



~ Confidential Business Information ~

Refrigeration System Manufacturers Corporate Reporting Form

This form is to be completed by all GreenChill partners that manufacture refrigeration systems by March 31st following the end of each reporting year. NOTE: All information provided will be treated as confidential business information (CBI), as stipulated under Clean Air Act provisions, and will not be divulged either internally at EPA, to other partners, or publicly. Only compiled results comparing the growth in sales of advanced refrigeration technologies versus the decline in sales of centralized DX systems will be released in a public statement.

1. General Partner Information

Company Name: _____

Partner Base Year (Note: this is the first year for which data is reported): _____

Partner Reporting Year: _____

2. Common System Types

- Centralized Direct Expansion (DX): A system composed of several compressors connected in parallel, sharing a common discharge line and suction line that run throughout the store, feeding refrigerant to the cases and coolers. The compressors are located in a central equipment room or on the building roof. The compressors are connected to one or more larger condensers, and share a number of other components including a single oil-management system.
- Distributed Direct Expansion (DX): A system that uses the same technology as a centralized DX system but instead of having a central compressor system, the system uses an array of compressor racks that are located near the refrigerated cases. To be considered a distributed system, a system must be marketed by the OEM as distributed.
- Micro-Distributed: A system with the compressor and condenser directly attached to the display case(s). These systems can be air- or water-cooled. These systems are intended for use in a "line-up" application, not a standalone spot merchandiser. *Note that for the purposes of GreenChill data reporting, partners only report sales of water-cooled micro-distributed systems.*
- CO₂ Transcritical: A system in which carbon dioxide operates on a transcritical cycle, evaporating in the subcritical region and rejecting heat at temperatures above the critical point in a gas cooler instead of a condenser.

- CO₂ Cascade: A system in which a carbon dioxide compressor raises the gas from low-temperature conditions up to an intermediate temperature while a separate refrigerating system uses a different refrigerant to condense the carbon dioxide.
- Secondary Loop: A system which uses a chiller to cool a secondary fluid. This secondary fluid is then circulated through the store to cases and coolers.

3. Reporting Units

With the exception of micro-distributed systems, the unit of measure used for reporting system sales to the GreenChill program is a rack. A “rack” is defined as:

“A single physical structure housing multiple compressors (not a single one) operating and piped in parallel with common suction and discharge refrigeration lines. Racks come in different dimensions – the number of compressors mounted on racks varies. Some racks include only one suction group (e.g., medium-temperature), while others contain multiple (e.g., low-temperature and medium-temperature). Racks may also be referred to as skids or packs.”

For the purposes of reporting sales of micro-distributed systems, partners should report the following information for water-cooled systems only.

- The number of cases sold for in-store installation.
- The number of condensing units sold for backroom installation (e.g., for walk-in coolers).

4. Sales

Please complete the table below regarding the number of refrigeration **racks** or, for micro-distributed systems, **cases/units** sold by your company and installed in the United States for retail grocery applications during the specified reporting year, by system type.

System Type	Number of Units Sold
Centralized DX	racks
Distributed DX	racks
CO ₂ Transcritical	racks
CO ₂ Cascade	racks
CO ₂ Secondary Loop	racks
Glycol Secondary Loop	racks
Brine Secondary Loop	racks
Other	racks
Micro-Distributed (in-store)	cases
Micro-Distributed (backroom)	units

If "Other" racks are listed, please specify: _____

5. Signature of Reporting Company's Authorized Representative

The data reported herein represent the Reporting Party's best estimates and are the result of a good faith effort to obtain and report accurate information. (Please print and sign the report)

Reporting Company: _____

Name (please print): _____

Signature: _____ Date: _____

6. Submitting Completed Forms

Please send completed forms by March 31st to Joe Donahue at Abt Associates (303-381-8205 and Joe_Donahue@abtassoc.com).

Please contact Kirsten Cappel (202-343-9556 or cappel.kirsten@epa.gov) or Joe Donahue if you have any questions.