

REGULATORY UPDATE - HFC / ENERGY REGULATIONS SUMMARY



US CLIMATE ALLIANCE: EPA SNAP RULES 20 and 21

- 24 U.S. States / Puerto Rico committed to phase down of HFC refrigerants
- R-404A, R-507A, and R-410A prohibited for new cold storage warehouse applications beginning Jan. 1, 2023
- Reduce 2005 CO₂ emission levels to 26 - 28% by 2025 and 50 - 52% by 2030
- Prohibits HFCs including R-404A and R-507A for new and retrofit applications



AMERICAN INNOVATION and MANUFACTURING (AIM ACT)

- The AIM Act provides new authority for the EPA to address HFC's in three ways: (1) phasing down production and consumption, (2) maximizing reclamation and minimizing releases from equipment, and (3) facilitating the transition to next generation technologies through sector-based restrictions
- **First area of focus** is the phase down of HFC production and consumption including in HVAC/R
- **Final rule** expected no later than Oct. 7, 2023

DATE	CAPS: CONSUMPTION and PRODUCTION
2022 - 2023	90 Percent
2024 - 2028	60 Percent
2029 - 2033	30 Percent
2034 - 2035	20 Percent
2036 & After	15 Percent

ADOPTED SNAP 2020 / 2021	STATE REQUIREMENT FOR REPLACEMENTS	EFFECTIVE DATES
Virginia	Yes	Jan 1, 2022
Maine	No	Jan 1, 2022
Rhode Island	Yes	Jan 1, 2022
Massachusetts	Yes	Jan 1, 2021
Colorado	No	Jan 1, 2021
Vermont	Yes	Jan 1, 2021
Delaware	Yes	Jan 1, 2021
Maryland	Yes	Jan 1, 2021
New York	Yes	Jan 1, 2021
New Jersey	Yes	Jan 1, 2020
Washington	No	Jan 1, 2020
California	Yes	Jan 1, 2020



- **New Facilities / Installations** (effective Jan. 1, 2022):
 - New systems **requiring charges > 50 lbs.** must use an approved refrigerant < 150 GWP
 - New systems **requiring charges < 50 lbs.** must use an approved refrigerant < 2,200 GWP
 - Applies to: **Retail, Cold Storage Warehouses, Industrial Process Refrigeration** (excluding Chillers), **Ice Rinks** (Jan. 1, 2024), and other non-residential refrigeration
- **Option 1 - Existing Facilities** (Compliance Criteria):
 - Reduce total Greenhouse Gas Potential (GHGp) of refrigerants used 55% below 2019 baseline by 2030 (per company not per system / store)
- **Option 2 - Existing Facilities** (Compliance Criteria):
 - Reduce weighted average of GWP refrigerants used to < 1,400 by 2030 (per company not per system / store)
 - Servicing existing stores is allowed, however, certain replacements may be considered as new equipment

ENVIRONMENT and CLIMATE CHANGE CANADA (ECCC)

- ECCC regulates refrigerants at the national level in Canada
- Current Global Warming Potential (GWP) refrigerant limit of 2,200 for commercial refrigeration systems
- Further GWP reductions expected in 2024, 2029, and 2034 to achieve an 85% reduction in HFC consumption by 2036

QUEBEC (REGULATION REGARDING HALOCARBONS)

- New systems with power ratings **equal to or > 50 kW** restricted to refrigerants with < 150 GWP rating
- New systems with power ratings < 50 kW restricted to no more than 1,500 GWP rating



CALIFORNIA ENERGY COMMISSION ENERGY EFFICIENCY STANDARDS - 2019

- California Energy Code Title 24 includes mandatory efficiency requirements for refrigeration systems (Refrigerated Warehouses / Retail Spaces with Walk-In Coolers, Freezers, Refrigerated Display cases)

- **Warehouse Scope Includes:**
 - Single room < 3,000 square feet (DOE units meet requirements)
 - Single room equal to or > 3,000 square feet
 - Refrigerated spaces that add up to 3,000 square feet or more served by the same refrigeration system



- **U.S. DOE Energy Regulations** for refrigeration systems (Walk-In Coolers and Freezers - WICFs) < 3,000 square feet:
 - Unit coolers
 - Dedicated condensing units with (1) or more compressors, (1) refrigeration circuit; and serves (1) refrigerated load
 - Use DOE certified equipment



CANADA NRCAN

- Canadian Energy Regulation similar to U.S. DOE in scope and effective dates



MEXICO NOM-012-ENER-2019

- Mexican Energy Efficiency Standards (Condensing and Low Profile Evap. units)

SCOPE	BTU/H RANGE	EFFECTIVE DATES	
		APRIL 2021 (BTU/H)	DEC. 2021 (BTU/H)
Condensing Units - MT	2,547 - 88,716	2,547 - 40,982	40,982 - 88,716
Condensing Units - LT	2,548 - 32,415	2,547 - 15,355	15,355 - 32,415
Low Profile: Evaporators - MT (KR)	1,024 - 136,486	In Scope	
Low Profile: Evaporators - LT (KR)	1,024 - 44,397	In Scope	

- **Retail Scope Includes:**
 - Retail food stores with 8,000 square feet or more of conditioned floor area, and utilizes either refrigerated display cases or walk-in coolers or freezers

REGULATORY UPDATE - PRODUCT SOLUTIONS

HUSSMANN SYSTEMS

Use your QR reader to reference current information on www.hussmann.com/products/refrigeration-systems.



PRODUCTS	DOE 2020 / NRCan		EPA SNAP RULES 20 & 21 (R-404A & R-507A Prohibited)		CANADA ECCC (< 2,200 GWP)		CARB (R-404A & R-507A Prohibited)		NOM-12	CALIFORNIA TITLE 24		AIM ACT (EPA)		QUEBEC (New Systems - Compressor Systems ONLY)				
	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	NEW FACILITIES WITH SYSTEM CHARGE < 50 LBS GWP < 2,200	NEW FACILITIES WITH SYSTEM CHARGE > 50 LBS GWP < 150		LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	POWER RATINGS EQUAL or LESS THAN 50 KW WITH < 1,500 GWP	POWER RATINGS EQUAL or GREATER THAN 50 KW WITH < 150 GWP	
RACKS																		
Proto-Aire	✗ [5]	✗ [5]	✓	✓	✓	✓	✗	✗	NA	✓	✓	✓	✓	✓	✓	✗		
Proto-Aire EZ	✗ [5]	✗ [5]	✓	✓	✓	✓	✗	✗		✓ [2]	✓ [2]	✓	✓	✓	✓	✓	✗	
Protocol HE	✗ [5]	✗ [5]	✓	✓	✓	✓	✓ [1]	✗		✓ [4]	✓ [4]	✓	✓	✓	✓	✓	✗	
Protocol SP	✗ [5]	✗ [5]	✓	✓	✓	✓	✓ [1]	✗		✓ [4]	✓ [4]	✓	✓	✓	✓	✓	✗	
Outdoor Low Profile Protocol (DLP)	✗ [5]	✗ [5]	✓	✓	✓	✓	✗	✗		✓ [4]	✓ [4]	✓	✓	✓	✓	✓	✗	
CDRH	✗ [5]	✗ [5]	✓	✓	✓	✓	✗	✗		✓	✓	✓	✓	✓	✓	✓	✗	
Hussmann CO2	NA	NA	✓	✓	✓	✓	✗	✓		✓	✓	✓	✓	✓	✓	✓	✓	
CO2 Cascade			✓	✓	✓	✓	✗	✗		✓	✓	✓	✓	✓	✓	✓	✓	✗
Parallel Rack			✓	✓	✓	✓	✗	✗		✓	✓	✓	✓	✓	✓	✓	✓	✗
Port-A-Pak			✓	✓	✓	✓	✗	✗		✓	✓	✓	✓	✓	✓	✓	✓	✗
Port-A-Rack			✓	✓	✓	✓	✗	✗		✓	✓	✓	✓	✓	✓	✓	✓	✗
Pump Station			✓	✓	✓	✓	✓	✓		✓ [3]	✓ [3]	NA	NA	✓	✓	✓	✓	✓

[1] Some Water-Cooled models

[2] Not for Title 24 applications under 3,000 square feet

[3] Glycol for medium temp load or water for high side of propane systems

[4] Require certain options and control strategies that need to be included

[5] These systems can be used for WICF's under 3,000 square feet as long as the WICF is part of multiple loads

KRACK SYSTEMS

Use your QR reader to reference current information on www.krack.com/products.



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	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	NEW FACILITIES WITH SYSTEM CHARGE < 50 LBS GWP < 2,200	NEW FACILITIES WITH SYSTEM CHARGE > 50 LBS GWP < 150		LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	LOW TEMP	MED TEMP	POWER RATINGS EQUAL or LESS THAN 50 KW WITH < 1,500 GWP
CONDENSING UNITS																
H-Series	✗	✗	✓	✓	✓	✓	✓ [6]	✗	NA	✗	✗	✓	✓	✓	✓	✗
HE H-Series	✓	✓	✓	✓	✓	✓	✓ [6]	✗	✓	✓	✓	✓	✓	✓	✓	✗
Large Air-Cooled C-Series	✓	✓	✓	✓	✓	✓	✗	✗	NA	✓	✓	✓	✓	✓	✓	✗
COILS for WALK-IN COOLERS and FREEZERS																
GH / GL	NA	✓	NA	✓	NA	✓	✓	✓	NA	✗	✓	✗	✓	✓	NA	
LH	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
KR	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓		
MK	✓	✓	✓	✓	✓	✓	✓	✓	NA	✓	✓	✓	✓	✓		
MV	✗	✗	✓	✓	✓	✓	✓	✗		✓ [9]	✓ [9]	✓	✓	✓		✓
MS	✓	✓	✓	✓	✓	✓	✓ [7] [8]	✗ [7] [8]		✓	✓	✓	✓	✓		✓
SM / SV	✓	✓	✓	✓	✓	✓	✓ [7] [8]	✗ [7] [8]	✓	✓	✓	✓	✓	✓		
MONOBLOCK for WALK-IN COOLERS and FREEZERS																
Krack microDS [10]	NA	✓	✓	✓	✓	✓	✓	NA	NA	✓	✓	✓	✓	✓	✓	NA
CONDENSERS																
Levitor	NA	✓	✓	✓	✓	✓	✗	✗	NA	✓	✓	✓	✓	NA		
Microchannel		✓	✓	✓	✓	✓	✗	✗		✓	✓	✓	✓			

[6] Some Air- and Water-Cooled models

[7] CO2 required

[8] Certain models

[9] Available with 208 V / 230 V for WICF > 3,000 square feet

[10] Water-Cooled only

■ Not included