

# Low-GWP & Energy Efficiency Expo



# Welcome

*Day 1: January 15<sup>th</sup>, 2020*

## Introduction

Danielle Wright, NASRC

Michael Bushey, SCE

**THANK YOU!**  
**Southern California Edison**

Paul, Yung, Gwen, Andre,  
Henry, Roger, Doris & Marisa

# NASRC Board of Directors



**Bryan Beitler**  
Coolsys  
CEO/President



**Todd Washburn**  
True  
Secretary



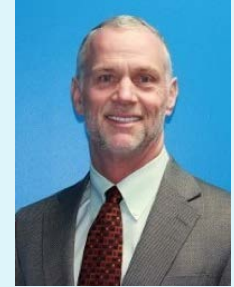
**Peter Dee Danfoss**  
Chairman



**Keilly Witman**  
HEB



**Aaron Daly**  
Whole Foods



**Jim McClendon**  
Walmart



**Tristam Coffin**  
Whole Foods



**Michael May**  
Hillphoenix



**Darren Russell**  
Carter



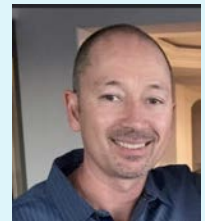
**Mark Schmalz**  
Parker



**Paul Conlon**  
BITZER



**Todd Ernest**  
Climate Pros



**Frank Davis**  
Sprouts

# Expo Exhibitors



AHT Cooling Sys...



Axiom Exergy



Bacharach



Baltimore Aircoil...



BITZER US



Carel USA



Carlyle Compres...



Carnot Refrigera...



Cushing Terrell



Danfoss



Dorin



Embraco



Emerson



Guntner US



Hillphoenix



Howe Corporati...



Hussmann Corp...



Kysor Warren



Mayekawa USA



NASRC



Parker Hannifin ...



Pure Cold



Refrigerant Man...



Rivacold America



Systems LMP



True Manufactur...



VaCom Technolo...



Viking Cold Solu...



Zero Zone

**THANK YOU!**  
**Volunteers**



# The NASRC

**501c3**

Non-Profit Organization

**125+**

Members

**24,000+**

Supermarket locations

**MISSION:** Remove barriers to adoption of natural refrigerants

## Goals

- ▶ Achieve cost parity
- ▶ Drive data transparency
- ▶ Ensure service readiness

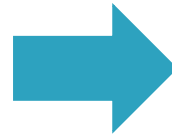
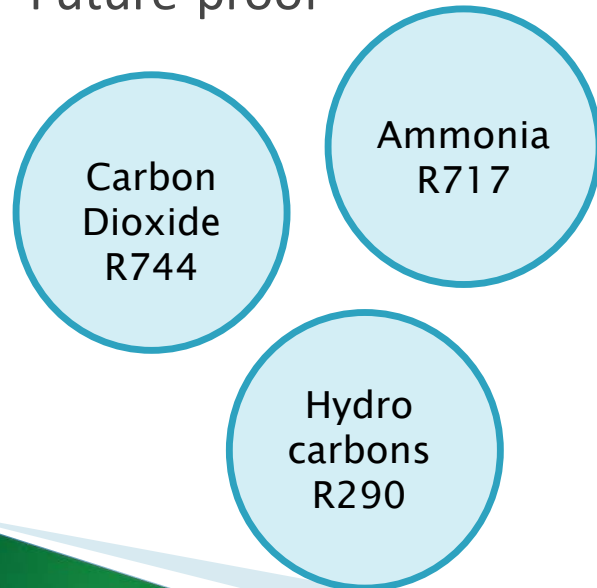
# NASRC Members



# Why Natural Refrigerants?

## Benefits

- Climate friendly
- Energy efficiency
- Emissions reduction
- Future-proof



## Barriers

- Higher costs
- Uncertain ROI
- Service concerns
- Low demand

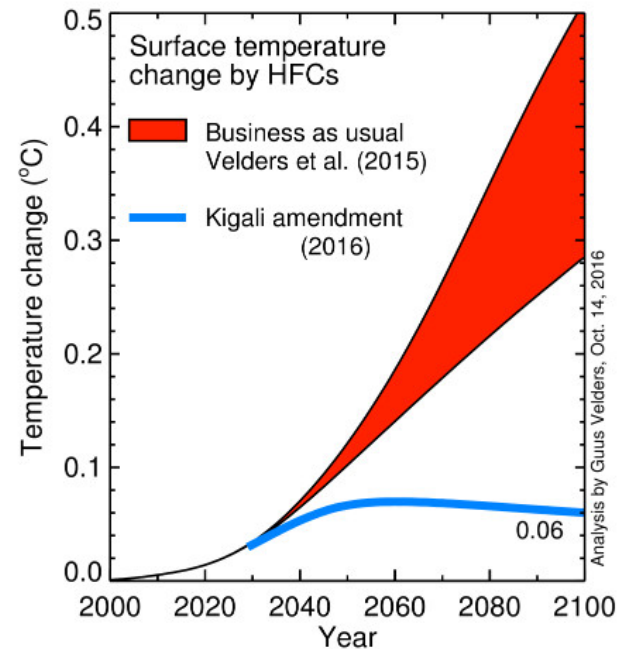




# Why is an Alternative Needed?

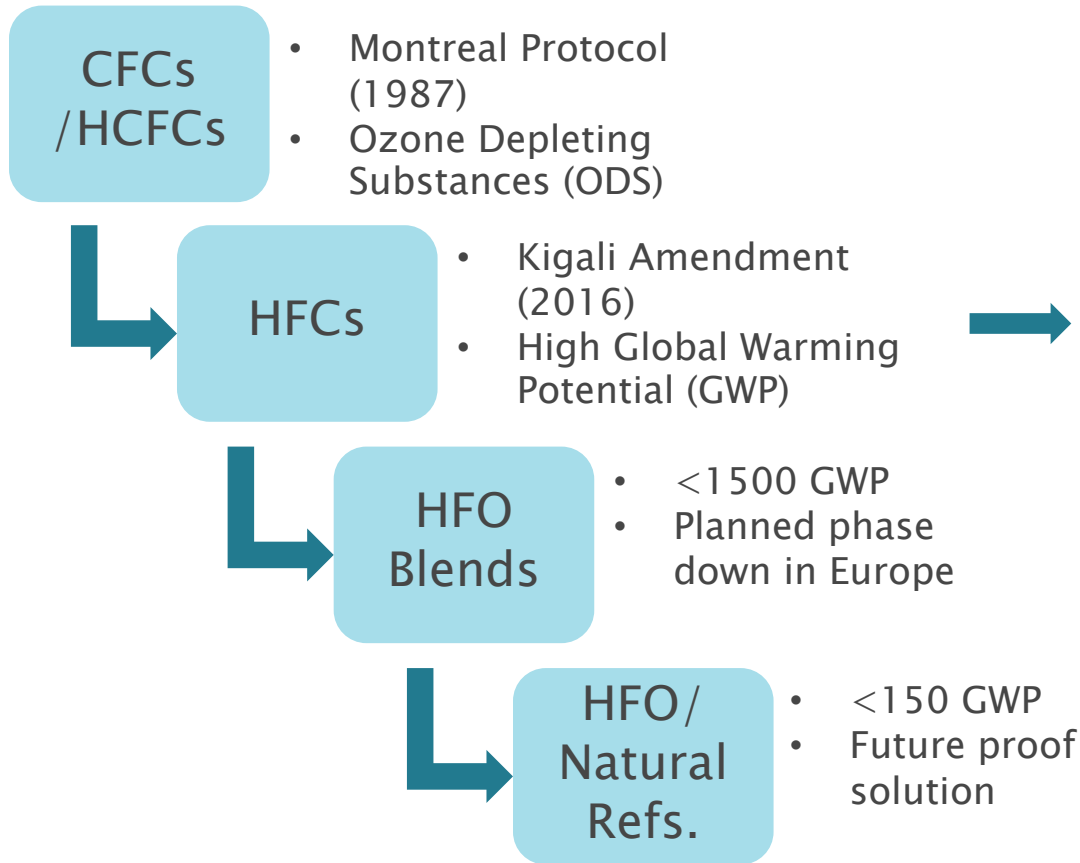
## Hydrofluorocarbons (HFCs)

- Potent Greenhouse Gas (GHG)
- +1,000 times more heat-trapping power than CO<sub>2</sub>
- Fastest growing GHG globally
- Mitigation can avoid 0.5 degree C of warming by 2100

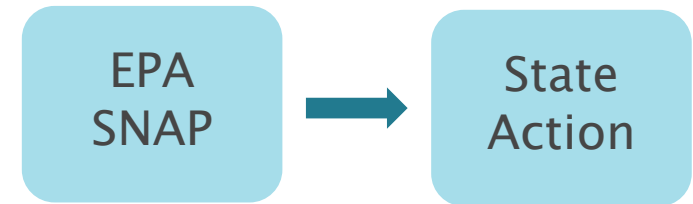


# Refrigerant Regulations

## GLOBAL



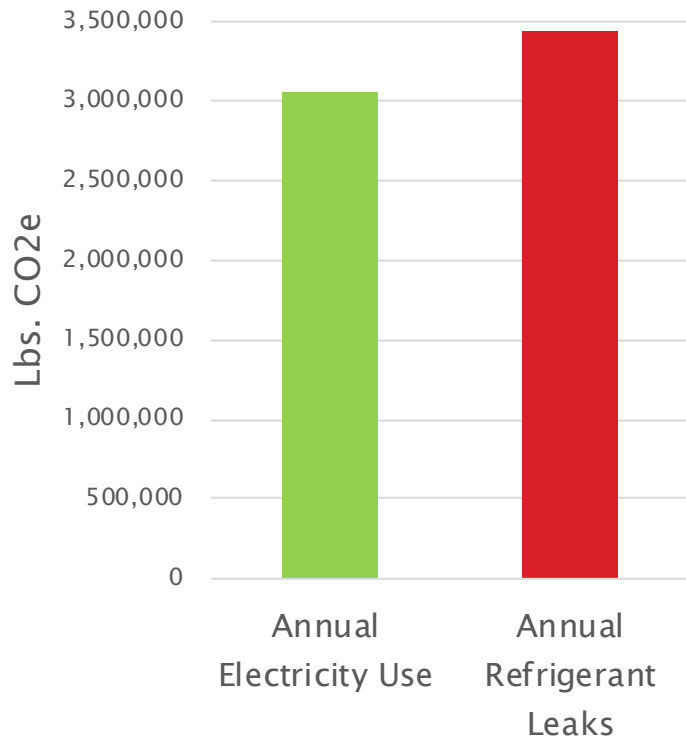
## UNITED STATES



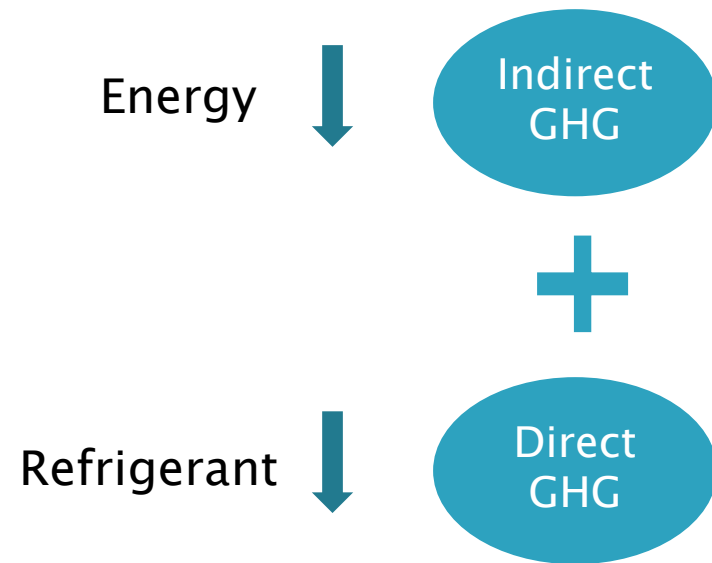
On Hold

# Total GHG Emissions

## Electricity Use vs. Refrigerant Emissions



## TEWI = Total Equivalent Warming Impact

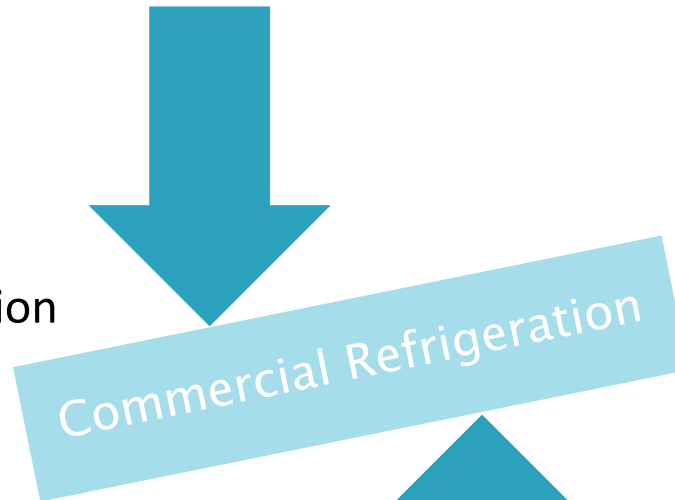


EPA Average Supermarkets GHG Impact:  
<https://www.epa.gov/greenchill/average-supermarkets-greenhouse-gas-impacts>

# California Regulations

## Refrigerant GWP

- ▶ AB 32
- ▶ SB 350
- ▶ SB 1383
- ▶ SB 1013
- ▶ CARB HFC Reduction Measures



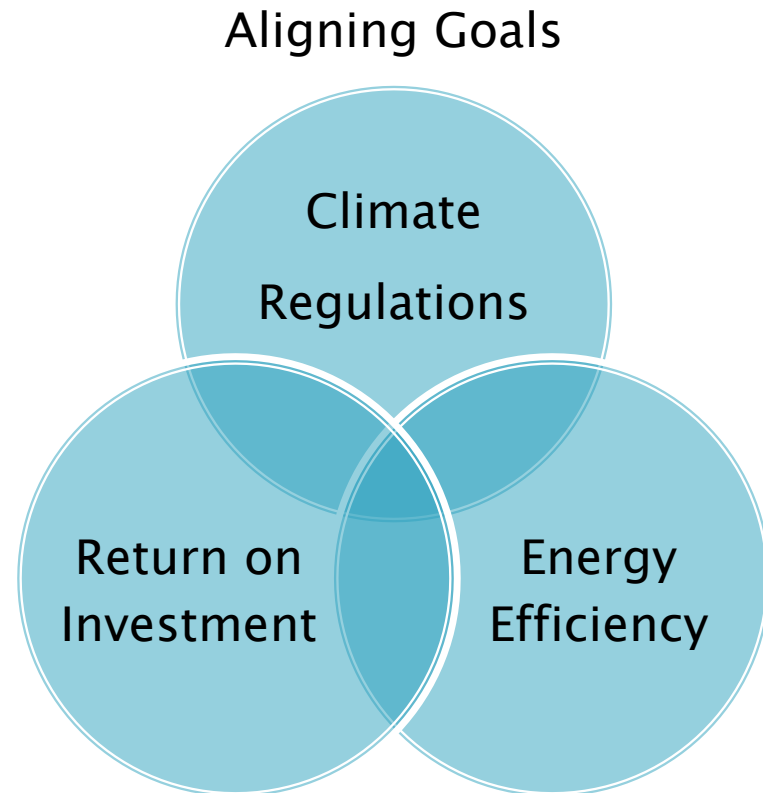
Decarbonization trends in collision??

## Energy Efficiency

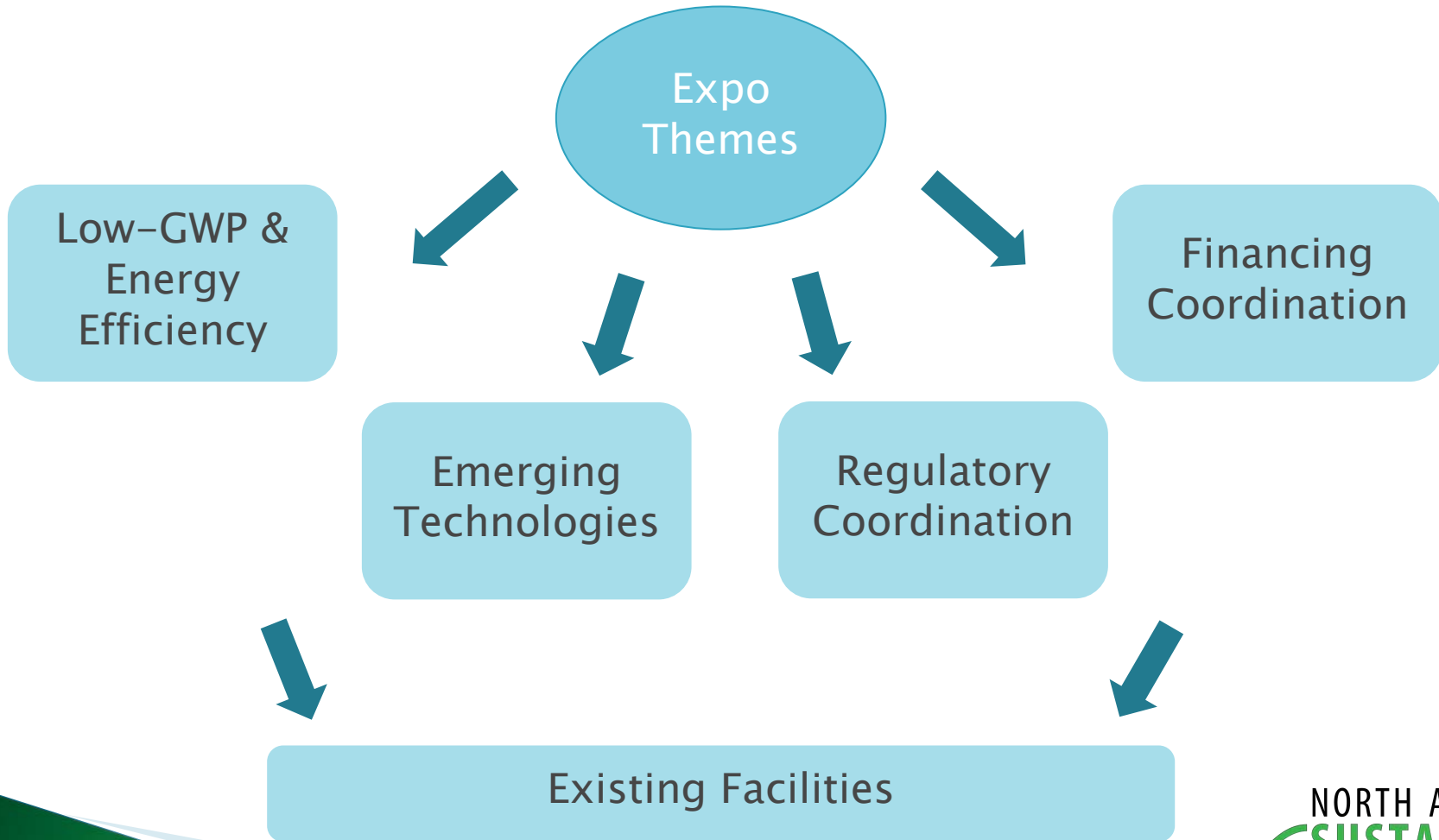
- ▶ AB 32
- ▶ SB 350
- ▶ Zero Net Energy (ZNE) - Electrification
- ▶ SB 1013

# NASRC Low-GWP Workshop

- ▶ Can low-GWP also be energy efficient?
- ▶ Can utilities incentivize overall GHG reduction?
- ▶ What are the gaps?



# Low-GWP & Energy Efficiency Expo



# Expo Agenda: Innovation Center

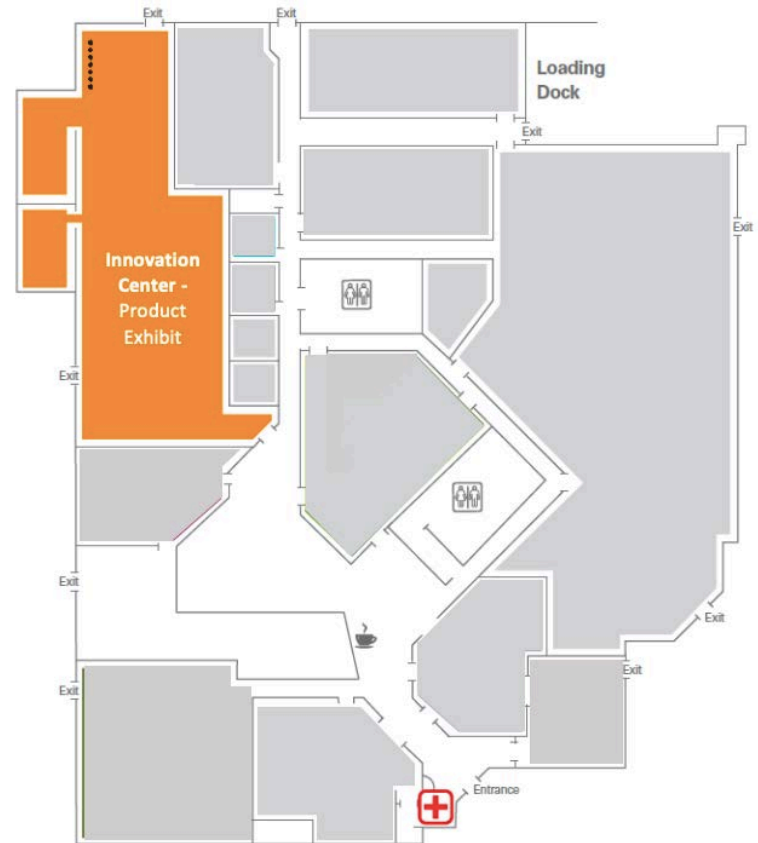
## PRODUCT EXHIBIT

### ▶ **Wednesday, January 15th**

- 9:45 AM – 1:00 PM
- 4:30 PM – 6:30 PM
- *Networking Reception*  
5:00 PM – 6:30 PM

### ▶ **Thursday, January 16th**

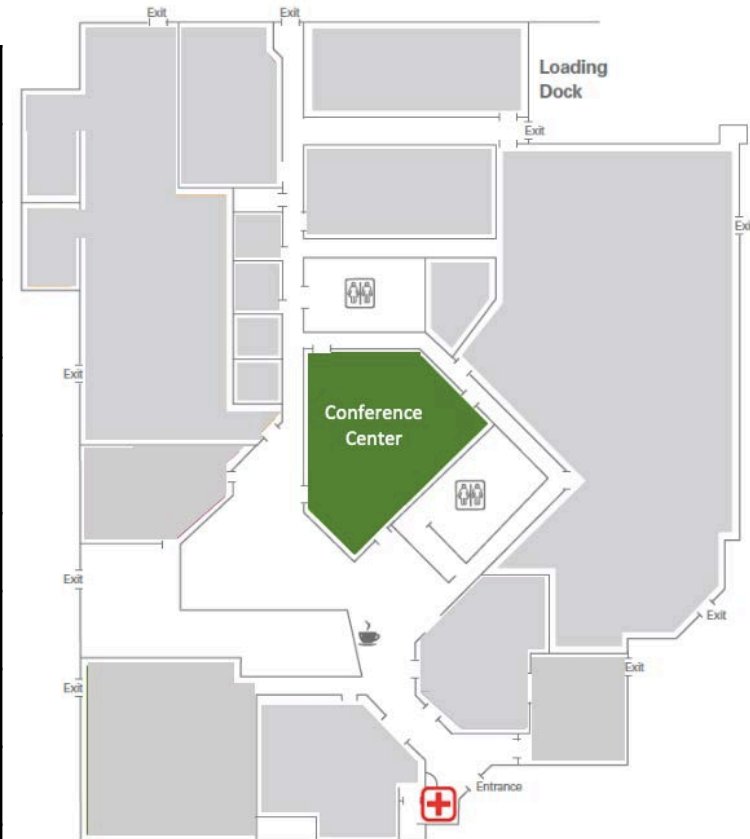
- 8:45 AM – 10:00 AM



# Expo Agenda: Conference Center

## TECHNOMERCIALS & CASE STUDIES

Wednesday, January 15th	<b>Technomercial 1:</b> Baltimore Aircoil Company	10:00AM – 10:15AM
	<b>Technomercial 2:</b> Dorin	10:20AM – 10:35AM
	<b>Technomercial 3:</b> Systems LMP	10:40AM – 10:55AM
	<b>Technomercial 4:</b> BITZER US	11:00AM – 11:15AM
	<b>Technomercial 5:</b> Carnot Refrigeration	11:20AM – 11:35AM
	<b>Technomercial 6:</b> Emerson	11:40AM – 11:55PM
	<b>Technomercial 7 :</b> Viking Cold Solutions	4:35PM – 4:50PM
	<b>Case Study 1:</b> VaCom Technologies	4:55PM – 5:10AM
Thursday, January 16th	<b>Technomercial 8:</b> Bacharach	5:15PM – 5:30PM
	<b>Technomercial 9:</b> Hillphoenix	9:00AM – 9:15AM
	<b>Case Study 2:</b> SEER2 & Zero Zone	9:20AM – 9:35AM
	<b>Case Study 3:</b> Zero Zone, SEER2, & Whole Foods Market	9:40AM – 9:55AM

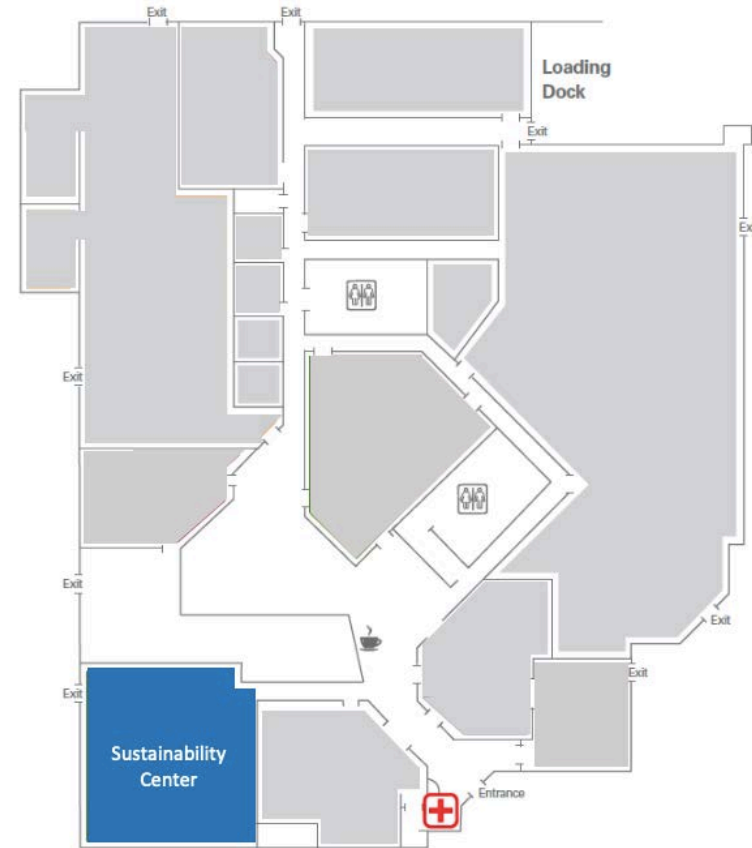




# Expo Agenda: Sustainability Center

## GENERAL SESSIONS

Wednesday, January 15th	
9:00AM - 9:45 AM	Welcome & Introductions
1:00PM - 2:30PM	Emerging Technologies "Shark Tank"
3:00PM - 4:30PM	Energy & Utility Policies
Thursday, January 16th	
8:00AM - 8:45 AM	California Refrigerant Regulations
10:00AM - 11:30AM	Existing Facilities Session
11:30AM - 12:00PM	Closing Remarks



Low-GWP & Energy  
Efficiency Expo



# Thank You!

*Special Thanks to SCE for Hosting*