

# FROZEN IN TIME?

*A Cold Hard Look at the Future of Refrigeration.*

**Hillphoenix**®

*In the world of refrigeration, the looming impact of current regulations and the certainty of more restrictive and complex regulations have many in our industry frozen by indecision, wondering “what’s next?” The time has come to stop wondering and make a decision.*



## WHAT'S IT ALL ABOUT?

Simply, the refrigeration industry is in constant transition. New regulations, new environmental concerns, new ways to safeguard the health of the planet and all who inhabit it are coming. Some are already here. Some are already on the calendar for tomorrow.

What's the retail food industry doing to meet an uncertain future? Today, the industry's chosen commercial refrigerant in American

supermarkets is R-404A. It's a hydrofluorocarbon (HFC) that is better than the refrigerants it replaced — but it is still a greenhouse gas.

This poses a dilemma for retail customers. Do nothing in the face of certain change to come later. Or, make a choice from two options: update/retrofit existing equipment or build new.



## UPDATE OR BUILD NEW?

The need to choose will come sooner or later — for everyone. Even though HFC refrigerants like 404A have no ozone depletion potential, they are a greenhouse gas. Their use and production are already highly regulated by the EPA.

Updating or retrofitting may be a viable alternative to some. A tad less disruptive and perhaps more economical in the short term. However, in the long run, it could cost a lot more depending on future regulations.

Building new on the other hand, though initially more expensive, replaces leaking, problematic systems with new equipment. Plus, more importantly, it allows for the use of natural refrigerants

like CO<sub>2</sub> and hydrocarbons such as propane. Natural refrigerants are less expensive and abundant. They have zero impact on the environment and are more efficient, more economical and an all-around excellent choice for the future.

No matter what your choice, the answer is always Hillphoenix. We've been offering low GWP, ODP solutions for years. We know how to do this because our expertise is grounded in time-tested experience. If you choose to upgrade or retrofit, we've got you covered with one of the most comprehensive product offerings in the industry. Choose to build new and Hillphoenix is still the answer. We can cover everything from simple rack replacement to a complete, from-the-ground up refrigeration system.

# REFRIGERATION TECHNOLOGY TODAY AND TOMORROW.

No matter what choice our customers ultimately decide upon, the best solution always comes up Hillphoenix and The AMS Group.

Our experts have years of experience dealing with the confusing and sometimes conflicting regulations from the EPA, the Department of Energy, the U.S. Climate Alliance and especially CARB (California's regulations are the strictest in the industry). We make compliance easy to understand and implement. We are the industry's preeminent refrigeration supplier with food retail and industrial installations all across the globe. And we have the products, systems, and personnel to back up such a bold claim.

In addition, AMS offers a variety of products and services for turnkey solutions to regulations compliance. Plus, AMS provides industry-leading engineering, installation, commissioning and after-sales support.



**AdvansorFlex** — provides a natural refrigerant solution at a competitive price point for applications that require a smaller footprint.



**Advansor** — with over 7,000 installations worldwide, this technology utilizes the natural refrigerant CO<sub>2</sub> with zero impact on the ozone and a global warming potential (GWP) of one.



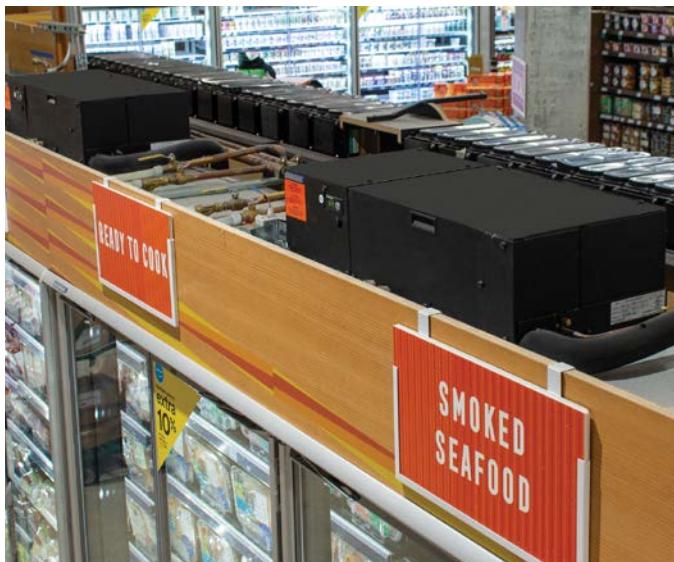
**Adaptapak** — utilizing a lower GWP, synthetic refrigerant, these distributed systems are mounted outside with a low-profile, compact design that is less noticeable.



**InviroPak** — distributed systems that reduce greenhouse gas emissions with several refrigerant options: R407A, R448A and R449A.



**All Natural R290** — low-charge propane systems that utilize lower GWP and ODP propane which works perfectly in air-cooled and self-contained display cases.



**SoloChill** — A micro-distributed system in a small, compact design with a smaller charge (<50 Lbs) of lower GWP synthetic refrigerant.



**Power Systems** — PowerWalls, PowerOn and PowerFlow provide remote monitoring services and can be adapted to any current, retrofit or new-build system.

# YOUR REGULATED FUTURE AT A GLANCE.

## From the EPA:

- Phase-out of class II ozone-depleting substances. Ban on remaining production and import of HCFC-22 and HCFC-142b.

While the US phased out CFCs and halons in the mid 90s, HCFC-22 (also called R-22) and HCFC-142b are the next two HCFCs on the chopping block.

- After 2020, the servicing of systems with R-22 will rely on recycled or stockpiled quantities.
- As of January 1, 2030, the ban on remaining production and import of all HCFCs will be complete.

- Clean Air Act Revised Section 608 Refrigerant Management Regulations

This rule modifies refrigerant management regulations for substitute refrigerants, such as HFCs.

## Coming from CARB:

These proposed regulations should be approved in December 2020. If not, they are a laundry list of what is coming.

- Refrigerants with a GWP greater than or equal to 150 will not be allowed in new, stationary refrigeration systems charged with more than 50 pounds.

**Compliance Date 1/1/2022**

- Refrigerants with a GWP greater than or equal to 750 will not be allowed in chillers (including process chillers) greater than -15 °F and ice rinks.

**Compliance Date 1/1/2024**

- Refrigerants with a GWP greater than or equal to 2,200 will not be allowed in new chillers ranging from -15°F through -58°F.

**Compliance Date 1/1/2024**

## From the D.O.E.

- 20% to 40% energy reduction for WICFs with medium-temp condensing and self-contained systems.

Penalties can be levied against manufacturers and suppliers who don't meet the minimum requirements.

**Compliance Date 1/1/20**

- 20% to 40% energy reduction for WICFs with low-temp condensing systems, low-temp, self-contained units and medium- & low-temp unit coolers.

**Compliance Date 7/10/20**

## Refrigerant Choices for Commercial Refrigeration Systems

Status	Refrigerant			Other Names/Components	ODP	GWP
	Class	Type	Number			
Past	AI	HCFC	R22	Freon-22	0.055	1810
	AI	HFC	R404A	R125/143a/134a, HP62	0	3922
	AI	HFC	R507A	R125/134a, AZ50	0	3985
Current	AI	HFC	R407A/H	R32/125/134a	0	2107/1495
	AI	HFC	R407F/C	R32/125/134a	0	2088/1744
	AI	HFC	I34A	Single Component Refrigerant	0	1430
High Pressure HFC	AI	HFC	R410A	R125/32, AZ-20, Puron	0	2088
Newer Blends	AI	HFO/ HFC	R450A	N13-1234ze/R134a	0	605
	AI	HFO/ HFC	S13A	XP10-1234yf/R134a	0	631
	AI	HFO/ HFC	R448A	N40 Honeywell	0	1387
	AI	HFO/ HFC	R449A	XP40 Chemours	0	1397
Natural Fluids	AI	CO <sub>2</sub>	R744	CO <sub>2</sub>	0	1
	B2L	NH <sub>3</sub>	R717	Ammonia	0	<1
	A3	HC	R290	Propane	0	3
	A3	HC	R600a	Isobutane	0	3
	A3	HC	R1270	Propylene	0	2



### **From the US Climate Alliance:**

The United States Climate Alliance is a bipartisan coalition of 25 governors committed to reducing greenhouse gas emissions consistent with the goals of the Paris Agreement. The Alliance is led by state governments and is focused on state-to-state cooperation to accelerate the deployment of climate solutions needed to help each achieve their climate goals.

1. Implement policies that advance the goals of the Paris Agreement, aiming to reduce greenhouse gas emissions by at least 26-28% below 2005 levels.

**Compliance Date 1/01/25**

2. Track and report progress to the global community in appropriate settings, including when the world convenes to take stock of the Paris Agreement.
3. Accelerate new and existing policies to reduce carbon pollution and promote clean energy deployment at the state and federal level.

## NOT IF, BUT WHEN.

The future will be here soon enough. Don't stay frozen in place while you wait for it. Make plans now to meet its challenges head-on. Decide how best to navigate its uncertain landscape and confusing regulations. It's time to get unstuck and take action to achieve the minimum interruption to daily operations and still realize the maximum ROI.

The question remains — retrofit or build new? The answer can only result from an honest evaluation of the age, condition, and type of equipment in current use. Retrofits may cost less initially but prevent the use of more favorable refrigerants. New builds may cost more initially, but over time, the increased cost will be more than made up by the smoother transition to tomorrow's more advanced technologies and more economical, future-proof natural refrigerants.

Either way, Hillphoenix and AMS are poised to lead the way through the next wave of regulations with superior equipment, a wealth of experience, and refrigeration products that set the standard for excellence across every industry category today and on into the future.

**Hillphoenix**

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