



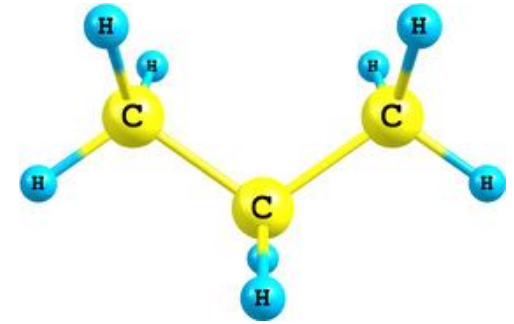
**ATMO**  
**sphere**  
business case  
**natural refrigerants**

25 & 26 June - Atlanta, Georgia



***R 290 the End Game***  
***-or-***  
***Proof of Concept?***

*Presented by Gary Cooper*



- ✓ **Glycol Loop Designed Specifically to Evaluate R-290**
- ✓ **Sub Metered to Monitor Performance**
- ✓ **Safety**
- ✓ **Serviceability**
- ✓ **Total Cost of Installation**

# Test Store Overview

- ✓ **Retail Grocery Store 34,000 sq. ft.**
- ✓ **35 Condensing Units**
- ✓ **88 Freezer Doors**
- ✓ **170 Oz. Total Propane Charge**
- ✓ **250,000 BTU THR Capacity**
- ✓ **Husmann Cases**
- ✓ **Embraco Compressors**
- ✓ **DX R-407F Split Header Racks for  
Rest of Fixtures and Heat Rejection  
Loop**







**Frozen Food**

**Frozen Food**

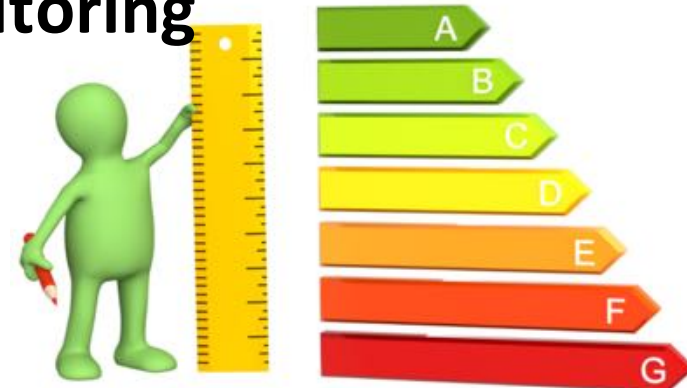
**Frozen Food**

**Frozen Food**

**Frozen Food**

# Pros and Cons

- ✓ **Single Point Electrical Connection**
- ✓ **Energy Reduction Exceeded Expectations**
- ✓ **Extended Compressor Life Due to Lower Discharge Temps**
- ✓ **Straightforward Installation**
- ✓ **Fixed Capacity Due to Design**
- ✓ **Higher Fixture Cost**
- ✓ **Minimal Troubleshooting / Monitoring Information**





Thanks!