Sobeys Inc.

Greenhouse gas (GHG) assertion
As at December 31, 2014

Together with Independent Verifier's Report

MALLETTE

Mallette S.E.N.C.R.L.

200-3075 chemin des Quatre-Bourgeois
Québec QC G1W 5C4

Téléphone 418 653-4431
Télécopie 418 656-0080
Courriel info.québec@mallette.ca

VERIFICATION NOTICE ON THE DECLARATION OF GHG EMISSIONS REDUCTIONS

Mr. Pierre Saint-Laurent
Vice-president, retail operations, Multi-Banner branch
Sobeys
11281 Albert-Hudon Boulevard
Montréal QC H1G 3J5

Dear Sir:

We have verified the accompanying greenhouse gas (GHG) assertion of **SOBEYS INC.** for the twelve-month period ended December 31, 2014.

Sobeys Inc.

With more than 100 years in the food business and 97,000 employees and franchise affiliates, Sobeys Inc. is a grocery retailer in Canada, wholly-owned subsidiary of Empire Company Limited, headquartered in Stellarton, Nova Scotia. Sobeys Inc. has more than 1,300 stores in ten provinces with retail banners that include Sobeys, IGA, Foodland, FreshCo, Price Chopper and Thrifty Foods. The Company also operates Lawtons Drug stores in Atlantic Canada.

The Emissions Reduction Project

Refrigeration systems using synthetic refrigerants are commonly used in Canadian supermarkets, and generally use synthetic refrigerant gases such as HCFC-22, R507, or variables thereof. Most refrigeration systems in Canada are direct expansion systems (DX), which circulate the refrigerant gas from the main reservoir located in the mechanical room to the various freezing cases and refrigerators of the supermarkets, in long piping circuits. In the process, important quantities of refrigerant gases are leaked through the piping joints and valves, which leads to important GHG emissions since HCFCs and HFCs have relatively high Global Warming Potentials (GWPs).

The project consists in a Bundled Project that reduces GHG emissions through the substitution of synthetic refrigerants in refrigeration systems in a series of supermarkets owned by or affiliated to Sobeys. The new technologies implemented in the proposed Bundled Project are designed to distribute cold and heat in the supermarkets through heat exchange loops, using a heat transfer fluid that is environmentally friendly rather than synthetic refrigerants that are powerful greenhouse gases. This project is geared towards the voluntary carbon market and is consistent with the ISO 14064-2 standard.

The project is located in 50 Sobeys stores in Quebec that are listed in the Annex I of the attached quantification report.

The Quantification Report

The quantification report was prepared by EcoRessources Carbone, in accordance with ISO 14064-2 "Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancement (2006)". The quantification methodology is based on estimated leakage rates from refrigerant loads in the baseline scenario and the project.

The approach that was used for the quantification of the GHG emission reductions was one of comparing the global warming potentials of refrigerants used for the project to those used for the baseline scenario. The quantifier determined the GHG emissions by multiplying appropriate global warming potentials and a leakage factor by the refrigerant loads.

The global warming potentials chosen are based on the *International Panel on Climate Change Fourth Assessment Report: Climate Change 2007*. The leakage rate is based on historical data from Sobeys Inc. and was verified with an industry average from the *United States Environmental Protection Agency*.

Management's Responsibility for the GHG Assertion

Management is responsible for the preparation of this GHG assertion in accordance with the ISO 14064-2 "Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancement (2006)", and for such internal control as management determines is necessary to enable the preparation of a GHG assertion that is free from material misstatement, whether due to fraud or error.

Verifier's Procedures and Responsibility

Our responsibility is to express an opinion on the GHG assertion based on our verification. We conducted our verification in accordance with Canadian generally accepted auditing standards and in accordance with ISO 14064-3 "*Specification with guidance for the validation and verification of greenhouse gas assertions"*. Those standards require that we comply with ethical requirements and plan and perform the verification to obtain reasonable assurance that the GHG assertion is free from material misstatement. Before undertaking this assignment, we ensured there were no conflicts of interest that could impair our ability of express an opinion. We also ensured we had the skills, competencies and appropriate training to perform the specific assignment. The work was performed by ISO 14064-3 trained professionals. Training was provided by the Canadian Standards Association. It was agreed with Sobeys' representative that a reasonable assurance level of opinion would be issued and we planned and executed our work accordingly. Consequently, our verification included those procedures we considered necessary in the circumstances to obtain a reasonable basis for our opinion.

A verification with reasonable assurance level of opinion involves performing procedures to obtain verification evidence about data and information provided in the GHG assertion. The procedures selected depend on the verifier's judgment, including the assessment of the risks of material misstatement in the GHG assertion, whether due to fraud or error. In making those risk assessments, the verifier considers internal control relevant to the Company's preparation of the GHG assertion in order to design verification procedures that are appropriate in the circumstances, but not for the purpose of expressing an opinion on the effectiveness of the Company's internal control. A verification also includes evaluating the appropriateness of calculation methods used and the reasonableness of estimates made by management, as well as evaluating the overall presentation of the GHG assertion.

We believe that the verification evidence we have obtained is sufficient and appropriate to provide a basis for our verification opinion.

Opinion

In our opinion:

1. The GHG assertion of Sobeys Inc. for the twelve-month period ended December 31, 2014 was prepared, in all material respects, in accordance with the ISO 14064-2 "*Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancement (2006)"*, and the principles of relevance, completeness, consistency, accuracy transparency and conservativeness have been respected;

2. The approach and methodology used for the quantification are appropriate;

3. The baseline scenario is appropriate;

4. Sobeys' data controls management system is appropriate;

5. The GHG emission reductions presented in the quantification report entitled "Substitution of synthetic refrigerants by CO_2 and glycol in refrigeration systems in a series of supermarkets owned by or affiliated to Sobeys, for the year 2014" and dated July 1th, 2015, are, in all material respects, fairly stated at 21 322 tCO_2e;

6. The quantification report is free of material misstatements and it is an appropriate representation of the data and GHG information of Sobeys Inc.;

7. The quantification report has a low to moderate degree of uncertainty and the materiality threshold has not been reached or exceeded.

Denis Tremblay[1], CPA auditor, CA
Mallette L.L.P.

Québec, Québec, Canada
August 14th, 2015

[1] CPA auditor, CA, public accountancy permit No. A114832

ISO 14064-2 GHG REPORT

Reductions Registry of the Canadian Standards Association (CSA)

"Substitution of synthetic refrigerants by CO_2 and glycol in refrigeration systems in a series of supermarkets owned by or affiliated to Sobeys, for the year 2014"

By Sobeys

July 1st, 2015

Contents

List of tables

List of figures

1. ISO 14064-2 Principles

1.1 Relevance

All GHG Sources, GHG Sinks, GHG Reservoirs (GHG SSRs) that are appropriate and are consistent with the project have been considered, identified and quantified in section 4. In the same section, justification has been provided in the cases where GHG source, sink or reservoir was deemed irrelevant.

1.2 Completeness

In section 4, all relevant GHG SSRs have been properly quantified. The quantification methodology is detailed in section 5 and a table summarizing the quantification is available in Annex II. Proper justification and rationale has been provided for all relevant and irrelevant GHG emissions in section 4.1, 4.2 and 4.3.

1.3 Consistency

The baseline and project scenarios have demonstrated equivalent level of service. Indeed, the project and baseline emissions have both been quantified for the unique refrigeration service in each individual supermarket included in the quantification.

1.4 Accuracy

Bias and uncertainties on estimations have been reduced as far as practical. For instance, assuming that refrigeration systems of a given manufacturer are comparable among each other, the load-surface factors have been calculated per manufacturer, thus reducing the uncertainty related to the variability of refrigeration systems. Another example is the leak rate, which has been calculated based on historical (for baseline emissions) and measured (for project emissions) data instead of literature average (see section 5).

1.5 Transparency

The project proponent has disclosed all sources of information, calculations, data, and assumptions in the present GHG Report as well as the GHG assertion in section 2.9. The project documentation includes references to data sources for each parameter and assumption.

1.6 Conservativeness

The project uses conservative assumptions and values to ensure that GHG emission reductions are not over-estimated. For instance, the quantification methodology is based on an average historical leak rate at Sobeys facilities (21%), which is lower than the literature values (see section 5). Besides, the Project's refrigeration system real leak rates have been measured for the year 2014 (September 2013 to August 2014) and the result has been used in the Project's emissions calculation.

2. Project Description

2.1 Project title

Substitution of synthetic refrigerants by CO_2 and glycol in refrigeration systems in a series of supermarkets owned by or affiliated to Sobeys.

2.2 Project's purpose(s) and objective(s)

The proposed project consists in a Bundled Project that reduces GHG emissions through the substitution of synthetic refrigerants (HCFCs and HFCs) in refrigeration systems in a series of supermarkets owned by or affiliated to Sobeys. This Bundled Project is geared towards the voluntary carbon market and is consistent with the ISO 14064-2 standard (see section 1).

Refrigeration systems using synthetic refrigerants are commonly used in Canadian supermarkets, and generally use synthetic refrigerant gases such as HCFC-22, R507, or variables thereof. Most refrigeration systems in Canada are direct expansion systems (DX), which circulate the refrigerant gas from the main reservoir located in the mechanical room to the various freezing cases and refrigerators of the supermarkets, in long piping circuits. In the process, important quantities of refrigerant gases are leaked through the piping joints and valves. It is estimated that the average supermarket cooling system in North America looses from 10% to 30% of its cooling agent per year[2], which leads to important GHG emissions since HCFCs and HFCs have relatively high Global Warming Potentials (GWPs)[3].

The purpose of this Bundled Project is to substitute the use of R507[4], HCFC-22, HFC-134a, R404a[5] or R407C[6], in refrigerant and heating systems by installing new systems that either/or:

- Use carbon dioxide (CO_2) as a cooling agent throughout medium and low temperature (MT and LT) refrigeration systems, hereby replacing the need to use any synthetic refrigerants in refrigeration systems (Project Type I);
- Substitute synthetic refrigerants as a heat transfer agent used in the heat rejection circuit with propylene glycol, to recover and upgrade the heat rejected by the entire refrigeration system to completely or partially meet the building's heating requirements (Project Type II);
- Use propylene glycol on the "hot side" of the condensation stage heat exchanger as opposed to using synthetic refrigerants, whereby the propylene glycol is recirculated into piping circuits to the cases, (Project Type III).

Replacement of cooling and heating systems occurs in several of Sobeys' associated outlets in the Province of Quebec, namely existing IGA and IGA Extra supermarkets. In addition, Sobeys is supporting the installation of these new generation refrigeration systems in several new stores across the province.

[2] "CO_2 as a Refrigerant in a Sobeys Supermarket". CanmetENERGY case study. Available at: http://canmetenergy.nrcan.gc.ca
[3] http://www.ipcc.ch/publications_and_data/ar4/wg1/en/ch2s2-10-2.html
[4] R507 is a blend of HFC-125 (R125) and HFC-143a (R143a)
[5] R404a is a blend of HFC-134a (R134a), HFC-125 (R125) and HFC-143a (R143a)
[6] R407C is a blend of HFC-134a (R134a), HFC-125 (R125) and HFC-32 (R32)

By promoting the adoption of highly efficient refrigeration systems that use much smaller quantities of synthetic refrigerants or with systems that do not use any synthetic refrigerants at all, Sobeys contributes significantly to reducing GHG emissions that commonly arise from the operation of cooling and heating systems in the food retailing business. Hence, Sobeys demonstrates leadership with going above and beyond the usual business practice.

2.3 Expected lifetime of the project

The project is expected to last for a period corresponding to the expected lifetime of each individual system, which is approximately 25 years.

2.4 Type of greenhouse gas emission reduction or removal project

The Bundled Project aims at reducing of R507, HCFC-22, HFC-134a, R404a or R407C, which have the following Global Warming Potential (GWP):

TABLE 1. GWP OF SYNTHETIC REFRIGERANT COMMONLY USED AT SOBEYS

Synthetic refrigerant	GWP	Unit
R507	3985	$tCO_2e/tR507$
HCFC-22	1810	$tCO_2e/tR22$
HFC-134a	1430	$tCO_2e/tR134a$
R404a	3922	$tCO_2e/tR404a$
R407C	1774	$tCO_2e/tR407C$

2.5 Legal land description of the project or the unique latitude and longitude

Annex 1 includes the unique location for each Project Unit (supermarket), including unit name, address and postal code.

Sobeys has clear contractual arrangements will all units included in this Bundled Project granting Sobeys full ownership over the emissions reductions they may generate.

2.6 Conditions prior to project initiation

There are three distinct baseline scenarios applicable to the activities of this Programme, which prevailed prior to the project implementation.

TABLE 2. BASELINE AND PROJECT SCENARIOS

Project Type	Baseline Scenario	Baseline fluid	Project Scenario	Replacement fluid
Project Type I	The refrigerant loops connected to the refrigeration cases throughout the supermarkets needed to be refilled regularly with synthetic gases due to leaks, and required Sobeys to purchase large quantities of gas	HCFC-22 R507	The synthetic gas in refrigerant loops was replaced with CO_2 or glycol, reducing the need to purchase HCFC-22 or R507.	CO_2 or Propylene Glycol
Project Type II	The heat rejection loops used to recycle and channel heat through the supermarket needed to be refilled regularly with synthetic gas due to gas leaks, and required Sobeys to purchase large quantity of gas	HCFC-22 R507 HFC-134a R404a	The synthetic gas in heat rejection loops was replaced with propylene glycol, reducing the need to purchase R507, HCFC-22, HFC-134a or R404a.	Propylene Glycol
Project Type III	The condensation loops connected to refrigerated display case in the supermarket needed to be refilled regularly with synthetic gases due to leaks, and required Sobeys to purchase large quantity of gas	HCFC-22	The synthetic gas in conventional condenser was replaced with fluid cooler - propylene glycol, reducing the need to purchase HCFC-22.	Propylene Glycol

2.7 Description of how the project will achieve GHG emission reductions or removal enhancements

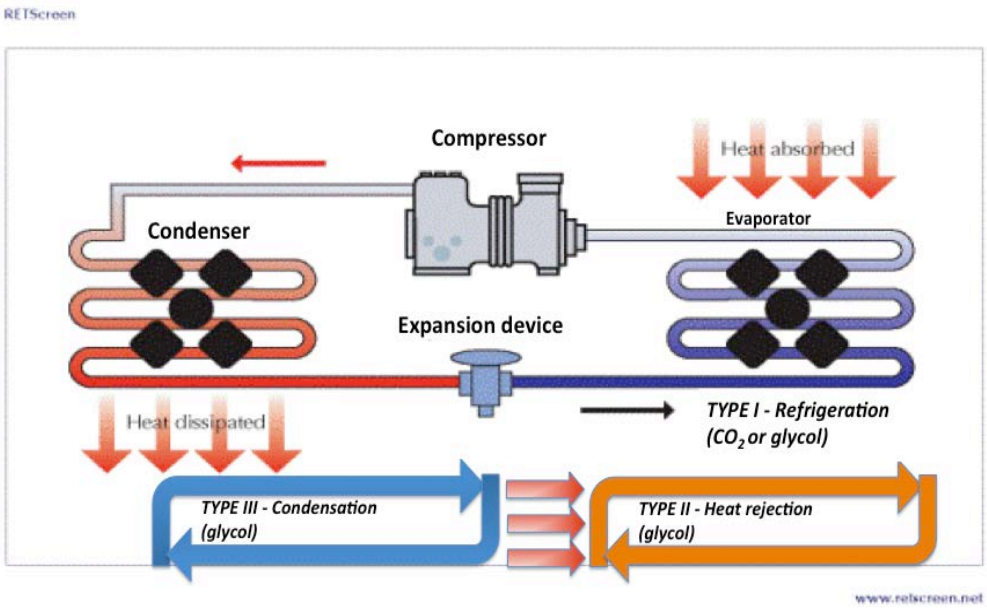
The Bundled Project will achieve GHG reductions by converting existing refrigeration and heating systems to reduce significantly or completely eliminate the use for synthetic refrigerants, in several food retail stores across Quebec. New Sobeys supermarkets will be equipped with similar, highly efficient refrigeration and heating technologies.

2.8 Project technologies, products, services and the expected level of activity

The new technologies implemented in the proposed Bundled Project are designed to distribute cold and heat in the supermarkets through heat exchange loops, using a heat transfer fluid that is environmentally friendly (glycol or CO_2) rather than synthetic refrigerants that are powerful greenhouse gases. Furthermore, the upgraded refrigeration system helps to confine remaining synthetic refrigerants to the mechanical room, thereby minimizing leaks to the atmosphere. Nevertheless, the leak rate is assumed to be the same after the implementation of the project, which enhances the conservativeness of the emission reduction quantification[7].

Depending on the type of technology and which portion of the refrigeration system is improved, there are three types of project units in the Bundled Project. They are illustrated in Figure I, as follows:

FIGURE 1. DIAGRAM OF THE THREE PROJECT TYPES



The units identified as Type I (purple and red loop) use CO_2 or glycol as the refrigeration fluid, as opposed to the business-as-usual synthetic refrigerants. The new refrigeration technology is used in both low and medium temperature refrigeration applications. Compared to conventional grocery refrigeration systems, CO_2/glycol refrigeration systems use approximately 50% less refrigerant charge (volume of refrigerant used in the system), have materially lower maintenance costs and provide better temperature control.

[7] Please refer to section 4 for a detailed description of the quantification.

The units identified as Type II (orange loop) use propylene glycol instead of synthetic refrigerants in the heat rejection circuit that recovers the heat at the end of the system. The heat is used either for heating purposes and/or for defrosting. The HT level of the refrigeration system acts as a heat pump and recovers the heat rejected by the entire system to fill - totally or partly - the building's heating needs.

The units identified as Type III (blue loop) use propylene glycol instead of synthetic refrigerants in the heat transfer interface that cools down the refrigeration fluid as needed at the condensation step. The technology implemented consists in a fluid cooler using propylene glycol that allows a more efficient cooling than with conventional condenser.

Some projects may include more than one type of technological improvements. As an example, most of the projects Type I implemented a substitution to glycol in the heat rejection circuit.

The following description[8] is for a system installed by Sobeys for this Bundled Project in the IGA supermarket of St-Félix-de-Valois. It includes the three project types in one system.

The system is an HFC/CO_2 cascade system with three compression and temperature levels: Low Temperature (LT), Medium Temperature (MT) and High Temperature (HT).

- The LT level uses CO_2 as a refrigerant that flows from the mechanical room to the freezers and frozen product display cases at a temperature of 30°C.
- The MT level uses R507, a refrigerant from the HFC family, to cool a secondary fluid loop (propylene glycol solution) that supplies refrigeration at 4°C to the refrigerators and refrigerated product display cases, and cools the LT level condenser.
- The HT level uses R407C, a refrigerant from the HFC family, to cool the MT level condenser through a propylene glycol loop.

The cascade system meets the requirements of a refrigeration load of 80 kW for frozen products and of 293 kW for refrigerated products. The total synthetic refrigerant charge of 306 lbs is contained in the mechanical room. It represents approximately 10% of the refrigerant charge required by conventional direct expansion (DX) systems found in most supermarkets. For a portion of the refrigerated display cases, defrosting is done through the recirculation of propylene glycol without any additional energy input. The length of the defrost cycle is limited by a predetermined temperature setting for the propylene glycol.

Frozen product display cases are defrosted by the discharge gases from the CO_2 compressors. During defrost period, the condensing temperature of the LT system decreases to slightly above 0°C while normally it is around 7°C.

These two defrosting methods are very innovative, particularly the use of CO_2 to defrost the low temperature display cases.

The HT level of the refrigeration system produces a heat pump effect where the heat rejected by the system is recovered and upgraded to completely or partially meet the building's heating requirements. A total of 419 kW is recovered and distributed to the following applications:

[8] A exhaustive description of the project is available at Natural Resources Canada at: http://canmetenergy-canmetenergie.nrcan-rncan.gc.ca

- 175 kW roof top air handling unit
- Two air heating units with a total capacity of 110 kW to heat the warehouse and the receiving dock.
- Two air heating units with a total capacity of 134 kW to heat the entrance and the display case area.

At the end of the cycle, a fluid cooler discharges the surplus heat of the refrigeration system out of the supermarket.

2.9 Total GHG emission reductions and removal enhancements, stated in tonnes of CO_2e, having occurred from the GHG project (GHG Assertion)

TABLE 3. TOTAL EMISSIONS REDUCTIONS OF THE BUNDLE PROJECT

Vintage year	Baseline and Project Emissions	PFC (tCO_2e)	HFC (tCO_2e)	SF_6 (tCO_2e)	CO_2 (tCO_2e)	CH_4 (tCO_2e)	N_2O (tCO_2e)	HCFC (tCO_2e)	ER = BE - PE
2014	BE	0	19,535	0	0	0	0	1,991	21,322
	PE	0	196	0	8	0	0	0	

2.10 Identification of risks

There are no specific risks associated to the types of projects implemented as part of this Bundled Project in comparison to the pre-project situation. If anything, the proposed Bundled Project reduces environmental risks that can lead to the depletion of ozone layer caused by HCFCs and HFCs emissions.

2.11 Roles and Responsibilities

Organization:	Sobeys
Street/P.O.Box:	Sobeys, 11281, boul. Albert-Hudon, Montréal-Nord, Qc, H1G 3J5, Canada
E-Mail:	pierre.saintlaurent@sobeys.com
URL:	www.sobeys.com
Represented by:	Pierre Saint-Laurent
Title:	Vice-président Principal, Développement des affaires et secteur Multisurfaces
Role/Responsibility:	Project Proponent and responsible for monitoring

Organization:	ÉcoRessources Inc.
Street/P.O.Box:	825 Raoul-Jobin, Québec (QC), Canada, G1N 1S6
E-Mail:	mathieu.dumas@ecoressources.com
URL:	www.ecoressources.com/carbone
Represented by:	Mathieu Dumas
Title:	Senior Project Manager
Role/Responsibility:	Technical consultants responsible for developing the GHG Report

Organization:	Mallette
Street/P.O.Box:	1150, boulevard Saint-Félicien Bureau 103 Saint-Félicien, QC G8K 2W5 Canada
E-Mail:	Denis.tremblay@mallette.ca
URL:	http://www.mallette.ca
Represented by:	Denis Tremblay
Title:	Partner
Role/Responsibility:	Verification

An independent third-party, namely Mallette, was responsible for the verification of the present GHG report. The verification was performed by professionals, which are trained by the Canadian Standard Association according to ISO 14064-3. This standard requires a reasonable or limited assurance about whether the emission reductions assertion is fairly stated, is free of material misstatements, is an appropriate representation of the data and GHG information and the materiality threshold has not been reached or exceeded. In this case, it was agreed between Sobeys and Mallette that a reasonable assurance level of opinion would be issued and the verification work was executed accordingly.

2.12 Any information relevant for the eligibility of the GHG project under a GHG program and quantification of emission reductions

The Bundled Project and each individual project it comprises are consistent with the ISO 14064-2 requirements and the requirements of the Reductions Registry. The Project Proponent has not attempted to qualify the proposed Bundled Project under any GHG program, nor has it assessed its eligibility.

2.13 Summary environmental impact assessment

It is not required to undertake any kind of environmental impact assessments to implement any of the three project types targeted by this Bundled Project. However, those systems that still contain a certain quantity of HFCs or HCFC are required to obtain a permit from the *Régie du Bâtiment du Québec* prior to being constructed.

The different project types targeted by this Bundled Project generate different environmental benefits. In addition to reducing the use of synthetic refrigerants, harmful gases to the ozone layer, the project also reduces GHG emissions considerably given the high GWP of synthetic refrigerants. Finally, by using CO_2 or glycol as opposed to synthetic refrigerants, Sobeys indirectly reduces its energy consumption because the production of CO_2 and glycol requires less energy than synthetic refrigerants.

2.14 Relevant outcomes from stakeholder consultations and mechanisms for on-going communication.

No stakeholder consultation was required to undertake the proposed Bundled Project.

2.15 Detailed chronological plan

A detailed list of projects, along with individual start date, is provided in Annex II of this document.

3. Selection and Justification of the Baseline Scenario

In Canada, most refrigeration systems in supermarkets are direct expansion (DX) systems that use large quantities of synthetic refrigerant. The refrigerant circulates under pressure from the mechanical room to the refrigerated display cases through kilometres of piping that contain hundreds of brazed joints. These systems are a source of major refrigerant leaks (between 10% and 30% of the load per year), which are powerful greenhouse gases. Most supermarkets still use HCFC-22 as their main heat and cooling fluid, although this is starting to change given that the production of HCFC-22 is being phased out with the Montreal Protocol. Still, some older supermarkets continue to use HFCF-22, given that changing heat and cooling fluid requires substantial technological changes.

Aware that stocks of HCFC-22 will eventually become scarce, Sobeys voluntarily started adapting some of its existing systems in the mid-2000s to use HFCs, which were developed in the context of the Protocol of Montreal to replace CFCs and HCFCs that were damaging the ozone layer. This became the standard practice at Sobeys prior to the implementation of this Bundled Project. In the last years, the most commonly used HFC by Sobeys was the R507 because of its physical properties. It is the most stable of the HFCs: pressure is much easier to control in the refrigerant system than with other gas such as R407C, R134, etc. It can be seen in the Type II projects from the "Project Data" sheet that systems that do not use HCFC-22 are mainly using R507.

In the calculation spreadsheet, if there was a mention of gas other than CO_2 and glycol in the "Project Data" sheet, this gas was used as the baseline gas. If there wasn't any other specified gas, R507 was used since it is the most common. If one or more gas was specified, the one with the lowest GWP was used (conservative approach).

Given the common practice in the industry and Sobeys's own business-as-usual practices, the following alternative baseline scenarios can be considered:

TABLE 4. BARRIERS FACED BY EACH ALTERNATIVE BASELINE SCENARIO

Barrier	Alternative 1: Refrigeration systems that use synthetic refrigerants	Alternative 2: Refrigeration systems that strictly use CO_2 as refrigerant agent	Alternative 3: A mix of the three project types presented in this Bundled Project (the project situation without the carbon revenues)
Financial Economic Barrier Discussions	This alternative does not face any specific financial or economic barrier. This was the common industry practice at Sobeys until it started implementing this Bundled Project. This alternative is much less expansive that retrofitting the existing systems to use CO_2 and/or glycol.	This alternative faces important financial and economical barriers. The costs of CO_2 only systems is high in comparison to more common systems that strictly use HCFCs or HFCs. Sobeys had to invest significant amounts of money into research and development to come up with adapted systems that strictly run on CO_2. In addition, each system bears an additional cost of approximately 146,000$ above business-as-usual, excluding the additional cost on the refrigeration system. Given that there are no clear short-term financial gains from switching, the economic barrier for the widespread adoption of these systems is important.	This alternative faces important financial and economical barriers. Substituting HCFC-22 or HFCs with propylene glycol requires technological modifications that increase Sobeys' costs to approximately 45,000$ per system. Given that there are no financial or economic benefits associated to it, this alternative faces an important economic barrier. Adopting systems that strictly run on CO_2 bears even more prohibitive costs, as discussed for Alternative 2.
Technology Operation, Maintenance and Disposal Barrier Discussions	This alternative does not face any technological or maintenance barrier. Synthetic gases were the common industry practices at Sobeys until it started implementing this Bundled Project. Sobeys therefore knows this technological application well, and could have continued using it.	This alternative faces important technological barriers. Notably, the piping systems typically used for refrigeration systems had to be redesigned to be sufficiently compact and light to accommodate the specific supermarket where they were being installed. The first systems implemented by Sobeys that strictly run on CO_2 (or almost entirely) did not reach the desired levels of efficiency. Several improvements had to be made to improve energy efficiency and reduce the quantity of gas needed. The first systems were either oversized or were submitted to undesirable conditions, which	This alternative faces important technological barriers. Substituting HCFC-22 or HFCs with propylene glycol requires technological modifications that require training of personnel, technological modifications in the first years of adoption, etc. In addition, CO_2-only systems face significant technological barriers, as described in the discussion on Alternative 2.

Barrier	Alternative 1: Refrigeration systems that use synthetic refrigerants	Alternative 2: Refrigeration systems that strictly use CO_2 as refrigerant agent	Alternative 3: A mix of the three project types presented in this Bundled Project (the project situation without the carbon revenues)
		affected pressure balance, leading Sobeys to further rethink the design and operational parameters of its systems. Sobeys is now using the 6th generation of systems in its stores. Finally, CO_2-only systems are still not well known at the industrial level, and their performance can vary significantly under different pressurized situations. If improperly managed, explosions may occur.	
Prevailing Practice Discussion	This alternative does not face any prevailing practice barrier. Indeed, this was the prevailing practice at Sobeys until the implementation of the Bundled Project. Most competitors in the industry still use synthetic refrigerants.	This alternative faces an important prevailing practice barrier. Although it is becoming increasingly popular in Europe, CO_2 is still scarcely used in refrigeration systems in Canada and not much is known about it. A few facilities have been using CO_2 as a secondary fluid since 2008, but Sobeys Québec inc. is pioneering its use as a primary refrigerant.	This alternative faces an important prevailing practice barrier. Adapting these systems involved a business culture shift for Sobeys, requiring the project leading staff to build a strong case to convince management of the necessity of the project. Adopting these systems did not only involve a change for Sobeys, but was also a clear shift for standard business practices.

According to Table 4, it is clear that Alternative 1 (the status quo) is the most plausible baseline scenario, as it does not face any barrier. This scenario does not face any economical or financial barrier, because it was Sobeys' historical practices up until the implementation of the proposed Bundled Project. Sobeys knows well the capital and operational costs linked to these types of systems, and therefore can better evaluate and control their financial viability prior to implementing them. On the other hand, choosing alternative systems (alternative 2 and 3) increases Sobeys' capital costs from 45,000$ to 146,000$ (plus an approximate 11% increased on the cost of the refrigeration system) in comparison with business-as-usual systems, which represents an important barrier given that there are no short term benefits or legal requirement to do so.

Given that Alternative 1 (the status quo) faces the least significant barriers of all three alternatives, it is considered the most appropriate baseline scenario of the three project types targeted by this proposed Bundled Project.

4. Inventory of sources, sinks and Reservoirs (SSRs) for the project and baseline

4.1 Baseline SSRs

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
Upstream during project operation					
B1	Transportation of synthetic refrigerant	Transportation of the refrigeration agent to the site	Related	No	Emissions from transportation are less than 0.001% of total emissions
Onsite during project operation					
B2	Consumption (and leaks) of R507	Consumption of the baseline refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is the main source of emissions
B3	Consumption (and leaks) of HCFC-22	Consumption of the baseline refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is the main source of emissions
B4	Consumption (and leaks) of R407C	Consumption of the baseline refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is the main source of emissions
B5	Consumption (and leaks) of R404A	Consumption of the baseline refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is the main source of emissions
B6	Consumption (and leaks) of HFC-134a	Consumption of the baseline refrigerant gas, both at the start of the project as well as to refill systems when	Controlled	Yes	This is the main source of emissions

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
		leaks occur			
B7	Electricity usage from the operation of the facility	Consumption of electricity to operate the refrigerant systems. This may include pumps, heat exchangers, air handling units, fluid coolers, etc.	Controlled	No	Given the low emissions grid factor in the region where the project is implemented (Quebec), this source of emissions is considered to be negligible.

4.2 Project SSRs

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
Upstream during project operation					
P1	Transportation of CO_2 and propylene glycol	Transportation of the refrigeration agent and conductor fluid to the site	Related	No	Emissions from transportation are less than 0.001% of total emissions
P2	Emissions of residual refrigerant gas from replaced refrigerating systems	Refrigerant gas in baseline systems could be emitted when replaced by new project refrigerating systems	Related	No	Refrigerant gas were either collected by the manufacturer or used in other Sobeys' refrigerating systems
Onsite during project operation					
P3	Consumption (or leaks) of CO_2	Consumption of the project refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is the main source of project emissions
P4	Consumption (and leaks) of R507	Consumption of the project refrigerant gas, both at the start of the project as well as to refill	Controlled	Yes	This is a secondary source of project emissions

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
		systems when leaks occur			
P5	Consumption (and leaks) of R407C	Consumption of the project refrigerant gas, both at the start of the project as well as to refill systems when leaks occur	Controlled	Yes	This is a secondary source of project emissions
P6	Electricity usage from the operation of the facility	Consumption of electricity to operate the refrigerant systems. This may include pumps, heat exchangers, air handling units, fluid coolers, etc.	Controlled	No	Given the low emissions grid factor in the region where the project is implemented (Quebec), this source of emissions is considered to be negligible.

4.3 Other SSRs in both the project and baseline scenario

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
O1	Development of site	The supermarket site may need to be developed. This could include the construction of civil infrastructure, buildings, and may lead to clearing, grading, etc. GHG emissions would arise due to the combustion of fossil fuels and electricity used to power equipment required to develop the site.	Related	No	Emissions from this source would be identical in the baseline scenario and in the project scenario

#	SSR	Description	Controlled, Related or Affected?	Considered or not?	Justification
O2	Construction of the refrigeration system	This includes any GHG emissions linked to the construction of the material used to build the system. This may include energy (electricity, fossil fuel) to produce and melt steal, or any other raw resources required.	Related	No	Emissions from this source would be identical in the baseline scenario and in the project scenario
O3	Transportation of equipment	This includes any GHG emissions that may arise from the combustion of fossil fuels to transport equipment from the construction plant to the site.	Related	No	Emissions from this source would be identical in the baseline scenario and in the project scenario
O4	Construction on site	This includes any GHG emissions arising from the construction of buildings and the installation of refrigeration systems on site. This source may include GHG emissions from fuel combustion or electricity usage by crane, lifts, truck, etc	Related	No	Emissions from this source would be identical in the baseline scenario and in the project scenario
O5	Site decommissioning	This source includes any emissions linked to the future decommissioning of the site. This may involve demolition, transportation of waste, transfer of equipment to other sites, etc. This would lead to increased GHG emissions from fossil fuel combustion and/or electricity usage.	Related	No	Emissions from this source would be identical in the baseline scenario and in the project scenario

5. Quantification and calculation of GHG emissions/removals

The quantification methodology is based on the difference of refrigerant loads in the systems, both in the baseline and project scenarios. Assuming a certain percentage for the leak factor (LF), this load reduction translates itself into a leak reduction (lb/year). Considering the baseline refrigerant GWP, the leak reduction is then quantified as an emission reduction (tCO_2e/year). As described above, the reduction of refrigerant load - and therefore GHG emissions - is due to the implementation of refrigeration technologies that involve the use of CO_2 and glycol as alternative refrigerant and heat transfer fluid.

There is an uncertainty associated with the quantification due to the historical leak factor and the load-surface factor for each project unit. The average baseline leak factor (21%) is based on the 2009 and 2010 average over 16 supermarkets and has been compared to different values from the literature[9]. Nevertheless, since the technology and refrigeration process (direct expansion) is similar from one supermarket to the other, it is reasonable to assume a similar leak rate for all project units and the uncertainty is assumed to be low to moderate.

The average leak rate from the Project's systems has been calculated from actual measurements in 15 stores, resulting in 64% leak rate for 2014 (September 2013 to August 2014). These leaks come mostly from the installation of the new systems, where leaking is a normal part of the installation process. In the next years, these leaks should happen at a lower rate or not at all and the Project's emissions will be lower. This leak rate is also due to electric power outages where a large part of cooling gas had to be replaced. Sobeys has learned from these events and have already put in place procedures to reduce leaks in case of power outages.

There is another uncertainty associated with the historical load-surface factors that are used to deduct the amounts of refrigerant used in a given supermarket for Type I projects. To reduce this uncertainty, the load-surface factors have been calculated for each manufacturer, since the variability among a given manufacturer's systems is considered to be much lower than between two different manufacturers. For type II and III, this uncertainty is much lower since the load-surface factors have been taken from the manufacturers' calculation, which are based on the pipes volumes (length and diameters) as well as the refrigerants' densities.

[9] http://www.epa.gov/greenchill/downloads/EPASupermarketReport_PUBLIC_30Nov05.pdf

5.1 Baseline emissions (BE)

Type I (fluid substitution in the refrigeration circuit)

The baseline emissions for projects Type I consist in the difference in refrigerant loads times the annual leak factor of 21%. The historical load of refrigerant for Type I projects have been compiled from data transmitted by the refrigerant manager at Sobeys supermarkets in which no improvement was implemented to the refrigeration systems. Knowing the historical loads and surface of each supermarket, an average load-surface factor (LS_{hist}), expressed in pound per square foot, has been calculated for each of the manufacturer, assuming that the different systems of a given manufacturer are comparable.

$BE = BE_{hist} = LS_{hist} * S * 1/2200 * GWP_{baseline\ fluid} * LF$

Where:

- BE: baseline emissions for projects Type I (tCO_2e)
- BE_{hist}: baseline emissions for projects Type I based on historical data (tCO_2e)
- LS_{hist}: load-surface factor for a given manufacturer based on historical data (lb/ft^2)
- S: supermarket surface (ft^2)
- 1/2200: conversion factor pound to ton
- $GWP_{baseline\ fluid}$: Global Warming Potential associated to the baseline synthetic refrigerant (tCO_2e/tHCFC or HFC)
- LF: baseline leak factor (%)

Type II (fluid substitution in the heat rejection circuit)

The baseline emissions for projects Type II consist in the difference in refrigerant loads times the annual leak factor of 21%. The baseline emissions quantification is similar to Type I, except that the Load-surface is calculated (LS_{calc}) instead of being based on historical values. The calculation was provided by the manufacturer and is based on the pipes and coils loads and lengths.

$BE = LS_{calc} * S * 1/2200 * GWP_{Baseline\ fluid} * LF$

Where:

- BE: baseline emissions for projects Type II (tCO_2e)
- LS_{calc}: calculated load-surface factor for synthetic refrigerant heat rejection circuit (lb/ft^2, per manufacturer)
- S: supermarket surface (ft^2)
- 1/2200: conversion factor pound to ton
- $GWP_{baseline\ fluid}$: Global Warming Potential associated to the baseline synthetic refrigerant (tCO_2e/tHCFC or HFC)
- LF: baseline leak factor (%)

Type III (fluid substitution in the condensation circuit)

The baseline emissions for projects Type III consist in the difference in refrigerant loads times the annual leak factor of 21%. The baseline emissions quantification is similar to Type II: the Load-surface is calculated (LS_{calc}). The calculation was provided by the manufacturer and is based on the pipes and coils loads and lengths.

$BE = LS_{calc} * S * 1/2200 * GWP_{baseline\ fluid} * LF$

Where:

- BE: baseline emissions for projects Type III (tCO_2e)
- LS_{calc}: calculated load-surface factor for an air condenser per manufacturer (lb/ft^2, per manufacturer)
- S: supermarket surface (ft^2)
- 1/2200: conversion factor pound to ton
- $GWP_{baseline\ fluid}$: Global Warming Potential associated to the baseline synthetic refrigerant (tCO_2e/tHCFC or HFC)
- LF: baseline leak factor (%)

5.2 Project emissions (PE)

Projects emission for type I projects correspond to the leaks associated to CO_2 loads as well as remaining loads of R507 and/or R407.

$PE = (L_{CO2}*GWP_{CO2} + L_{R507}*GWP_{R507} + L_{R407}*GWP_{R407}) * 1/2200 * LF$

Where:

- PE: project emissions for Type I projects (tCO_2e)
- L_{CO2} is the load of CO_2 in the system (lb)
- GWP_{CO2} is the GWP of CO_2
- L_{R507} is the load of R507 (lb)
- GWP_{R507} is the GWP of R507
- L_{R407} is the load of R407 (lb)
- GWP_{R407} is the GWP of R407C
- 1/2200: conversion factor pound to ton
- LF: project leak factor (%)

There are no project emissions for type II and III since the substitution fluid is glycol, which GWP equals zero.

5.3 Emission Reductions (ER)

The emission reductions (ER) are calculated as follows:

$$ER = \sum_{i=1}^{n} BE_i - PE_i$$

Where:

- ER: total emission reductions for n project units (tCO_2e)
- BE: baseline emissions for the project unit i (tCO_2e)
- PE: project emissions for the project unit i (tCO_2e)

6. Monitoring the data information management system and data controls

6.1 Purpose

Monitoring will be integrated into the operation and maintenance of the three systems targeted by this Bundled Project. Project emissions (CO_2e) from Project Type I will be monitored annually to determine any leaks that may affect the amount of emissions reductions that could be claimed by the Bundled Project.

6.2 Types and origin of data and information to be reported

The following data and parameters will be monitored annually:

- The quantity of leaked CO_2 for Project Type I, based on the invoices provided by refrigerant suppliers

6.3 Monitoring times and periods, considering the needs of intended users

Relevant data will be aggregated monthly and compiled yearly for verification.

6.4 Monitoring roles and responsibilities

Individual refrigerant suppliers and supermarket staff will be responsible for compiling all relevant information. Sobeys staff from the "Aménagement Commercial" division will be responsible for aggregating the data and transmitting it to the verifier.

6.5 Monitored parameters

SSR identifier or name	Data parameter	Estimation, modeling, measurement or calculation approaches	Data Recording (electronic or paper)	Data unit	Sources/Origin	Monitoring frequency	Description and justification of monitoring method
Consumption (or leaks) of CO_2	Volume of leaked CO_2	Measured	Both. Data will be kept for at least five years after serialization of the VERs.	lb	Metering of gas refilled to the system, on an annual basis. Data will be defined by the invoices provided by the refrigerant providers.	Annual	This is the most accurate method for measuring this parameter assuming that staff are correctly trained and equipment is correctly maintained

7. Annexes

ANNEX I: Unique Location for each Project Unit

Unit name	Address	Postal code
Kirkland/Boul.St-Charles(8565)(556)(431)	3701, boul. Saint-Charles	H9H 4M2
Ste-Foy - L'Hêtrière(171)	3373, rue de l'Hêtrière	G3A 0M2
St-Rémi de Napierville/St-Paul(8174)(8059)(59)	810 Rue St-Paul	J0L 2L0
Laval Ouest	4805, Boul. Arthur Sauvé	H7R 3X2
Dorval/chemin Herron(89505)	960, chemin Herron	H9S 1B3
St-Félix-de-Valois(469)	3100, rue Henri-L.-Chevrette	J0K 2M0
Supermarché Clément Nicolet Inc.	2000 Boul Ls Frechette	J3T 2A3
Cookshire/rue Principale est(145)	35 rue Principale Est	J0B 1M0
Repentigny - Iberville (102)	1315 boul. Iberville	J5Y 4B8
Rouyn Noranda(Délicana)(0546)	680, avenue Chaussé	J9X 4B9
St-Jérome - du Grand Héron (063/8024)	1005, Grand-Héron	J7Y 3P2
Val D'Or (6111)	1801, 3ième Avenue (Carrefour)	J9P 5K1
Rivière-des-Prairies (423)	12285, boul. Rodolphe Forget	H1E 6M3
Ste-Martine	305, Rue St-Joseph	J0S 1V0
Bellefeuille (219)	1085, boul. Roland-Godard	J7Y 4C4
Groupe Épicier Unepin inc. (Fleurimont)	2240, rue King Est	J1G 5G8
Alma - Carrefour du Nord(141)	705, avenue du Pont Nord	G8B 6T5
Jonquière / St-Dominique(027)	2580 Saint-Dominique	G7X 6J4
Lafontaine/Rue St-Georges(73)	2012, Rue St-Georges	J7Y 1M8
Trois-Rivières / Blv des Forges(349)	3925, Des Forges	G8Y 1V9
St-Lambert/Sir Wilfrid-Laurier(215)	299 Boulevard Sir-Wilfrid-Laurier	J4R 2L1
Laplaine/Laurier/Terrebonne(505)	5671, boulevard Laurier	J7M 1T7
St-Apolinaire/rue Principale(488)	148, Rue Principale	G0S 2E0
Stoneham	335, Chemin Du Hibou	G3C 1R9
Malartic/rue Royale(6907)	1450 rue Royale Malartic	J0Y 1Z0
9190-4144 Québec inc. (St-Pascal de Kamouraska)	400, avenue Chapleau	G0L 3Y0
Cavendish(111)	5800, Cavendish	H4W 2T5
Laval / Ste-Rose (0365)(0112)	380, Boulevard Curé-Labelle	H7L 4T7
Brossard (8048) Tasch/Des Prairies	9105 Boul Taschereau	J4Y 3B8
Mtl - Salaberry (210)	2820, rue de Salaberry	H3M 1L3
Laval Auteuil (657 / 459 / 844)	5680, boul. des Laurentides	H7K 2K2

Unit name	Address	Postal code
Mirabel, St-Janvier/Curé-Labelle(374)	13380 Boul Du Cure-Labelle	J7J 1G9
St-Joseph-du-Lac/Ch.Oka	3765 Ch d'Oka	J0N 1M0
Longueuil(0172)JP Vinc.	455 Bd Jean Paul Vincent	J4G 1R3
St-David de Lévis/boul.de la Rive/Sud (8094) (8592)	3950, boul. Rive-Sud	G6W 1H7
Mtl - N.-Dame/Maria (72)	3964, rue Notre-Dame Ouest	H4C 1R1
Ste-Julie(187)	2055, Rue Principale	J3E 1W1
Mtl-Nord - Henri-Bourassa (0314)	6190, Boul. Henri-Bourassa est	H1G 5X3
Contrecoeur(069)	4999 Rue des Ormes	J0L 1C0
Marché d'Alimentation Lambert et frères inc. Chambly (406) (475)	3500, boul. Fréchette	J3L 6Z6
Les Marchés Pépin inc., Mont St-Hilaire	345, Sir Wilfrid-Laurier	J3H 3N8
Mtl – Lachine	490, 28e avenue	H8S 3Z4
Supermarché Jacques Daigle inc	450, Blainville Est	J7E 1N9
Valleyfield (8641)	1366, Mgr Langlois	J6S 1E3
Mercier/rue St-Jean-Baptiste	631, boulevard St-Jean-Baptiste	J6R 2A3
Ste-Agathe des Monts	3, rue Raymond	J8C 2V6
Pont-Rouge	190, du college	G3H 0C6
Grenville	30 rue Maple	J0V 1J0
L'Annonciation	1395, Rue L'Annonciation Sud	J0T 1T0
Disraèli	1300 av. Champlain	G0N 1E0

ANNEX II: Projects List

Unit #	Description	Start date	Type	BE (tCO_2e)	2014 PE (tCO_2e)	2014 ER (tCO_2e)
1	Valleyfield (8641)	2011-01-19	I	1,752.0	1.0	1,751.0
2	Kirkland/Boul.St-Charles (8565)(556)(431)	2010-04-11	I	1,167.5	0.0	1,167.5
3	Ste-Foy - L'Hêtrière (171)	2009-11-18	I	1,483.2	1.3	1,482.0
4	Mercier/rue St-Jean-Baptiste	2011-02-01	I	1,476.7	0.68	1,476.0
5	St-Rémi de Napierville/St-Paul (8174)(8059)(59)	2010-11-24	I	1,121.2	0.0	1,121.2
6	Laval Ouest	2009-08-25	I	1,462.1	1.6	1,460.5
7	Ste-Agathe des Monts	2011-04-14	I	1,085.6	0.6	1,085.0
8	Dorval/chemin Herron (89505)	2010-11-10	I	1,318.5	0.4	1,318.1
9	Pont-Rouge	2011-06-13	I	1,193.2	0.8	1,192.4
10	St-Félix-de-Valois (469)	2009-05-13	I	398.5	0.0	398.5
11	Supermarché Clément Nicolet Inc.	2009-06-18	I	366.8	0.0	366.8
12	Grenville	2011-06-10	I	241.0	196.6	44.4
13	L'Annonciation	2011-03-02	I	835.3	0.6	834.7
14	Disraèli	2011-03-02	I	811.7	0.3	811.4
15	Cookshire/rue Principale est (145)	2010-01-27	I	739.6	0.2	739.4
17	Repentigny - Iberville (102)	2006-11-15	II	138.5	0.0	138.5
19	Rouyn Noranda(Délicana) (0546)	2010-02-24	II	363.1	0.0	363.1
20	St-Jérome - du Grand Héron (063/8024)	2005-11-14	II	169.5	0.0	169.5
21	Val D'Or (6111)	2008-09-29	II	341.7	0.0	341.7
22	Rivière-des-Prairies (423)	2007-04-04	II	337.5	0.0	337.5
23	Ste-Martine	2009-03-04	II	331.6	0.0	331.6
24	Bellefeuille (219)	2006-12-05	II	318.1	0.0	318.1
25	Groupe Épicier Unepin inc. (Fleurimont)	2008-04-01	II	305.0	0.0	305.0
26	Alma - Carrefour du Nord (141)	2008-12-03	II	316.3	0.0	316.3
27	Jonquière / St-Dominique (027)	2008-02-26	II	314.2	0.0	314.2
28	Lafontaine/Rue St-Georges (73)	2010-09-10	II	150.0	0.0	150.0
29	Trois-Rivières / Blv des Forges (349)	2009-05-21	II	146.3	0.0	146.3
31	St-Lambert/Sir Wilfrid-Laurier (215)	2010-09-03	II	128.4	0.0	128.4
33	Laplaine/Laurier/Terrebonne(505)	2010-03-25	II	115.7	0.0	115.7
34	St-Apolinaire/rue Principale (488)	2009-12-02	II	222.9	0.0	222.9
39	Stoneham	2008-06-02	II	81.4	0.0	81.4
40	Malartic/rue Royale (6907)	2009-10-28	II	153.6	0.0	153.6
41	9190-4144 Québec inc. (St-Pascal de Kamouraska)	2006-05-31	II	126.5	0.0	126.5
42	Cavendish (111)	2009-09-22	II	251.3	0.0	251.3
43	Laval / Ste-Rose (0365)(0112)	2005-11-29	II	115.7	0.0	115.7
44	Brossard (8048) Tasch/Des Prairies	2009-05-27	II	231.8	0.0	231.8
45	Mtl - Salaberry (210)	2007-03-27	II	111.1	0.0	111.1
46	Laval Auteuil (657 / 459 / 844)	2007-04-04	II	109.9	0.0	109.9
48	Mirabel. St-Janvier/Curé-Labelle (374)	2009-11-26	II	105.9	0.0	105.9
51	St-Joseph-du-Lac/Ch.Oka	2010-01-20	II	88.1	0.0	88.1
53	Longueuil (0172) JP Vinc.	2009-06-17	II	168.0	0.0	168.0

Unit #	Description	Start date	Type	BE (tCO_2e)	2014 PE (tCO_2e)	2014 ER (tCO_2e)
54	St-David de Lévis/boul.de la Rive/Sud (8094)(8592)	2010-04-07	II	74.1	0.0	74.1
55	Mtl - N.-Dame/Maria (72)	2006-11-29	II	71.2	0.0	71.2
57	Ste-Julie (187)	2009-03-06	II	132.3	0.0	132.3
58	Mtl-Nord - Henri-Bourassa (0314)	2005-11-15	II	124.9	0.0	124.9
63	Contrecoeur (069)	2008-02-13	II	162.0	0.0	162.0
66	Marché d'Alimentation Lambert et frères inc. Chambly (406)(475)	2005-02-01	II	122.4	0.0	122.4
67	Les Marchés Pépin inc.. Mont St-Hilaire	2006-01-01	II	98.9	0.0	98.9
68	Mtl - Lachine	2005-08-16	III	25.2	0.0	25.2
69	Supermarché Jacques Daigle inc.	2003-11-01	III	20.3	0.0	20.3
					Total	**21,322**