

SUPERMARKETS

CO₂
TRANSCRITICAL
REFRIGERATION
SYSTEM

*Efficiency, quality and reliability
built-in all our ecofriendly products*





“SOBEYS IS COMMITTED TO REDUCING ITS CARBON FOOTPRINT AND CONTRIBUTING TO THE CGF’S EFFORTS TO SLOW GLOBAL WARMING THROUGH PRACTICAL AND ENVIRONMENTALLY RESPONSIBLE PRACTICES. THE INTRODUCTION OF NATURAL REFRIGERATION SYSTEMS IN OUR STORES IS ONE OF OUR MOST SIGNIFICANT ACHIEVEMENTS TO DATE.”

MARC POULIN *President and CEO, Sobeys Inc.*

CO₂ SOLUTION BY CARNOT: A SMART, ECOFRIENDLY AND PROFITABLE CHOICE

Made by the most experienced company in CO₂ transcritical solutions in North America, the CO₂ refrigeration system by Carnot is the smart choice for owners of supermarkets.

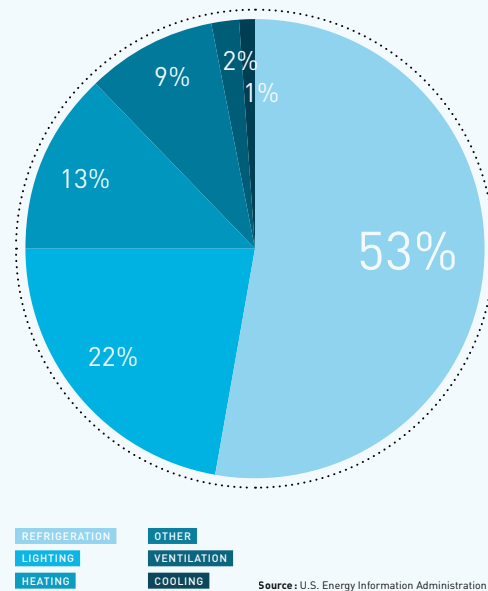
PROVEN EFFICIENCY FOR MAJOR SAVINGS

Superior quality, performance and energy stability;

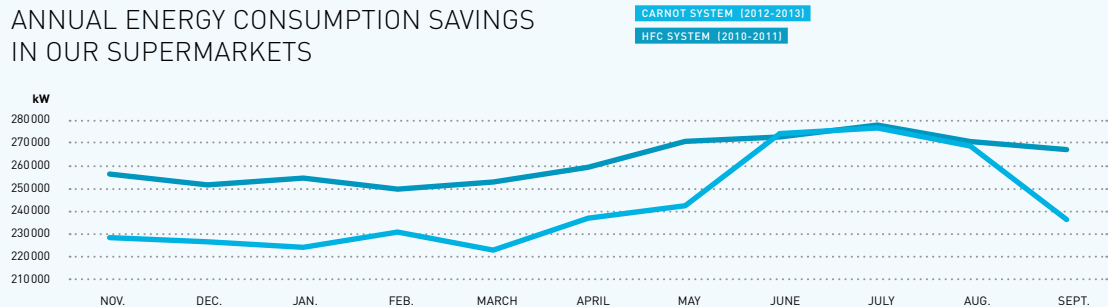
Flawless redesign to replace existing R-22 solutions;

Financial savings of up to 30% year after year due to the reduction of energy costs, maintenance and service costs and the elimination of refrigerant fees.

ENERGY CONSUMPTION PROFILE OF THE AVERAGE SUPERMARKET



ANNUAL ENERGY CONSUMPTION SAVINGS IN OUR SUPERMARKETS

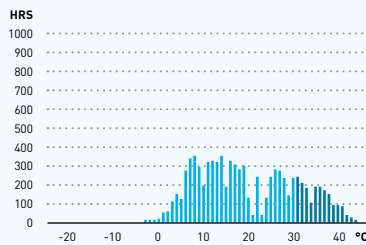


TRANSCRITICAL MODEL

COMPR. STAGE	COOLING CAPACITY		EVAPORATING TEMPERATURE		OUTDOOR TEMPERATURE									
	TR	kW	°F	°C	(°C)	-5	0	5	10	15	20	25	30	35
MT	105	370	17.6	-8	kWref	370	370	370	370	370	370	370	370	370
					kW	57	59	61	64	79	93	121	161	203
					THR	499	501	503	507	524	541	574	619	669
					COPr	6.5	6.3	6.1	5.8	4.7	4.0	3.1	2.3	1.8
					COPc	12.2	11.9	11.6	11.1	9.4	8.2	6.6	5.3	4.4
LT	15	53	-22	-30	kWref	53	53	53	53	53	53	53	53	53
					kW	19	19	19	20	22	25	29	36	43
					COPr	2.8	2.8	2.7	2.7	2.4	2.1	1.8	1.5	1.2

TRANSCRITICAL MODEL WITH ADIABATIC GAS COOLER

MT	105	370	17.6	-8	kWref	370	370	370	370	370	370	370	370	370
					kW	57	59	61	64	79	93	121	138	162
					THR	499	501	503	507	524	541	574	593	621
					COPr	6.5	6.3	6.1	5.8	4.7	4.0	3.1	2.7	2.3
					COPc	12.2	11.9	11.6	11.1	9.4	8.2	6.6	6.0	5.3
LT	15	53	-22	-30	kWref	53	53	53	53	53	53	53	53	53
					kW	19	19	19	20	22	25	29	32	36
					COPr	2.8	2.8	2.7	2.7	2.4	2.1	1.8	1.6	1.5



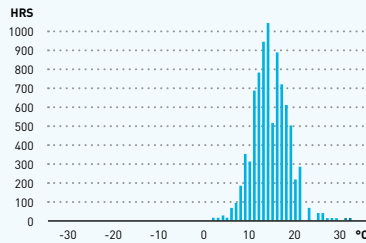
LAS VEGAS



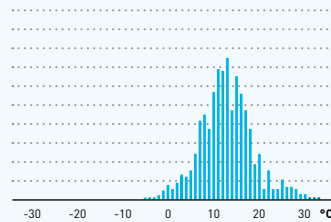
MONTRÉAL



NEW YORK



SAN FRANCISCO



SEATTLE

SUBCRITICAL OPERATION
TRANSCRITICAL OPERATION + PARALLEL COMPRESSION

kWref [kW] REFRIGERATION CAPACITY
THR [kW] REJECTED CAPACITY
kW [kW] ENERGY CONSUMPTION
COPr REFRIGERATION COEFFICIENT OF PERFORMANCE
COPc COMBINED COEFFICIENT OF PERFORMANCE INCLUDING HEATING OR RAIN CYCLE FREE COOLING

CO₂ TECHNOLOGY BY CARNOT: A POWERFUL REFRIGERATION SYSTEM

POWERFUL TECHNOLOGY, QUITE SIMPLY

- Modular solution designed by a highly qualified engineering team;
- Process optimization for increased efficiency;
- Simplified quick-plug installation;
- On-site assistance for equipment start-up;
- Complete training for technical staff;
- Fully automated system.

A SMART, SUSTAINABLE BUSINESS DECISION

- Harmless refrigerant reduces or eliminates risk of facing environmental or health and safety restrictions in the future;
- Equipment outlasts conventional installations;
- Substantial financial savings are generated throughout equipment life;
- Significant reduction in greenhouse gases (GHG);
- Solution is eligible for current LEED programs.

“VERY HIGH QUALITY
AND RELIABLE
REFRIGERATION
SYSTEM AT A LOW
MAINTENANCE COST.”

JOCELYN FORGUES *IGA Brompton owner*



With our hot gas and accelerated passive defrost processes, your products stay fresh and you save money year after year.

“EXCELLENT SERVICE, QUICK RESPONSE AND VERY COMPETENT STAFF.”

OPTIMIZED TECHNOLOGY, SUPERIOR RELIABILITY AND SAFETY

Elimination of ignition and toxicological hazards that occur with other refrigerants;

Designed in compliance with the highest quality standards in the industry;

Strict quality control in a controlled environment;

Highly reliable processes tried and tested in the most extreme conditions;

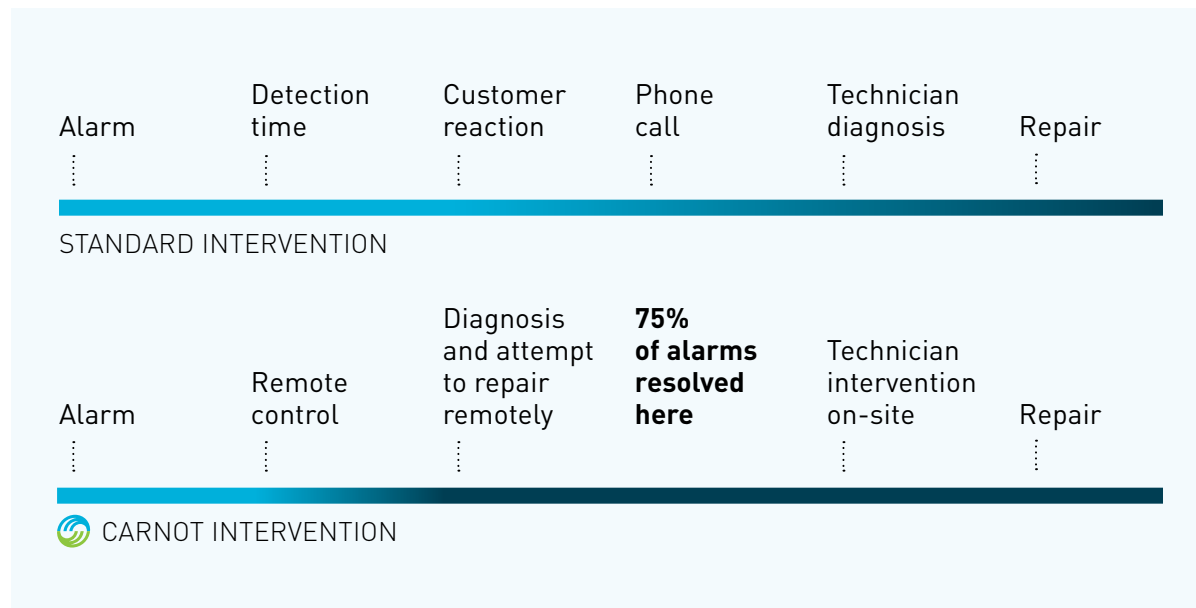
REAL-TIME REMOTE ASSISTANCE

Remote controlled equipment and alarm system;

Real-time monitoring and performance reports by a highly qualified team;

24/7 technical support, quick and efficient interventions.

35% FASTER INTERVENTION



CO₂ TECHNOLOGY BY CARNOT: CUSTOMIZE YOUR SYSTEM

□ HEAT RECOVERY /RCINTELLIGENT

Reuse the energy created by your process using a custom heat recovery strategy for major financial savings year after year.

□ PARALLEL COMPRESSION

Increased efficiency.

□ PROPANE /CO₂ ALTERNATIVE

Optimal efficiency for locations with high ambient temperatures

□ GAS COOLER /CONDENSER

Different options available for optimal performance and durability.

□ HOT GAS DEFROST

Defrost of low temperature evaporators is supplied by the hot gases released by the low temperature compressors for annual energy savings and a longer product life cycle.

□ ACCELERATED PASSIVE DEFROST

This method allows the medium temperature evaporators to defrost without adding unnecessary heat to the refrigeration system for annual savings and better temperature stability.

□ 24/7 REMOTE MONITORING AND IMPLEMENTATION

Real-time technical support.

□ INTERNET MODULE

To closely monitor your process using your smartphone or computer.

□ TURNKEY INSTALLATION

For peace of mind, done by professionals to meet your needs, from design to start-up.

CARNOT: A PIONEER IN TRANSCRITICAL CO₂ REFRIGERATION AND COOLING SYSTEMS

Carnot Refrigeration has proven itself regarding the performance of its CO₂ transcritical refrigeration system. With the longest-lasting legacy of high quality demonstrations across North American and Europe since 2008, CO₂ refrigeration technology by Carnot Refrigeration has set standards with its efficiency, profitability, sustained performance in the most extreme conditions, simplicity and operational reliability.

NOTEWORTHY FACTS

Installations performed throughout North-America and Europe;

Daily savings for our clients;

Highly qualified engineers who are constantly trying to set higher standards for CO₂ refrigeration technology;

Standards and certifications including CSA, UL and CE;

Awards and recognition from recognized organizations such as ASHRAE and EPA;

Competent customer service team focused on customer satisfaction.



“CO₂ IS NOURISHMENT FOR TREES: SYNTHETIC
MOLECULES ARE NOT.”

MARC-ANDRÉ LESMERISES *CEO of Carnot, United Nations conference*

SUPERMARKETS

QUESTIONS INFORMATION

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