

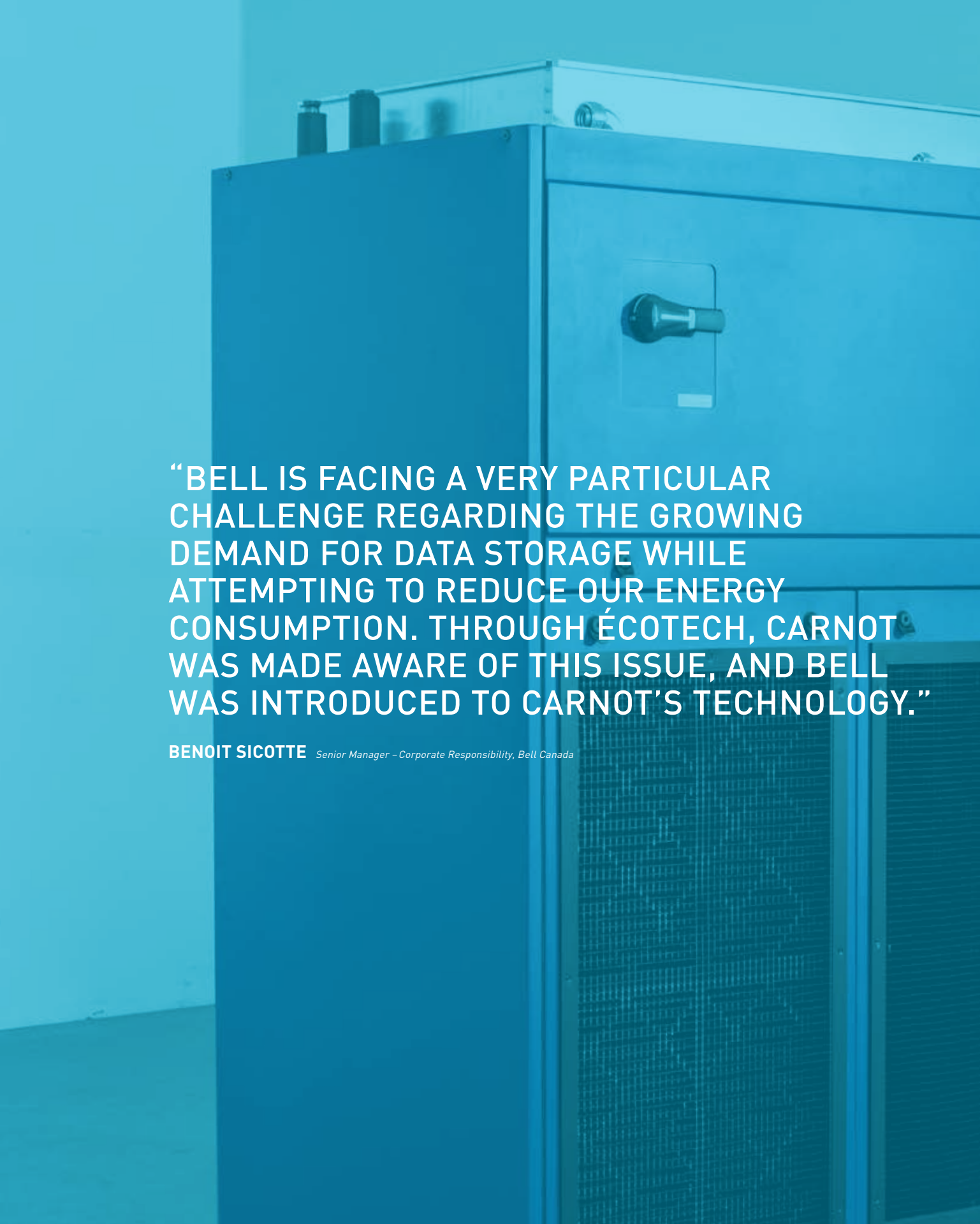
COMPUTER ROOMS
AIR CONDITIONING

AQUILON™ NATURAL REFRIGERANT

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



CARNOT
REFRIGERATION

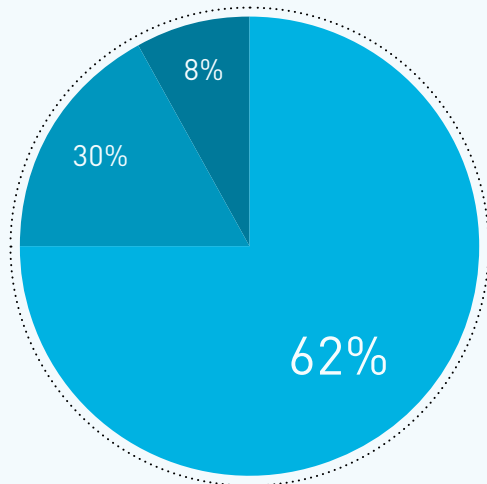


“BELL IS FACING A VERY PARTICULAR CHALLENGE REGARDING THE GROWING DEMAND FOR DATA STORAGE WHILE ATTEMPTING TO REDUCE OUR ENERGY CONSUMPTION. THROUGH ÉCOTECH, CARNOT WAS MADE AWARE OF THIS ISSUE, AND BELL WAS INTRODUCED TO CARNOT’S TECHNOLOGY.”

BENOIT SICOTTE *Senior Manager – Corporate Responsibility, Bell Canada*

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

ENERGY CONSUMPTION PROFILE
OF AN AVERAGE COMPUTER ROOM



IT DEVICES SUCH AS SERVERS
AIR CONDITIONING
OTHER

Source: METI Green IT Promotion Council 2008

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

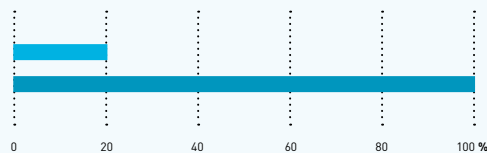
PROVEN EFFICIENCY FOR MAJOR SAVINGS

Superior quality, performance and energy stability;

Flawless redesign to replace existing R-22 solutions;

Financial savings of up to 80% year after year due to the reduction of energy costs, maintenance and service costs and the elimination of refrigerant fees.

AVERAGE ENERGY CONSUMPTION
USING RAIN CYCLE™



CARNOT PATENTED RAIN CYCLE™ FREE COOLING
STANDARD INSTALLATION

ECOFRIENDLY CO₂

100% natural non-toxic, which eliminates the need for several pieces of equipment and safety programs;

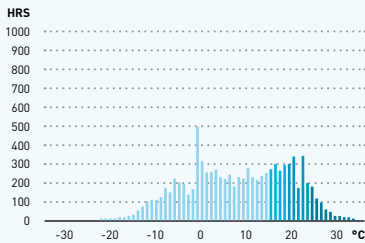
Almost total elimination of greenhouse gases GHG;

Non-flammable;

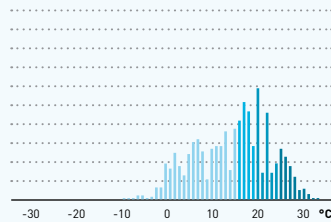
No phase out issues.

AQUILON™ -15
15 TR (50 kW)
MODEL

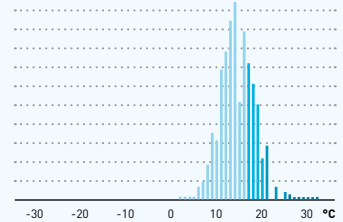
NOMINAL CAPACITY AT 35 °C (kW)		ROOM (OR RETURN) TEMPERATURE		OUTDOOR TEMPERATURE										
Refrig.	Sensible	°C	%RH	[°C]	-10	-5	0	5	10	15	20	25	30	35
63.7	62	28	36	kW	1.8	2.2	2.7	3.0	3.3	3.6	10.2	12.2	16.1	20.4
				pPUE	1.03	1.04	1.04	1.05	1.05	1.06	1.16	1.20	1.26	1.33
60.5	58.8	26	39	kW	2.0	2.4	2.8	3.1	3.4	9.3	10.1	12.5	16.3	20.5
				pPUE	1.03	1.04	1.05	1.05	1.06	1.16	1.17	1.21	1.28	1.35
54.7	46.8	24	45	kW	2.1	2.6	3.0	3.2	8.5	9.1	10.3	12.9	16.7	20.8
				pPUE	1.05	1.06	1.06	1.07	1.18	1.19	1.22	1.28	1.36	1.44
51.1	38.7	22	50	kW	2.3	2.8	3.1	8.4	8.5	9.2	10.5	13.2	16.9	20.9
				pPUE	1.06	1.07	1.08	1.22	1.22	1.24	1.27	1.34	1.44	1.54



MONTREAL



NEW YORK

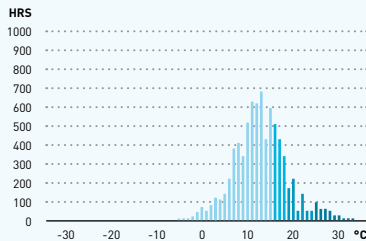


SAN FRANCISCO

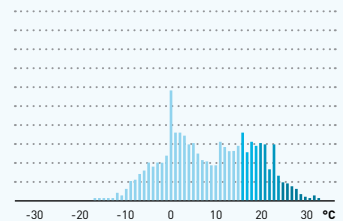
- FREE COOLING OPERATION
- MECHANICAL MODULATION
- SUBCRITICAL OPERATION
- TRANSCRITICAL OPERATION

kW [kW] TOTAL POWER CONSUMPTION FOR 80% LOAD
pPUE POWER UTILISATION EFFECTIVENESS

Notes: Data for Aquilon-15 17.2 TR (60.5 kW), model shown above, based on fluid temperature of 75 °F (24 °C) and outdoor temperature of 95 °F (35 °C). Data for models Aquilon-50 50 TR (175 kW) and Aquilon-30 30 TR (100 kW) also available upon request.



SEATTLE



TORONTO

CO₂ TECHNOLOGY BY CARNOT: A POWERFUL COOLING 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

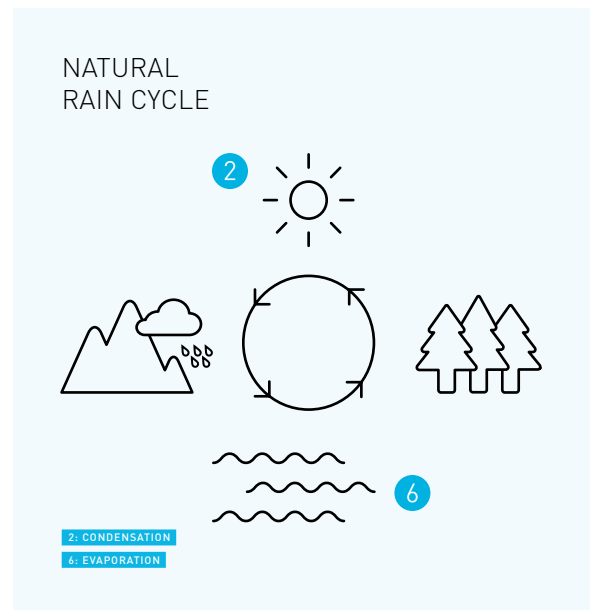
Harmless refrigerant reduces or eliminates risk of facing environmental or health and safety restrictions in the future;

Equipment outlasts conventional installations;

Substantial financial savings are generated throughout equipment life;

Significant reduction in greenhouse gases;

Solution is eligible for current LEED programs.



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

JOCELYN FORGUES IGA Brompton owner

“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;

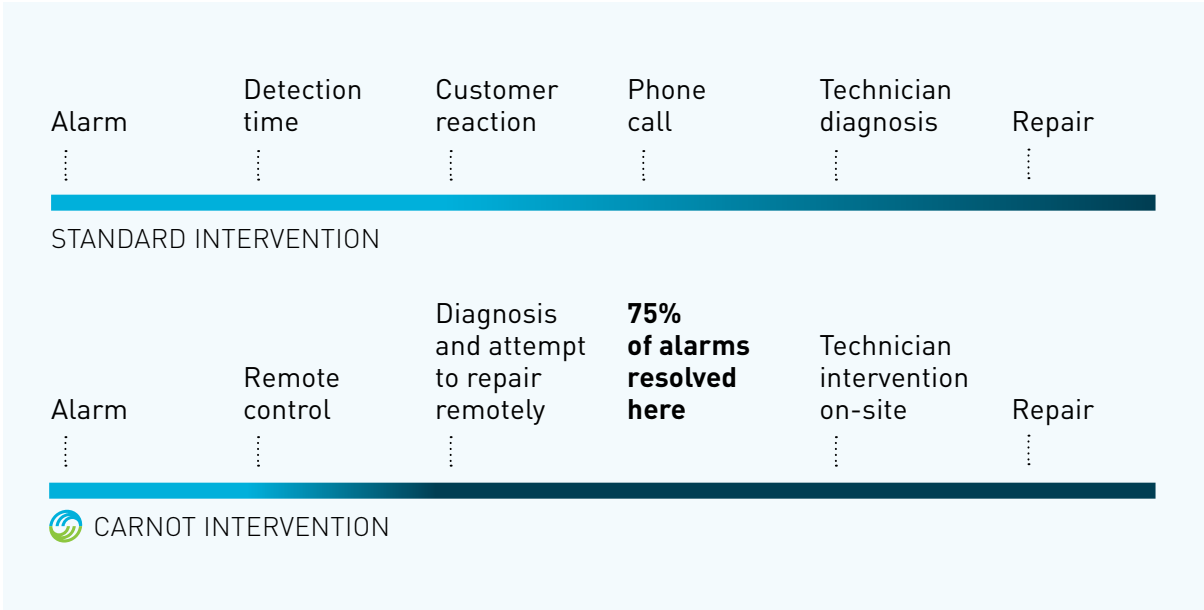
REAL-TIME REMOTE ASSISTANCE

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

□ LOW NOISE CONSTRUCTION

The strictest noise regulations are respected.

□ GAS COOLER /CONDENSER

Different options available for optimal performance and durability.

□ ENERGY METER WITH DISPLAY

Real-time display of your refrigeration consumption.

□ STAINLESS STEEL

Stainless steel covering and piping.

□ 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*

COMPUTER ROOMS
AIR CONDITIONING

QUESTIONS INFORMATION

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