



Business Case for
Natural Refrigerants

June 5-7, 2017 / San Diego



ACCELERATE

ADVANCING HVAC&R NATURALLY

M A G A Z I N E

ACCELERATE AMERICA AWARDS



- Marc Chasserot's statement about *Accelerate America*
- Breaking down barriers
- 25 issues and counting; online at acceleratena.com, and in print.
- Send letters to michael.garry@shecco.com; letter of the month wins prize.
- Five awards
- Award criteria





ACCELERATE AMERICA AWARD
FOOD RETAIL



- A myriad of natural refrigerant applications.
- Starting in 2009 with secondary and cascade CO₂, including one retrofit.
- Nine transcritical CO₂ stores, starting in Brooklyn, NY, in December 2013.
- More than 50 propane stand-alone cases.





- Pioneering cascade CO₂ systems.
- In Dublin, Calif., one of four U.S. supermarkets with an ammonia/CO₂ cascade system.
- In Santa Clara, Calif., the first U.S. supermarket with propane/CO₂ a cascade system.
- About 265 lbs. of propane on the roof.





FOOD RETAIL - WHOLE FOODS MARKET



Three low-temperature propane chillers at Santa Clara store.



ACCELERATE AMERICA AWARD **INDUSTRIAL**



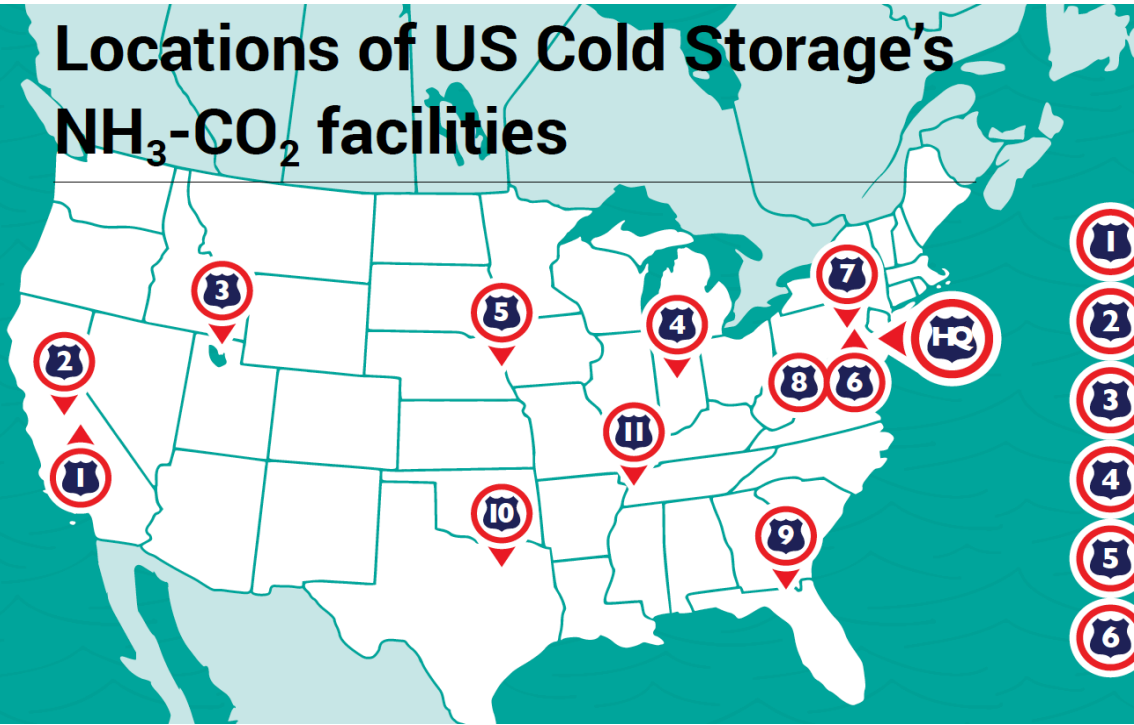
INDUSTRIAL – US COLD STORAGE

- In 2005, US Cold Storage installed one of one of the first industrial NH₃/CO₂ cascade systems in Bethlehem, PA.
- Defied industry nay-sayers.
- Brought CO₂ into industrial refrigeration, lowered ammonia charge below 10,000 lbs.
- 13 out of 36 plants use NH₃/CO₂ refrigeration.
- More installations on the way.
















Locations of US Cold Storage's $\text{NH}_3\text{-CO}_2$ facilities



Voorhees, NJ

- | | | | |
|---|---------------|--|----------------|
|  1 | Fresno, CA |  7 | Hazleton, PA |
|  2 | Turlock, CA |  8 | Quakertown, PA |
|  3 | Syracuse, UT |  9 | Lake City, FL |
|  4 | Lebanon, IN |  10 | Dallas, TX |
|  5 | Omaha, NE |  11 | Covington, TN |
|  6 | Bethlehem, PA | | |



ACCELERATE AMERICA AWARD FOODSERVICE



- Since 2015, all new chest freezers globally have been HFC-free.
- Since 2016, all new ice-cream chest, upright and island freezers globally have used hydrocarbons, either propane or isobutane.
- By 2020, all new proprietary cold beverage dispensers made by Nestlé Professional will use hydrocarbons.





Nestlé, located on the shores of Lake Geneva, is working on putting a QR code on freezers that customers can scan to access information on natural refrigerants.



ACCELERATE AMERICA AWARD **INNOVATION OF THE YEAR**



- Introduced in December 2015, the AdvansorFlex is a smaller, less costly version of the Advansor transcritical CO₂ system.
- Hillphoenix acquired Danish manufacturer Advansor in 2011.
- Advansor has a downsized system called Valuepack, shown here with a heating/air-conditioning cassette at Chillventa 2016.





- AdvansorFlex shown here enclosed and at FMI Connect in June, 2016.
- In June 2016, AdvansorFlex had already been installed in 30-40 small-format U.S. stores.
- Easier installation and maintenance, 5%-18% lower energy costs.





INNOVATION OF THE YEAR - HILLPHOENIX

- From left: Scott Martin and Eduardo Navarro de Andrade of Hillphoenix.
- Hillphoenix has led the installation of CO₂ systems in North America with its Second Nature line, which includes secondary, cascade and transcritical.
- By the end of 2016, Hillphoenix was on course to produce close to 250 transcritical units since 2013.
- Hillphoenix has trained thousands on CO₂ technology through its Learning Center.
- Hillphoenix is changing the marketplace with proven CO₂ technology.





ACCELERATE AMERICA AWARD
PERSON OF THE YEAR



PERSON OF THE YEAR - PAUL ANDERSON , TARGET

- At ATMOsphere America in 2014, Paul announced that a CO₂ hybrid cascade system would be the prototype for new Pfresh stores.
- By the end of 2017, Target will have a minimum of 13 stores using CO₂ for refrigeration, including two transcritical stores.
- As of early January 2017, Target had installed self-contained cases using propane refrigerant in 580 of its more than 1,800 U.S. stores.





PERSON OF THE YEAR - PAUL ANDERSON, TARGET



At the White House in 2015, Paul pledged that self-contained equipment at Target would be HFC-free. At the FMI Energy conference in 2015, he said propane used 53% less energy than R134a, with an annual savings of \$42,920 (equivalent to about \$4.2M in grocery sales) for a chain of 100 stores with 10 cases per store. Target plans to operate stores with only self-contained cases.



PERSON OF THE YEAR - PAUL ANDERSON, TARGET





Congratulations to the winners!