy service advisors backed by over thirty technical engineers and specialists who work with customers to identify and assess a customer's specific opportunities.

Enhancement to these efforts could be attained by expanding the EnerTrend offering to more customers to allow self-identity of opportunities by customers and to provide targeted account management and services by Account Representatives.

**Manitoba Hydro intends to** explore the potential for expanding self-service account management through the marketing of EnerTrend to all industrial and commercial customers, examine the use of third party involvement to review energy consumption data and identify opportunities for pro-active account management, and fast track the development and marketing of a "Real time" version of EnerTrend with device control capabilities.

**2. Recommendation:** *Upstream Market Actor Recruitment: Active engagement of outside engineering and architects would greatly expand the reach of the Industrial Process program. Currently, projects are brought to the attention of Manitoba Hydro program managers for an initial review of the project concept. If considered a viable concept, Manitoba Hydro provides the customer with incentives to conduct a feasibility study. Actively recruiting credible market actors with credentials would be in a better position to identify many more viable projects, each with potentially deeper savings per site location. Further, upstream specialist are more likely to have a better understanding of emerging technologies to consider of program implementation due to their intimate involvement in the field.*

**Action Plan:** Manitoba Hydro agrees that "upstream program strategies" are very important, are therefore currently uses them widely. These strategies consist of a broad scope of measures and initiatives that extend beyond the stated "vendor incentives" with respect to the commercial and industrial market.

As a supporting example of results, Manitoba Hydro deployed a dual component incentive for its high efficiency motor (HEM) program, issuing one component of the available incentive directly to customers and issuing another component of the available incentive directly to vendors in consideration of their promotion and stocking of high

efficiency products. The program achieved a transition of the market from less than 5% of energy efficiency sales to more than 70% for HEM in less than 5 years.

Manitoba Hydro also engages a number of compressed air sales and service vendors to perform system monitoring for a fee of \$500 per site, and some have been trained to provide a supplemental report for an additional \$500 per site. This helps build upstream capacity and encourages vendors to increase their sales leads and energy efficiency “buy-in” with customers in a credible, quality and Power Smart monitored way. To our knowledge, no other jurisdiction offers this type of interaction.

Motor rewind shops have also received a significant incentive to upgrade the quality of their rewind by using a core testing machine. This engages the motor service repair industry, builds upstream capacity for energy efficiency sales, and provides persistence of HEM savings after HEM market transformation.

Manitoba Hydro technical staff influence national market suppliers and stakeholder associations (going further upstream than local vendors) by being actively involved in the Canadian and US Department of Energy’s Motor Master initiative, the Compressed Air Challenge initiative, the Pump Systems Matter initiative, as well as participating in the development of provincial and national codes, standards and governance advisory boards.

**Manitoba Hydro intends to** engage in further efforts to standardize and harmonize facility energy efficiency screening and end use scoping assessments at the local, national and international level to gain wider support from manufacturers, vendors and service providers of energy efficient equipment, measures and control systems.

**3. Recommendation:** *Market Segmentation: Consider segmenting the market into key market areas in order to identify decision-makers within organizations. Develop additional case studies around key market segments in order to increase awareness of similarly-situated customers. This may prompt participating customer’s competitors to consider EE (energy efficiency) projects in order to remain cost-competitive.*

**Action Plan:** Unlike Quebec, BC, and Ontario, where there are large concentrations of similar industries, the Manitoba industrial market, while very diverse, has very small sectors. For example Manitoba has 2 large mining facilities, 3 large aerospace companies, 2 pulp mills, 3 food processing plants, and 2 bus manufacturing facilities rather than over 50 pulp and paper facilities alone as exists on the west coast or in Quebec. As a result of this diversity, Manitoba Hydro has focused on segmenting by cross-cutting technologies such as pumps, air compressors and refrigeration processes and systems within the different industries. In this way, a case study or Power Smart profile has a wider appeal and applicability to more than just one industry segment area.

Manitoba Hydro intends to:

- a) Continue to generate new case studies on the individual systems, and enhance that effort by providing a complete facility promotion from a total effort and impact to date perspective

- b) Enhance the customer relationship effort for small to medium markets by producing a “business case” profile targeted to small business executives/owners.
- c) Consider expanding the next planned global TV promotion to include a profile of a small-to-medium sized organization that has illustrated its commitment to energy efficiency through implementation of energy efficiency applications

**4. Recommendation:** *Turn-key operations: Oregon program managers provide customers with turn-key advice for projects, allowing the customers to remain focused on their business. Much of the project scoping, documentation and project oversight is performed by the third party contractor. Such services would encourage more customers to participate and help to reduce the hassle factor that many face.*

**Action Plan:** Based on Manitoba Hydro’s experience, the vast majority of the industrial customers prefer to manage the projects on their own, or include them as turnkey project by the bidding contractors. To that end, the methodology for calculating customer incentives allows for all planning, design and installation costs to be included in the project’s eligible costs for determining an incentive. Customers can also re-direct the incentive payout to the vendor, thus minimizing any extra billing and paperwork responsibility. In the case of a compressed air project, vendors can receive program financial support to provide the operational assessment and monitoring, energy efficiency recommendation report development, and final system redesign, as well as the implementation incentive to provide a turnkey job. This approach could be replicated for other product areas like pumps or HVAC systems.

Manitoba Hydro intends to review its program to eliminate any unrecognized barriers to the pump or HVAC service vendors from providing “turnkey” services for customers, similar to those offered by the compressed air system vendors.

## **Agricultural**

**1. Recommendation:** *Diversification: There is ample room for this program to expand the range of measures covered to include technologies necessary for other aspects of hog farming, or any other types of farming that take place in the Manitoba Hydro service territory. There are a variety of technologies for which there are cost-effective applications which can help farmers reduce their operating expenses and improve their profit margins in addition to installing efficient heating pads. The more complicated the list of measures becomes, the more the need for some type of analysis arises. Energy audits are useful for helping farmers to understand the full energy efficiency potential of the different systems their farm employs, to gain knowledge of current and emerging technologies that are used in their particular farming industry, and to get information about investing in infrastructure improvements for their operation. Combining audits with follow up services aimed at achieving a significant level of the efficiency potential identified at positive cash flow, will result in multiple benefits for Manitoba Hydro: higher participation, increased savings, and a more vibrant farm economy.*

**Action Plan:** All of Manitoba Hydro's commercial and industrial programs are available to customers in the agricultural sector. While there may not be a targeted agricultural program, the largest commercial farms receive quasi-dedicated account management service and technical support. The Customer Service Engineering department has a dedicated agricultural engineer, who has a responsibility to provide a high level of technical support specifically for this vital customer segment.

Manitoba Hydro will consider the use of third parties to identify energy efficiency opportunities. Manitoba Hydro will also explore customer interest in and the opportunity to offer EnerTrend, the on-line energy profiling tool, to capture and present historical energy use data, to allow identification of energy efficiency improvements. Manitoba Hydro also intends to examine opportunities to integrate applicable components from the industrial and commercial Power Smart programs into a targeted Energy Efficiency initiative that could be used with agricultural customers.

*2. Recommendation: Retrofits: By offering program partners the option of installed cost-based incentives, Manitoba Hydro could improve the market penetration not just of efficient heating pads, but all agricultural technologies. It is unclear from Manitoba Hydro's program descriptions whether or not there is a significant proportion of early replacement retrofits being undertaken; removing bulbs as well as fixtures and controls, which can have a 20-year measure life, in favor of heat pads. Typically in a program with an incentive structure such as this one, which is designed to replace existing technology at any point in its life cycle based purely on energy savings, there is no obvious distinction between replacing inefficient equipment before the end of its useful life and replacing it at the end of its useful life. It would be useful to evaluate the baseline technology at hog farms to see to what extent heat pads have become standard practice and whether farmers are capitalizing on incentives for projects that they would have undertaken regardless of the incentives' offering.*

**Action Plan:** Manitoba Hydro agrees and the Corporation continually evaluates the performance of energy efficiency programs' effectiveness, and modifies the programs to increase market participation and associated energy and non-energy benefits. For example, such modifications were made to the Heat Pad Program. Over the course of the program offering, eligibility for new construction was removed as it was deemed that new barns would pursue this technology even in the absence of incentives, more specifically that the new construction market had transformed. More recently, the program offering for the renovation market was discontinued as of March 31, 2010 as the market has demonstrated that the market has adopted the technology (i.e. the market is transformed).

Where appropriate, Manitoba Hydro has utilized upstream partners to increase the market penetration of energy efficiency products in the marketplace. There may be opportunities for retrofits on farm operations to replicate this previous success within the agricultural sector.

Diversification of the energy efficiency offering will assist in gaining program partner support, and increasing the simplicity of program participation should also increase market penetration for energy efficient retrofits. Inclusion of non-energy benefits into the program design can also have an even more significant influence on the program participation. For example, if a technology can decrease weanling mortality as well as save energy, the farm customer will have an additional and more important driver to participate in the program that will increase market penetration. Sales training and a deeper understanding of the agricultural operation's production issues will be required to provide this type of enhanced program customer service.

Manitoba Hydro intends to examine opportunities to integrate applicable components from the industrial and commercial Power Smart programs into a targeted Energy Efficiency initiative that could be used with the agricultural customers. In addition, Manitoba Hydro intends to examine opportunities to partner with upstream market actors (local distributors and contractors) to provide turnkey energy efficient solutions for retrofits within the agricultural sector.

## **Earth Power**

*1. Recommendation: Integration: Consider integrating the program into the Commercial Optimization and custom programs to acquire deep savings per facility, and reduce the administrative cost of the entire portfolio of programs. A whole-building approach increases energy savings opportunities and helps to reduce the number of customer "touches" resulting in lower administrative costs across the spectrum of services.*

**Action Plan:** In,Manitoba Hydro's opinion, integrating the Commercial Geothermal Program with the Commercial Optimization Program does not make sense, as the Optimization program entails recommissioning existing systems. Consideration for system changes such as replacing an existing heating and cooling system with a geothermal system would fall within the scope of the Commercial Custom program.

When first launched, all geothermal project proposals were administered through the Commercial Custom Program which requires a feasibility study. Based upon strong customer and industry feedback, Manitoba Hydro introduced the prescriptive geothermal offering for projects in non-gas available areas as part of the Custom Program. Introducing this option reduced the administrative cost of the program and the cost of the overall project for the customer. Although additional measures are typically not done in conjunction with a geothermal retrofit, Manitoba Hydro continues to channel such applications through the Commercial Custom program. This approach will result in one less application form, however, it is not expected that this change will yield additional installation of geothermal systems.

Manitoba Hydro intends to consult with industry and customers to explore potential improvement opportunities which could be made to the application process.



**2. Recommendation:** *Workforce development: Continue educational efforts to expand the supply of qualified GSHP designers and installers. Determine whether access to qualified installers is limited in outlying areas of the province. If it is, then consider additional training and outreach. Such efforts may reduce installation costs. Increasing customer access to a pool of qualified GSHP workforce will help reduce installation costs.*

**Action Plan:** Manitoba Hydro agrees that ongoing development in the geothermal industry is important and the Corporation intends to continue its efforts to support the Manitoba Geothermal Energy Alliance and the Canadian GeoExchange Coalition. Both these organizations offer ongoing training in Manitoba and at this time no gaps in training are evident (i.e. training is offered on a regular basis and Manitoba Hydro is not aware of applicants being turned down for registration).

Manitoba Hydro will continue to monitor the demand for geothermal systems and industry capacity for meeting this demand within Manitoba. Manitoba Hydro will also continue to support the Manitoba Geothermal Energy Alliance and the Canadian GeoExchange Coalition in their efforts to offer additional training within Manitoba.

**3. Recommendation:** *Utility-owned GSHP infrastructure: To rapidly increase the number of GSHP installations, consider utility-owned GSHP loops. Since loops outlive buildings and heat pumps, proponents of GSHP argue that utility-owned loop plant will substantially reduce first cost market barriers and improve customer economics. According to an Oak Ridge Laboratory report, increased penetration of GSHP results in societal benefits as GSHP have a positive effect on load shapes and reduce peak demand. Ultimately, the loop ownership strategy is meant to ensure that loops are treated consistently with transmission and distribution lines, as both are vehicles to transmit energy to a customer's side.*

**Action Plan:** Manitoba Hydro is exploring the loop and system tariff model for commercial geothermal heat pumps and concurs that utility owned infrastructure could potentially result in additional installations in Commercial applications. Manitoba Hydro will assess the viability and business case for offering a loop lease option for the commercial sector.