

Sustainable Energy Solutions

One Tonne Corporate Challenge

Overview, Evaluation and Lessons Learned

Krista Tremblett • Ellen Francis



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As part of this project, all employees registered with the One Less Tonne tool were eligible for discounts at the following establishments: Home-Work Contractor Referral, Friesen's Climate Control Ltd., Zerodraft (Calgary), Greg Martineau Projects, Diamond Fireplace and Stone, Calgary Lighting Products, Chacare Insulations Ltd., Aspen Heating and Air Conditioning, Rona Revy and Trail Appliances. The availability of such discounts was made possible by the efforts of VerdaTech Inc. and the Pembina Institute and the generosity of the suppliers.

Although we have no way of calculating their contribution to this challenge, we believe the total GHG emission reductions go well beyond the actions taken by company employees. Many family members and friends of participants also took the time to learn about the actions in the One Less Tonne tool and did their part to reduce greenhouse gas emissions. Actions with quick payoffs (e.g., light bulbs) were shared by word of mouth and extended beyond the calculations made in this report.

Finally, we would like to congratulate those who had a hard time finding additional ways to reduce their personal greenhouse gas emissions, as they were already making efforts to use energy wisely before they took the One Tonne Challenge.

The success of this project was made possible by the funding provided through the federal government's Climate Change Action Fund.

The Pembina Institute is now expanding the One Tonne Corporate Challenge to other Canadian companies interested in getting their employees involved in reducing greenhouse gas emissions. For more information, please contact Ed Whittingham at edw@embina.org or 403-269-3344.

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About the Pembina Institute

The Pembina Institute creates sustainable energy solutions through research, education and advocacy. It promotes environmental, social and economic sustainability in the public interest by developing practical solutions for communities, individuals, governments and businesses. The Pembina Institute provides policy research leadership and education on climate change, energy issues, green economics, energy efficiency and conservation, renewable energy and environmental governance. More information about the Pembina Institute is available at http://www.pembina.org or by contacting: info@pembina.org

Executive Summary

The Climate Change Bureau of Environment Canada sponsored a Pembina Institute pilot initiative entitled the One Tonne Corporate Challenge (OTCC). The goal of the OTCC was to encourage employees from participating corporations to reduce their personal greenhouse gas (GHG) emissions. Four corporations — Shell Canada, Petro-Canada, Suncor Energy and ConocoPhillips Canada — participated in the pilot project.

The Pembina Institute developed an easy-to-use, Internet-based commitment tool that encouraged company employees to take personal action. With every action an employee selects, the One Less Tonne (OLT) tool calculates the GHG emission reductions they will achieve, as well as the money they will save through reduced electricity or fuel costs. The OLT tool provides companies with a practical way to monitor and evaluate the success of their respective OTCC programs.

To determine the success of the OTCC and the OLT on-line tool, an evaluation was conducted. Total GHG reductions and energy cost savings commitments realized by the companies was determined using the OLT tool database. Responses from an electronic survey, distributed to employees who registered with the OLT tool, were used to determine the extent to which people were achieving their commitments.

The following key recommendations were derived from this project:

- 1. To successfully participate in an employee challenge to reduce GHGs, a dedicated internal team of employees from different areas of the organization should be involved in the initiative. This approach allows tasks to be distributed widely and increases opportunities to promote the program internally.
- 2. Senior management must be committed to the challenge to ensure that appropriate resources are allocated to the initiative, and it is promoted to all levels of the organization.
- 3. Organizations should encourage early employee participation in the challenge, as this increases the likelihood that individuals will later act on their commitment and take part in additional events. Early participation can be encouraged using incentives (e.g., early bird prize draws) and deadlines.
- 4. Once employees are engaged in the challenge, organizations should design and deliver a longer-term social marketing campaign to build and maintain motivation and social momentum over time.
- 5. Organizations should exercise opportunities to remind employees who have committed to reduce GHGs, using the OLT tool, to follow through with action. Organizations might choose to reinforce employee commitments with a thank-you note or other reminder of their specific actions.
- 6. GHG reducing actions taken by individuals prior to an employee challenge should be recognized (e.g., the Pembina Institute modified the OLT tool to allow registrants to log their early actions).

The following table provides a summary of activities taken by participating companies.

	Project Planning and Management	Communication Strategy and Activities	Use of Incentives	One Less Tonne Commitment Summary*
-	Strategies for organizing and delivering the OTCC program varied among companies, ranging from a single employee to a team approach. Time was either allocated to one project manager and an assistant or it was distributed among one or two project managers and an internal team.	Mass e-mails (if permitted), information booths set up in company foyers, posters, desk drops (flyers on employee desks), intranets, and information sessions (e.g., lunch-and- learns) were all used to promote the OTCC.	Prizes, gifts and subsidies (e.g., home energy audit rebates) were used to encourage employee participation in the OTCC.	GHG Emission Reductions: 4576 tonnes Dollars Saved: \$769,900

* As of February 10, 2005

The Pembina Institute is now expanding the One Tonne Corporate Challenge to other Canadian companies interested in getting their employees involved in reducing greenhouse gas emissions. For more information, please contact Ed Whittingham at <u>edw@pembina.org</u> or 403-269-3344.

One Tonne Corporate Challenge

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1 Introduction

1.1 Purpose

This paper provides an overview of a Pembina Institute pilot initiative, sponsored by the Climate Change Bureau of Environment Canada, entitled The One Tonne Corporate Challenge (OTCC). This report details the Pembina Institute's experience in coordinating the OTCC, as well as some of the various strategies used and results achieved. Lessons learned in the process of project design, development and implementation are also outlined.

1.2 Structure of the Report

Following this introduction, the report has three main sections:

Section 2 describes the steps companies took in planning their respective OTCC programs including human resources, and program design and implementation.

Section 3 presents the results of the GHG emission reductions and energy cost savings of the participating companies, and includes an interpretation of the results and general conclusions.

Section 4 offers a summary of the pilot program results, together with the Pembina Institute's general recommendations for future initiatives of this nature.

1.3 The One Tonne Corporate Challenge

The Climate Change Bureau of Environment Canada sponsored a Pembina Institute pilot initiative entitled The One Tonne Corporate Challenge (OTCC). The goal of the OTCC was to encourage employees from participating companies to reduce their personal greenhouse gas (GHG) emissions. Four corporations — Shell Canada, Petro-Canada, Suncor Energy and ConocoPhillips Canada — participated in this pilot project, which the Pembina Institute delivered between October 2003 and December 2004.

Each company assembled an internal team, developed a strategy for delivering the program, and utilized the Pembina Institute's expertise and resources with respect to program design and delivery, communications and employee engagement. Each company selected an OTCC project manager, with additional employee time made available for various aspects of the program.

Although each company's program was unique, common elements emerged including the following:

- Commitment strategy (i.e., One Less Tonne tool);
- Project launch strategy (e.g., announcements, early bird prizes);
- Communication strategy (e.g., messaging, communication tools); and
- Incentives (e.g., prizes, discounts).

1.4 One Less Tonne Tool

All companies participating in the OTCC used the Pembina Institute's One Less Tonne (OLT) tool.¹ The Pembina Institute developed this easy-to-use, Internet-based commitment tool to encourage individuals to reduce their personal GHG emissions. The purpose of the OLT tool was to help Canadians choose actions to meet the challenge contained in Canada's Climate Change Plan — for each Canadian to cut his or her annual emissions of GHGs by one tonne, or about 20%.

The tool invites users to choose from among 20 actions to change the way they use energy at home or on the road. With every action selected, the tool calculates the GHG emission reductions achieved and the energy costs saved through reduced electricity or fuel costs.

The OLT tool is an effective way of promoting an employee challenge to reduce GHGs because it provides companies with a simple, fun approach to engage employees in energy-saving activities. In addition, the OLT tool provides a practical way to monitor and evaluate commitments associated with the federal government's One Tonne Challenge activities.

The Pembina Institute provided each company with customized access to the tool, including a unique Web address, user name and password. Companies were also provided OLT tool commitment statistics, including the names and number of employees who signed up, the total committed emission reductions and the estimated energy costs savings.

¹ The public version of this tool can be found on the internet at www.onelesstonne.ca

^{2 -} The Pembina Institute • One Tonne Corporate Challenge: Overview, Evaluation and Lessons Learned

2 Program Design and Implementation

2.1 Getting Started

Planning was a critical step in developing a successful OTCC and ensuring that the program effectively engaged employees. The following sections describe the steps companies took in planning and implementing their respective OTCC programs including human resources, program design and communication strategy.

2.1.1 Human Resources

The first step in the strategic and logistical development of the OTCC program was selecting an OTCC manager and supporting human resources. Approaches used for OTCC development varied among companies, ranging from a single employee to an entire team championing the process. Companies with adequate human resources to take on responsibilities and tasks related to the program were able to ensure that creative ideas and activities were pursued and followed through with. For example, an internal team in one company, made up of members from different business units, met regularly to provide input on the OTCC communication strategy, promotional material content (e.g., posters) and other activities (e.g., information sessions).

The OTCC manager should be dedicated to the program and have a portion of his or her time specifically allocated to promote the program. This person(s) would be responsible for tasks including: 1) delegating tasks to supporting staff/volunteers; 2) advertising and promoting the program to employees; 3) choosing messaging and incentives most suited to the employee profile; 4) organizing and delivering activities (e.g., information sessions); and 5) preparing news releases and other communication.

Internal champions were also identified as essential to a successful program. It was recommended that there be at least one champion on the internal management team to provide resources and to support other employees interested in championing the program.

Support from the company's senior management and communication department was also determined to be important for the OTCC as this ensured that staff hours were dedicated to the program and that the program was promoted at all levels. In addition, accessible Information Technologies (IT) services were valuable for the development of successful programs, as they were needed to design and maintain the companies' intranet.

The companies that took part in this challenge reported spending an average of 40 person-days of employee time per company on the OTCC. In light of experience based on the pilot project, a company of a similar size (1000+ employees) and structure of the four participating companies could probably anticipate spending 30-35 days of employee time to run a similar program. In the case of the pilot project, time was allocated to one project manager and an assistant or it was distributed among one or two project managers and an internal implementation team.

2.1.2 Program Design

Part of the planning process involved discussions among senior management, program managers and internal teams on elements of program design including goals and objectives, timing and scope. Companies began by setting goals and objectives, articulating what they wanted to accomplish (e.g., level of GHG reductions) and actions they would take to get there (e.g., encourage employees to use the OLT tool to make a GHG reduction commitment).

Program scope (e.g., office locations included in the OTCC) and length are important considerations in program design; they depend primarily on human and financial resource availability. For instance, a company must ensure that adequate human resources exist if it rolls out a program in multiple locations across Canada. At a minimum, each location would need a program manager to distribute prizes, field employee inquiries and post promotional material. With respect to program length, a company must ensure that human resources are available to maintain and manage the program in a prescribed timeframe (e.g., three months to one year). Early on in the planning process, companies defined the scope and length of the program. These varied among companies, ranging from a one-year program aimed at Calgary-based employees to a brief two-week promotion that involved Calgary- and field-based (Alberta only) employees.

Program timing is also an important strategic consideration. Based on the challenges and opportunities encountered around timing in the pilot project, the following should be considered:

- Seasonality
 - Consider how seasonality affects motivation to carry out specific actions (e.g., adopting less energy intensive forms of transportation such as biking or walking could be less desirable in the winter months).
 - Find ways to coordinate communication efforts with the seasons (e.g., launching a home energy efficiency theme in the fall, a transportation theme in the spring etc.).
 - o Avoid timing indoor events when the summer weather has arrived.
- Be aware of other company events and potential conflicts and/or synergies
 - Promoting the program with other company events or meetings is a good way to synergize.
 - Different organizations will have higher workloads at different times of the year. For example, March and April might be poor times to launch a challenge at accounting firms, as tax season is likely their busiest time.
 - When distributing e-mails promoting the program, consider the day and time of distribution, as this could affect whether or not employees read the message (e.g., employees might be more likely to read general company broadcast messages during slow periods such as near the end of the week or after lunch).
- Consider the culture of employees at an organization, as this could help determine the timing of events (e.g., Do employees generally leave early or not work on Fridays? Do the majority of employees leave work during lunchtime?).
- Decide how to build and maintain motivation and social momentum over time. For example, design a program launch that will yield high registration coupled with well-timed events and communications throughout the remainder of the program to continually engage employees and maintain interest.

^{4 -} The Pembina Institute • One Tonne Corporate Challenge: Overview, Evaluation and Lessons Learned

2.1.3 Communication Strategy

An effective OTCC program involves careful design and a diverse communication strategy. Described below are various elements associated with building an effective communication strategy including understanding the audience, selecting messaging, key tools of change, and employee engagement strategies.

2.1.3.1 Understanding the audience

A key element of building a successful social marketing campaign is to first gain an understanding of the target audience. One approach is to divide the target audience, build profiles of common characteristics within the divisions, and choose the most appropriate combination of communication and financial incentive strategies to effectively appeal to each division. Building employee profiles based around available data on demographics, gender and residence can provide useful insights to assist with determining what might influence employees to modify a particular behaviour. For instance, an employee's choice of transportation to and from work is likely influenced by variables such as distance from the office, ease and convenience of public transit, and individual work schedules. In turn, young professionals might represent the largest portion of employees living in the inner city and therefore be a group more likely to adopt public transit transportation options. Similarly, the likelihood of an individual implementing specific energy efficient measures at home is likely influenced by such variables as whether or not they own the home, the age of their home, their awareness of the factors affecting home energy efficiency (energy-efficient light bulbs, GHG emissions from refrigerators, etc.) and their income levels i.e., purchasing power. Similarly, if it is assumed that mid-career to senior-career professionals are more likely to own their homes, they might in turn be more interested in energy-efficient large appliances and energy-efficient furnaces.

To gain a better understanding of its target audience, one company gathered, collated and analyzed demographic and geographic data on employees. This information was used to gain a better understanding of the potential OTCC audience and helped guide the OTCC team towards strategically directing resources at a particular audience and ensuring that communication, education and financial incentive strategies were designed to appeal to all employees.

2.1.3.2 Selecting messaging

To encourage action, it is first necessary to capture the audience's attention. Hence, how one presents or "frames" an activity he or she is trying to promote is very important. Recognizing this, companies participating in the OTCC devoted time and creative energy to develop messages that would motivate employees. One company articulated key messages that highlighted the personal and environmental benefits of participation, and how easy it was to take the challenge. These included:

- Small actions at work, at home and on the road can reduce greenhouse gas emissions while also reducing air and water pollution;
- Simple, everyday actions make a difference in reducing personal sources of GHGs;
- Energy-efficient technologies and products consume less energy while having little to no impact on lifestyles;
- Reducing GHG emissions saves money too.

2.1.3.3 Key tools of change

The most effective communication strategy uses a variety of tools to reach employees. Mass emails (if permitted), information booths set up in company foyers, posters, desk drops (flyers on employee desks), intranets and information sessions (e.g., lunch-and-learns) were all used to promote the pilot OTCC. Some key communication tools used in the pilot program are described below.

Intranet

Use of the intranet (i.e., a company internal web site) was a preferred method for some companies because it was a convenient "one-stop shop" for employees to access OTCC resources and information. It allowed companies to provide considerably more information and use significantly less paper than if they had used a printed flyer or brochure. Furthermore, using an intranet gave OTCC organizers the ability to post updated information for employees (e.g., program events) quickly and easily.

One company used its site to feature success stories that recognized individual employees who went above and beyond their OTCC commitments. Pembina Institute staff assisted in the development of internal Web page content, which included access to supplier discounts, upcoming events and links to both relevant federal government sites,² as well as information on individual- and household-based actions to reduce GHGs.³

An article on bicycle commuting (see Appendix A) was written by the Pembina Institute and posted on one company's OTCC web site. The article was used to promote a bicycle/inline skating information session. It generated positive feedback from employees who suggested that similar articles be used to promote other GHG-reducing initiatives.

Information sessions

Information, or "lunch-and-learn", sessions were used to promote various topics (e.g., energy efficiency, alternative transportation) as well as provide a platform to direct employees to register on the OLT tool. These sessions were promoted using posters, newsletters and the intranet. Timing issues, as outlined in section 2.1.2, should be considered when designing information sessions.

For a description of topics featured at the information sessions see Appendix B.

Information booths

Information booths set up in company foyers were used to promote the OTCC and the OLT tool. Some companies scheduled booths to coincide with other events. As described in section 2.1.3, some companies used information booths as part of their launch. In one case, OTCC team members greeted fellow employees in their company foyer and distributed coffee, muffins and flyers. Flyers instructed employees on how to register on the OLT tool and included information on incentives and upcoming information sessions.

6 - The Pembina Institute • One Tonne Corporate Challenge: Overview, Evaluation and Lessons Learned

² Examples include http://www.climatechange.gc.ca/ plan_for_canada/ and http://www.climatechange.gc.ca/english/otc/

³ For example, http://www.climatechangesolutions.com/ individuals/residential/default.shtml?o=residential

Other communication tools

- **Posters** used by companies to introduce the program and advertise events (e.g., lunch and learns). Posters were strategically placed in high traffic areas (e.g., elevators). One company featured a story about an employee's commitments and resulting actions to make the poster more interesting and to encourage employees to think about similar actions that they could take.
- **Internal newsletters** used to showcase success stories about employees who have made extra effort with their GHG reduction commitments.

2.1.3.4 Employee engagement strategies

When the audience has been profiled, the messaging crafted and the tools chosen, a company should be ready to engage its employees. Strategies used to promote the OTCC to employees varied among companies. Based on the experience of the pilot OTCC, employee engagement can be differentiated in three stages — early, introductory and ongoing engagement. These are discussed below.

Early employee engagement

Before the official launch of the OTCC, some companies began to introduce the program to employees. One method of reaching employees before launching the challenge involved conducting targeted employee engagement sessions (e.g., power point presentations). This strategy planted the seeds of awareness and established a broad-based group of employees familiar with the upcoming program.

Another successful employee engagement strategy used was a pre-launch desk drop and subsequent e-mail, as described in the next section. The desk drop was designed to attract attention to the program and spark the interest of employees.

Early Employee Engagement Sessions

One company conducted OTCC introductory sessions before the official launch of the program. The sessions were designed to encourage employee interaction and conversation about the concepts proposed in the federal One Tonne Challenge. Sessions covered OTCC background, the benefits of participation and a demonstration of the on-line OLT tool.

Introductory engagement — OTCC launch

One company used a single communication tool to launch the OTCC — flyers directed employees to the company's internal web page. The idea was to slowly expose people to the project concept and then to move into more intensive promotional activities. Another company used multiple communication tools including an information booth and an intranet announcement. The most effective approach to introducing the OTCC to employees, resulting in the highest number of registrations (on the OLT tool), involved a coordinated e-mail/desk drop campaign (See Box 1). Highly visible campaign promotion cards (i.e., desk drops) were placed at each employee's workstation with the message to go directly to their e-mail to access the link to the OLT tool (See Appendix C for sample desk drop card).

Box 1 Desk Drop and Email Launch

To introduce the OTCC to employees, one company placed highly visible promotional cards (i.e., desk drops) at employee workstations (e.g., computer keyboard, chair, desk) after business hours. The card outlined directions for registering on the OLT tool website and included information on registration incentives (e.g., early bird prize draw). An e-mail with the same information was distributed at the same time. This coordinated communication effort helped increased the likelihood that employees would go on-line and register their GHG reduction commitments with the OLT tool, as they had instant computer access at their workstation

Ongoing employee engagement

Maintaining the interest of employees who had already registered for the OTCC and reaching out to encourage additional participation was another element of the communication strategy of participating companies. This section describes some of the methods used in the OTCC to maintain ongoing employee engagement.

Prompts

A prompt is a tool used to remind people to engage in an action. Prompts were effective in reminding people to participate in the OTCC and follow through on their OLT tool commitments. Below are some examples of prompts used:

- Personal commitment cards One company used visual aids to remind employees of their commitment to reduce GHGs. Personalized commitment cards featured the names and OLT tool commitments of employees that registered with the OLT tool. The cards served as a constant reminder of the actions individuals had committed to (See Appendix D for an example).
- Quizzes a simple quiz related to GHG reducing actions was distributed by e-mail to one company's employees midway through the program. Three randomly chosen, OLT-tool-registered individuals who answered the quiz correctly, were awarded a small prize (e.g., compact fluorescent light bulbs). Small contests such as this are another way to remind employees of their commitment to the program and could encourage additional participation from other employees.
- Newsletter weekly GHG reducing tips were highlighted in an internal newsletter. The tips ranged from water conservation and transportation to home energy efficiency and wind power. Articles promoting supplier discounts and home energy audits were also featured in the newsletter along with success stories about employees who have made extra effort with their GHG reduction commitments.
- Gift delivery One company chose to personally deliver gifts while another company instructed employees to collect their gift at a central location. Both companies used this time to remind employees of their OLT tool commitments.

Incentives

Participating companies used incentives (e.g., prizes, gifts and subsidies) to encourage employee participation in the OTCC. Some of the companies offered a choice of gift to employees who signed up for the challenge using the OLT tool. The most popular chosen sign-up gifts were tire gauges, public transit tickets and compact fluorescent light bulbs. Other prizes offered included wind power certificates⁴, bike helmets, water saver kits, programmable thermostats and lunch bags.

It is important that companies award incentives exclusively to those who make a commitment using the OLT tool (or equivalent) to reduce their GHG emissions. This is important because, in addition to providing individuals with information on actions to reduce GHGs, the OLT tool is effective at tracking the number of individuals signed up for the challenge as well as the actions committed to. In this way, it is more likely that commitments taken by all participants in the challenge are captured.

As part of this project, all employees registered with the OLT tool were eligible for discounts at the following establishments: Home-Work Contractor Referral, Friesen's Climate Control Ltd., Zerodraft (Calgary), Greg Martineau Projects, Diamond Fireplace and Stone, Calgary Lighting Products, Chacare Insulations Ltd., Aspen Heating and Air Conditioning, Rona Revy and Trail Appliances. The availability of such discounts was made possible by the efforts of VerdaTech Inc. and the Pembina Institute and the generosity of the suppliers.

Other incentive-based approaches used by some of the companies included:

- Home energy audit subsidies employees who had an EnerGuide for Houses home evaluation received a rebate from their company.
- Prizes were offered at lunch-and-learn sessions to encourage attendance at these events.
- Car pool program encouraged employees to carpool to work by helping to match them up with other employees looking to carpool. The goal was to create four carpool teams, with each team representing one quadrant of the city. As an incentive to encourage individuals to participate in the program, one parking stall per team and a 50% subsidy on the cost of parking for the first six months were offered.
- OTCC story contest one company provided employees the opportunity to send in interesting stories related to their personal GHG emissions reductions; the winning story was showcased on posters for the next upcoming event, or included on the company's intranet.

Registration Incentives

Some companies offered a gift to those employees registered with the OLT tool. This proved to be an effective technique to encourage OTCC participation as gifts choices were closely tied to GHG-reducing actions. For example, employees were given a choice among items such as compact fluorescent light bulbs, public transit tickets, digital tire gauges and low-flow showerheads.

⁴ Wind power is a separate product from electricity consumption and represents only the environmental benefits of wind electricity production. Individuals who purchase wind power still receive an electricity bill from their local power producer.

Other ongoing engagement methods

Lunch–and-learns (i.e., information sessions) were used by some of the companies to maintain interest in the OTCC and were timed to coincide with seasons. For example, a lunch-and-learn session on biking and roller blading was presented in late spring when employees would likely be more motivated to use alternative transportation to work.

2.1.4 Conclusions

Some key conclusions with respect to designing an employee challenge to reduce GHGs were drawn from the pilot OTCC including:

1. Ensure adequate resources are allocated.

- 2. Clearly define the time line for the initiative.
- 3. Access internal or external social marketing skills to help develop the outreach plan.
- 4. Link the initiative to other objectives and initiatives in the company.
- 5. Build a spirit of creativity and have fun launching the employee engagement initiative.

6. Evaluate results and learn from the initiative to help inform future employee engagement projects.

3 Employee Commitment and Action

The One Tonne Corporate Challenge (OTCC) was developed to encourage and facilitate the reduction of one tonne of GHG emissions by employees of four Canadian energy companies — Shell Canada, Petro-Canada, Suncor Energy and ConocoPhillips Canada. Each company utilized the One Less Tonne (OLT) on-line tool (see Section 1.4) to inform and engage their employees on actions to reduce one tonne of GHGs. To determine the success of the OTCC and the OLT on-line tool (i.e., the extent to which people were achieving their commitments) an evaluation was conducted. This section discusses the approach and results of the evaluation to illustrate the effectiveness of the OTCC.

3.1 Evaluating Employee Commitment and Action

The objectives for the evaluation were to:

- identify and compare the total committed and actual total emission reductions and energy costs saved during the OTCC (calculations based on survey responses);
- identify the primary reason(s) for people to both participate in the OTCC and to follow through on commitments;
- identify the primary obstacles preventing people from following through on commitments;
- identify the most and least popular commitments;
- identify commitments most and least often followed through on;
- evaluate the effectiveness of the incentives (i.e., were incentives important in increasing participation?); and
- engage participants one more time.

Two primary tools were used to conduct the OTCC evaluation — the OLT tool database and an electronic survey. The OLT tool database was used to determine the GHG emission reductions and energy cost savings for One Less Tonne actions *committed to* by company employees who had registered with the tool (herein referred to as "OLT tool participants"). The database provided GHG emission reductions and energy cost savings <u>per individual action</u> on a per registrant basis as well as <u>in total</u> for the company.

An electronic survey designed by the Pembina Institute was also used to gather information for the OTCC evaluation. E-mailed to participants at each of the four companies during the fall 2004,⁵ the electronic survey was used to determine which commitments OLT tool participants followed through on, together with their actual realized GHG reductions and energy cost savings. The original evaluation design also included telephone interviews. However, because of time constraints and a low response rate to the request for interviews, these were excluded from the evaluation.

⁵ Survey distribution schedule: Shell Canada — September 2004; Petro-Canada — October 2004; Suncor Energy — November 2004; ConocoPhillips Canada — December 2004.

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To bring the OLT tool and electronic survey data together for analysis, spreadsheets designed to calculate committed and implemented energy cost savings and GHG reductions were developed for each company. Spreadsheet data represented the total number of individuals that participated in the survey evaluation (herein referred to as "survey respondents"). The total *committed* energy cost savings and GHG reductions were calculated based on what survey respondents would have achieved according to the commitments they initially made using the OLT tool. They did not include the commitments made by OLT tool participants who did not respond to the evaluation survey.

The total *implemented* energy cost savings and GHG reductions were calculated based on what survey respondents should have achieved based on the actions they said they fulfilled. For both the committed and implemented savings and GHG reductions, the values reported are typical (or average) savings and emissions reductions that would be anticipated for the different actions.

See Figure 1 for an outline of the evaluation process.



Figure 1 OTCC Evaluation Process

3.2 Employee Participation

Table 1 shows the levels of employee participation in the different stages of the OTCC program for all four companies.

Potential Participants		Those who participated using the OLT tool**		Those who participated in the electronic survey		
Number	%	Number	%	Number	%	
4600	100	1321	29	374	30	

Table 1 Summary of company participation in the One Tonne Corporate Challenge

* During electronic survey e-mail distribution to OLT tool participants, several surveys were returned because of a mail delivery failure. When calculating the percentage of people participating in the electronic survey, these OLT participants were deducted from the denominator.

** The percentage of employees using the OLT tool was based on the total number of OLT tool registrants from all four companies.

3.3 Results

The following is a presentation of the results from the OTCC evaluation. There are two sets of distinct results: those derived from the OLT tool database and those derived from the electronic survey (see Figure 1). Results derived from the OLT tool database represent the total GHG reduction and energy cost savings committed to by OLT tool participants. Results drawn from the electronic survey represent the committed and implemented energy cost savings and GHG reductions realized by survey respondents; they do not include the commitments made by OLT tool participants who did not respond to the evaluation survey. Figure 2 presents a diagrammatic representation of the evaluation results.



- A. Committed GHG emission reductions and energy cost savings of OLT tool participants (see Table 2)
 - Committed GHG emission reductions and energy cost savings of survey respondents (see Table 3)

B.

C. Implemented GHG emission reductions and energy cost savings of survey respondents (See Table 3)

Figure 2 Diagrammatic representation of evaluation results

Summary of OLT tool results

Table 2 outlines the OLT tool results based on the OLT tool participants. The total *committed* energy cost savings and GHG reductions for each company were derived from the OLT tool database and represent the total number of OLT tool participants.

Table 2 Summary of company commitments: Annual GHG reduction and

energy savings of OLT tool participants

Total committed GHG reductions of	Total committed energy cost		
OLT tool participants	savings of OLT tool participants		
4576 tonnes	\$770,021.00		

3.3.1 Summary of survey results

Table 3 outlines the OTCC program results based on survey responses (i.e., the total committed/implemented GHG reductions and energy cost savings realized by survey respondents). Because the implemented GHG reductions and energy cost savings were calculated based on only a sample of employees from each company who participated in the OTCC, the results likely underestimate the actual GHG reductions and energy savings. (See Table 1 for OLT tool and electronic survey participation numbers).

Observations from Table 3:

The actual (implemented) GHG reductions and energy cost savings realized by survey respondents in all four companies were higher than what was originally committed to. This might suggest that respondents found some actions easier to implement than originally expected. It may also suggest that because actions largely ended up being easier to complete than anticipated, people made additional behaviour changes they had not originally committed to.

Table 3 Summary of company evaluation results: Annual GHG reductions and energy cost savings of survey respondents

Total committed	Total implemented	Total committed energy	Total implemented	
GHG reductions of	GHG reductions of	cost savings of survey	energy cost savings of	
survey respondents	survey respondents	respondents	survey respondents	
1178 tonnes	1345 tonnes	\$211,650	\$247,820	

3.3.2 Actions with the highest GHG reductions: Survey results

Figure 3 presents the OLT tool actions that realized the greatest total GHG reductions among the 373 survey respondents from all four companies.



Figure 3 Actions that realized the highest total GHG reductions among survey respondents of the four companies

The actions listed in Figure 3 do not necessarily generate the highest GHG reductions based on the actions themselves. Rather, these actions realized the highest reductions because they engendered high participation rates and because of the variability in the level of commitment for some actions taken (e.g., using 5% versus 50% green power). For example, the high participation rate associated with the "replace light bulbs" action was directly related to this action's high total GHG reductions. Survey results for the four companies revealed that between 76 to 81% of survey respondents committed to, and 82 to 84% implemented, the "replace light bulbs" action. The high participation rates for this action were partly attributed to the ease of implementation. If the results are accurate, this suggests that relatively easy actions, which appear to be popular with survey respondents, can add up to significant GHG emission reductions.

Variability in the level of commitment also influenced the high GHG reductions. For example, the number of appliances an individual commits to replace has considerable influence on the level of GHG reductions. Table 4 illustrates how the level of commitment for various actions results in varying levels of GHG reductions. High and low scenarios were constructed for each commitment based on the parameters used directly in the OLT tool.⁶

⁶ The One Less Tonne tool calculates typical GHG emission reductions and energy cost savings associated with a list of actions. For a detailed explanation of parameters and assumptions used in the One Less Tonne tool, go to http://www.onelesstonne.ca/sourcescalcs.pdf.

Action	Action Conditions		ions CO2e Re (ton		Cost Savings (\$)	
	Low	High	Low	High	Low	High
Install new furnace	Water heating only	Space and water heating	0.57	2.06	136.23	493.77
Purchase green power	10% green power	50% green power	0.82	4.12	-37.18	-185.92
Reduce highway speed	By 5 km/hour	By 15 km/hour	0.09	0.26	24.40	73.19
Replace appliances	1 appliance	3 appliances	0.44	1.33	40.50	121.50

Table 4 High and low scenarios for selected One Less Tonne tool actions

Notes: The CO_2e reductions and cost savings are based on a family of four in Alberta.

Green power is a separate product from electricity consumption, and represents only the environmental benefits of green electricity production. Individuals who purchase green power still receive an electricity bill from their local power producer.

3.3.3 Actions with the highest energy cost savings: Survey results

Figure 4 presents the OLT tool actions that realized the greatest energy cost savings among the 373 survey respondents from all four companies.



Figure 4 Actions that realized the highest total energy cost savings among survey respondents of all four companies. Results are total for all 373 survey respondents.

There are two reasons why these particular actions realized the greatest energy cost savings: high participation rates and individual energy cost savings.

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The total number of survey respondents that committed to or implemented a particular action directly determines an action's total energy cost savings. For example, the overall high energy cost savings achieved by turning down the temperature in a home is a result of the high participation rates associated with this action — between 42 to 56 % of survey respondents committed to, and between 60 to 72% implemented, this action. If the results are accurate, this suggests that relatively easy actions, which appear to be popular with survey respondents, can add up to significant energy savings.

In addition to ease of implementation, participants' choices of OLT actions seemed also to be influenced by the amount of money they stood to save by committing to that action. For example, the typical energy cost savings associated with the "turn down temperature in home" action is \$179 annually (using an Albertan family of four scenario). Similarly, replacing light bulbs can result in significant energy cost savings of approximately \$135 annually (using an Albertan family of four scenario). According to survey respondent comments, ease of implementation together with the annual savings associated with turning down the temperature and replacing light bulbs appeared to be motivating factors for respondents to commit to these actions.

3.4 Discussion

Based on the survey results of 373 employees across four companies, key observations emerged regarding the reasons employees chose to participate in the OTCC and follow through on their commitment to reduce personal GHGs. This section begins with a discussion of the key observations identified including highlights of the similarities and differences between companies. It ends with the conclusions drawn from the evaluation.

The evaluation results revealed similarities among survey respondents regarding the primary reasons for participating in the OTCC and following through on OLT tool commitments. There appear to be two common reasons why respondents followed through on their OLT tool commitments: the relative ease of implementing actions and the positive financial impacts associated with actions. Respondents from all four companies cited positive financial impacts as a primary reason for following through on commitments. Here is what participants had to say about switching to energy efficient light bulbs:

- "The energy efficient light bulbs, while more expensive to purchase, last three to five times longer than a regular light bulb and save energy. You actually save money in the long run."
- "I had decided to change the light bulbs because these light bulbs reduce my electricity bill and they also last longer. I save money because I don't have to replace the bulbs as often."
- "I found that by changing all the light bulbs to low energy ones I cut my overall power bill in half."

Other actions cited as having positive financial impacts⁷ included

- reducing highway driving speed
 - o "I have lower insurance now. I don't want speeding tickets."
 - o "The possibility of getting a ticket is my incentive to try to stick the speed limit."
 - "I see the difference at the pumps."
- turning down temperature in home
 - o "I noticed a savings on the heating bill from turning the furnace down."
 - "I was surprised to learn how much money I could save on my bills by lowering the temperature at night and when no one is in the house."

In addition to financial paybacks, respondents from three of the four companies also cited the relative ease of implementation as a reason for following through on commitments. In general, respondents were surprised at "how easy it was to meet the One Tonne Challenge." Changing from incandescent to compact fluorescent or halogen bulbs, a relatively easy, inexpensive action, realized the highest commitment and implementation rate among survey respondents from all four companies. The relative ease of implementing this action was reflected in respondent comments. For example, one participant was surprised to learn the One Tonne Challenge was as "simple as changing light bulbs." Another respondent wrote, "This one is a really simple task to do. When your old bulbs burn out, just replace them with more energy efficient ones."

If the results reflect an accurate picture of the OTCC as a whole, it can be concluded that individuals are primarily motivated to participate in the challenge when actions provide financial benefits and take little effort to implement. This could also explain why the implemented GHG reduction and energy cost savings were greater than the committed values (see Table 3, above). It is supposed that because actions largely ended up being easier to complete than anticipated people made additional behaviour changes they had not originally committed to.

The evaluation results also revealed cross-company similarities in the obstacles encountered that prevented people from following through on commitments. There appear to be four primary reasons for respondents not following through on their original commitments: lack of information, inconvenience, cost and lack of need.

Respondents from all four companies cited lack of information as a reason for not following through on commitments. For instance, it became clear the information provided to OTCC participants on green power was insufficient. Several respondents from each of the companies indicated that they were unsure what proportion of their electricity needs was met with green power.

In addition to lack of information, respondents from all four companies cited inconvenience as an obstacle to following through on commitments. It appears that people are less willing to make or fulfill commitments if they involve lifestyle changes. For example, location and work schedules were reported to be obstacles to changing commuting habits:

⁷ All the OLT tool actions, with the exception of purchasing green power, result in energy cost savings. The purchase of green power is an expense that is additional to an individual's regular conventional electricity costs. Therefore the green power action has negative energy cost savings.

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- "I drive regularly to work because of an extremely irregular work schedule. I cannot be dependent on the availability of public transit when I go to or leave work."
- "I have no choice but to drive right now. Calgary public transportation is insufficient in new neighbourhoods."

A third reason respondents noted as a barrier to implementing specific actions was cost. Some of the more expensive, larger actions realized the lowest commitment and implementation rates. Actions specifically cited as being too costly to implement included installing ENERGY STAR[®] windows and purchasing a more efficient furnace.

A fourth reason respondents noted as a barrier to implementing specific actions was a lack of need, i.e., decisions associated certain actions are not made very often. For instance, several respondents cited lack of need as the reason for not switching from incandescent to compact fluorescent or halogen light bulbs:

- "I have not needed to buy any new light bulbs yet because I had a few spare already in the house, but when I do need to buy them I will buy halogen."
- "Lights will be replaced as they burn out which none of them have yet."
- "As light bulbs burn out, I will replace them with the more energy efficient ones."

The lack of need to implement specific actions was particularly relevant to new homeowners and apartment/condominium dwellers because generally new homes do not require any major improvements. Here are some examples of what participants had to say about home-related actions:

- "My home is only five years old. At this point I have no plans to upgrade [insulation]."
- "My home is only eight years old; most appliances don't need replacing yet."
- "My house is only three years old so it's already got high quality windows and doors."
- "All the appliances in my new condominium are EnerGuide labeled."

3.5 Conclusions

1. Ease of implementation and annual cost savings associated with the actions are primary drivers for individuals to take action.

2. With high participation, relatively easy actions (e.g., replacing light bulbs) can add up to significant GHG reductions and energy cost savings.

3. To encourage individuals to participate in the OTCC, initial efforts should emphasize actions that take little effort to implement. Concurrently, bigger ticket items that require more effort (i.e., time and financial investment) such as replacing appliances or buying an R2000 home, could be promoted using the Pembina Institute's OLT tool (or equivalent).

4. Providing information on actions to reduce climate change — with respect to products, supplies and vendors — should be a key component of the OTCC because it provides individuals with the knowledge they need to act.

5. Individuals are motivated to commit to and follow through on actions that realize financial benefits. Information on incentives and rebates (e.g., the One Tonne Challenge "Incentives and Rebates" Web page) should be made readily available to individuals.

4 Conclusions and Recommendations

The pilot OTCC was successfully implemented through the efforts of the Climate Change Action Fund, Shell Canada, Petro-Canada, Suncor Energy, ConocoPhillips Canada and the Pembina Institute. A total of 1,335 individuals registered with OLT tool from the four participating companies, resulting in overall commitments to reduce 4,576 tonnes of GHG emissions.

The strategies employed by all four companies differed, which resulted in varying numbers of employee registrations to the OLT tool. The last two companies to launch their challenges benefited somewhat from the experiences of the first two companies that had previously launched the OTCC.

Successful strategies used by companies to secure commitment included a coordinated communication campaign, incentives for registration, random draws for registrants, targeted employee engagement sessions and development of internal champions.

Communication with employees was most effective using mass e-mails (when permitted). Information booths were not especially helpful to encourage employee registration with the OLT tool; however, they were useful to distribute information such as Government of Canada brochures and other GHG emission reduction resources. Other strategies used to engage employees in the OTCC included information (lunch-and-learn) sessions, electronic information (e-mails) and Web site resources.

The following key recommendations were derived from this project:

- 1. To successfully participate in an employee challenge to reduce GHGs, a dedicated internal team of employees from different areas of the organization should be involved in the initiative. This approach allows tasks to be distributed widely and increases opportunities to promote the program internally.
- 2. Senior management must be committed to the challenge to ensure that appropriate resources are allocated to the initiative, and it is promoted to all levels of the organization.
- 3. Organizations should encourage early employee participation in the challenge, as this increases the likelihood that individuals will later act on their commitment and take part in additional events. Early participation can be encouraged using incentives (e.g., early bird prize draws) and deadlines.
- 4. Once employees are engaged in the challenge, organizations should design and deliver a longer-term social marketing campaign to build and maintain motivation and social momentum over time.
- 5. Organizations should exercise opportunities to remind employees who have committed to reduce GHGs, using the OLT tool, to follow through with action. Organizations might choose to reinforce employee commitments with a thank-you note or other reminder of their specific actions.

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6. GHG reducing actions taken by individuals prior to an employee challenge should be recognized (e.g., the Pembina Institute modified the OLT tool to allow registrants to log their early actions).

The Pembina Institute is now expanding the One Tonne Corporate Challenge to other Canadian companies interested in getting their employees involved in reducing greenhouse gas emissions. For more information, please contact Ed Whittingham at edw@embina.org or 403-269-3344.

Appendix A Bicycle Article

Bicycle Commuting for the One Tonne Challenge

Springtime is just around the corner and One Tonne Challenge participants are gearing up for bicycle season. While some Shell employees ride their bikes throughout the winter, many others will soon pull their bikes out of the shed for the first time this year.

Sport Swap has three stores in Calgary and claims to have the largest selection of new and used sporting goods in Alberta. Currently, Shell's One Tonne Challenge registrants can take advantage of 10% off all Sport Swap cycling goods. Sport Swap's store hours are: Monday through Friday - 10am to 9pm, Saturday - 10am to 6pm, and Sunday - 10am to 5pm. For more information about Sport Swap, visit its website at, www.sportswapltd.com/index1.asp.

Do you bike to work?

According to Statistics Canada, 72% of the employed workforce living in Calgary drove to work in 2001 and 53% of Calgary's workers commuted between 5 km and 15 km (StatsCan, 2001a). Only 1.2% of workers in Alberta commuted by bicycle in 2001, a number on par with the national average (StatsCan, 2001b).

1996 2001 Number % Number % Canada 137.440 1.1 162,910 1.2 Newfoundland and Labrador 500 0.3 255 0.1 270 Prince Edward Island 0.5 260 0.4 2,270 2.455 0.7 Nova Scotia 0.6 New Brunswick 1.375 0.5 1.430 0.5 39,940 Ouebec 29,125 1.0 1.2 47,270 53,445 1.0 Ontario 1.0Manitoba 6,370 1.4 7.065 1.4 Saskatchewan 5,120 1.4 6,210 1.6 13,070 17,795 1.2 Alberta 1.1 31,245 British Columbia 1.9 33,635 2.0335 300 Yukon Territory 2.1 2.0 Northwest Territories 295 1.6 295 1.6 Nunavut 10 0.1 10 0.1

Workers bicycling to work, Canada, provinces and territories, 1996 and 2001 (StatsCan, 2001)

Canadian women were more likely to walk to work than men in 2001; however, men who cycled to work outnumbered women. Statistics Canada also found that the likelihood of cycling to work declined steadily as age increased (StatsCan, 2001b).

The country with the highest number of cyclists per capita is the Netherlands. One of the curious facts of the Netherlands: nearly 85% of the population own at least one bike, and they use it regularly, often daily.

Useful tips and information sources

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If you plan on putting your bike on the street before April 6, remember to check your tire pressure. An under inflated tire is often the cause of flat tires, as it is easier for small rocks or pieces of glass to get picked up and puncture an inner tube. An air pressure gauge should be used to ensure that tire pressure is correct. Don't rely on just squeezing your tires.

If you are looking for an on-line resource for cycling information, the Edmonton Bicycle Commuters (EBC) have a great website, which provides valuable information to cyclists of all ages and abilities. It can be found at, <u>http://edmontonbicyclecommuters.ca/</u>. Have a look at their site if you would like information on: buying a bike for a child, tire pressure, tire selection, basic bicycle maintenance, or even rebuilding a bike from scratch.

The EBC suggests four great reasons to hit the streets on two wheels instead of four:

When you ride, you use your body, as you should; that's good!

When you ride, you strengthen your immune system and laugh at illness; that's good!

When you ride, you laugh at the price of gas; that's good for your wallet!

When you ride, you make the world a better place with every pedal stroke; that's good too!

They also provide the five following tips for safe cycling:

Always keep you eyes on parked cars look for the driver. If there is a driver expect him/her to fling open the door or to pull out in front of you without warning. This is not a good thing!

If you are riding at a good clip, watch out for oncoming traffic. Drivers, turning left, often assume that cyclists are slow and will turn right in front of you.

Never ride on the sidewalk. More collisions occur when bikes come off the sidewalk to cross a street or alley. No one expects you to be there.

Many people ride at night without proper lights. This is a sure way to get into trouble Do not rely on reflectors alone. You need lights \$20.00 will set you up with decent front and rear LEDs (Light Emitting Diodes) that signal your presence at a considerable distance.

The golden rule is to ASSUME that you are invisible. Never assume you will be given right of way as if you were driving a car. Motorists will often look right through you (EBC, 2004).

References

Edmonton Bicycle Commuters. 2004. Available on-line at: http://edmontonbicyclecommuters.ca/.

Statistics Canada. 2001a. Calgary. Available on-line at: http://www12.statcan.ca/english/census01/products/analytic/companion/pow/ftorbike.cfm.

Statistics Canada. 2001b. Getting to work on foot or bicycle. Available on-line at: http://www12.statcan.ca/english/census01/products/analytic/companion/pow/calgary.cfm.

Bike Behind the Dikes: Inspiration and Information for cyclists in the Netherlands. http://holland.cyclingaroundtheworld.nl/.

Appendix B Information Session Topics

1. Home Energy Audit

Stephen Farrell of Verdatech Inc., an accredited Alberta EnerGuide auditing company, delivered a presentation on the EnerGuide for Houses Program. He also provided practical tips to reduce energy use in the home.

Website: http://verdatech-inc.com/

2. Alberta Furnace Rebate Program

Climate Change Central delivered a presentation on the Alberta Furnace Rebate Program and Energy Star Federal Program.

Website: http://www.climatechangecentral.com/

3. Energy and Water Efficiency

Representatives of the City of Calgary delivered a presentation on energy and water efficiency. Attendees were offered information from a six-part series of fact sheets entitled "Climate Change and You." Specific topics covered included ways to reduce household energy consumption and GHGs, and to minimize water consumption (e.g., steps to reduce water use in home).

Website: http://www.calgary.ca/

4. Bicycle and Inline Skate Commuting

Sport Swap Ltd., a Calgary bicycling and inline skating retail outlet, delivered a presentation on bicycle and inline skate commuting to work. The presentation also included bicycle and inline skating safety and maintenance, and Calgary road bylaws. Attendees were given information about the OTCC and provided with purchase discounts from Sport Swap.

Website: http://www.sportswapltd.com/

5. Alternative Transportation—Commuter Challenge and Carpool.ca

Short presentations were delivered on the Commuter Challenge and Carpool.ca.

Websites: http://www.commuterchallenge.ca/

http://carpool.ca/

Appendix C Sample Desk Drop



Appendix D Sample Personal Commitment Card

FRONT



You have committed to taking the following actions:

- Most of the lights in my home are equipped with standard light bulbs. I will gradually replace them all with compact fluorescent or halogen bulbs.
- I often idle my vehicle for more than 30 seconds, either before leaving home or when picking up/dropping off passengers. From now on I will not idle my vehicle for more than 10 seconds, except in traffic.
- I often drive at or above the maximum posted speed on highways. I will reduce my normal cruising speed when driving by 5 km/h.
- I currently use two refrigerators. I will stop using the older of the two, only refrigerating items that really need it.
- I do not typically take my vehicle in for regular maintenance, or check the tire pressure every month. From now on I will do this regularly.
- I am planning to replace 1 of the following appliances: refrigerator, freezer, electric clothes dryer. I will buy (a) new appliance(s) carrying the ENERGY STAR label or with an EnerGuide label showing close-to-minimum energy consumption.
 - Total Energy Savings: \$415 per year Total Emissions Reduction: 2.86 tonnes

Over the next year we encourage you to take the necessary steps to meeting your personal greenhouse gas emission reduction targets. You will find that small changes in your lifestyle and home purchasing decisions will quickly add up to big savings in both greenhouse gas emissions and money.



BACK