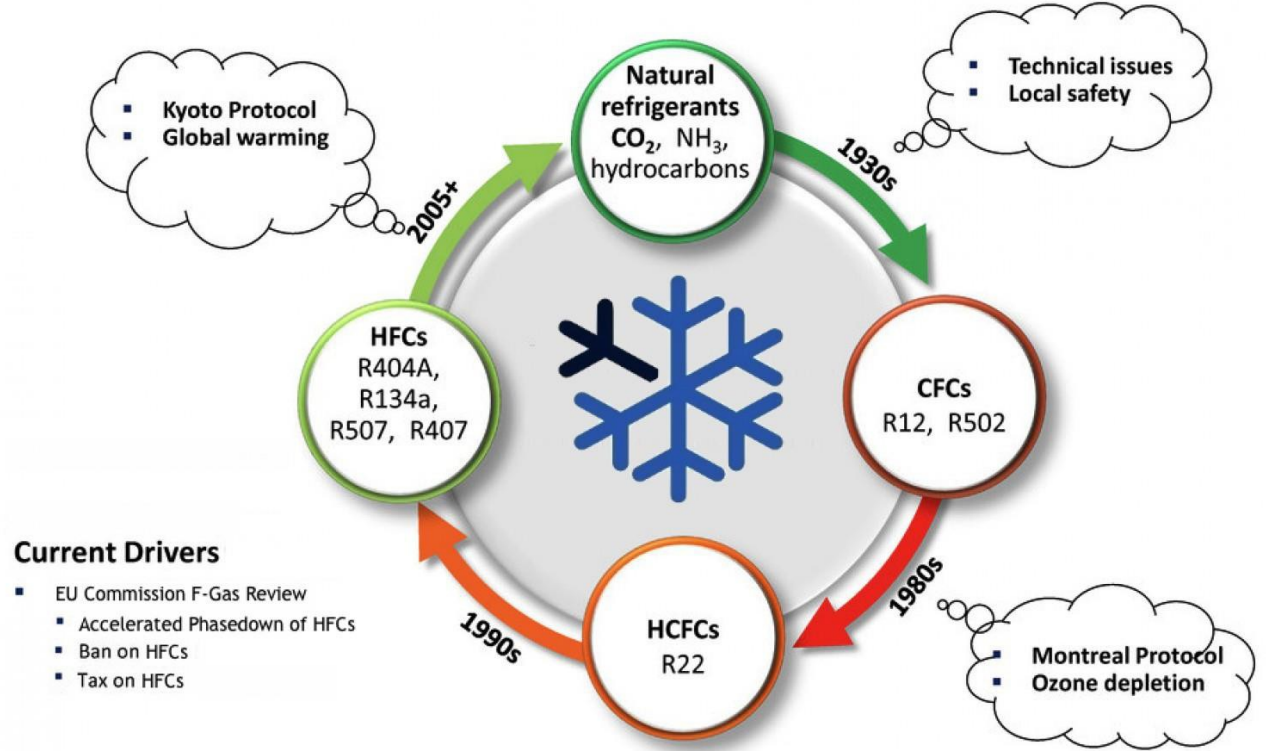


# Laboratory Assessment of Propane Type Horizontal Self-Contained Display Cases (ET15SCE1030)

Edwin Hornquist  
Senior Emerging Technologies Program Manager  
SCE  
June 5, 2019

The Closed Cycle .....Driving Natural & Alternative Refrigerant Solutions

Phasing Out  
the “Bad”  
Refrigerants  
...decades  
of effort



Senate Bill  
1383  
passed—  
40%  
reduction  
in GHGs by  
2030...

With the help of natural refrigerants, the California Air Resources Board plans to roll back emissions of HFCs in the state by 40% of 2013 levels by 2030, setting a standard for the rest of the U.S. and much of the world

— by Michael Garry



California, the most populous state in the U.S. with more than 39 million people, has the world's eighth largest economy. Due in part to its reliance on cars, the state emitted more greenhouse gas (17 metric tons) per capita in 2012 than every other leading world country except the U.S. itself (18.6 metric tons), according to the World Resources Institute.

But California, known as the Golden State, is also among the world's most aggressive economies when it comes to crafting policy to reduce greenhouse gas emissions. In 2006, the state passed its landmark California Global Warming Solutions Act, AB 32, which calls for greenhouse gas emissions to be cut to 1990 levels by 2020.

## Senate Bill 1013

# California Cooling Act-passed September 2018

- Supports SB1383 Short Lived Climate Pollutant regulations – 40% reduction in GHG emissions by 2030 (2013 baseline)
- HFCs are considered to be Super Pollutant – stay in the atmosphere for up to 14 years – impacts are global
- HFCs are considered fastest growing type of climate emission
- Cooling Act passed September 2018 provides incentives for reducing Global Warming Potential (GWP) – amounts and admin TBD – CPUC studying now...
- Cooling Act law will help industry reduce CO2e emissions by 17 million metric tons by 2030.

## ET15SCE1030: R-404A versus R-290 case

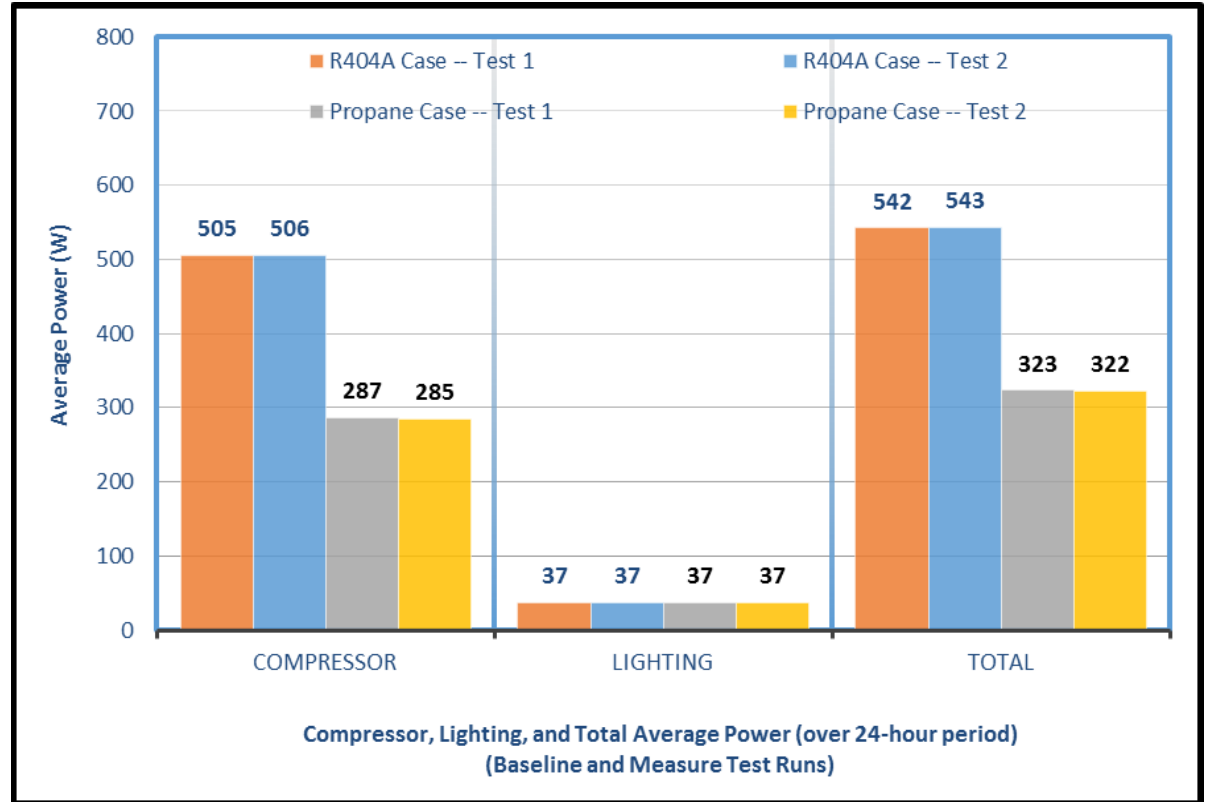


R 404A – 3,800 GWP

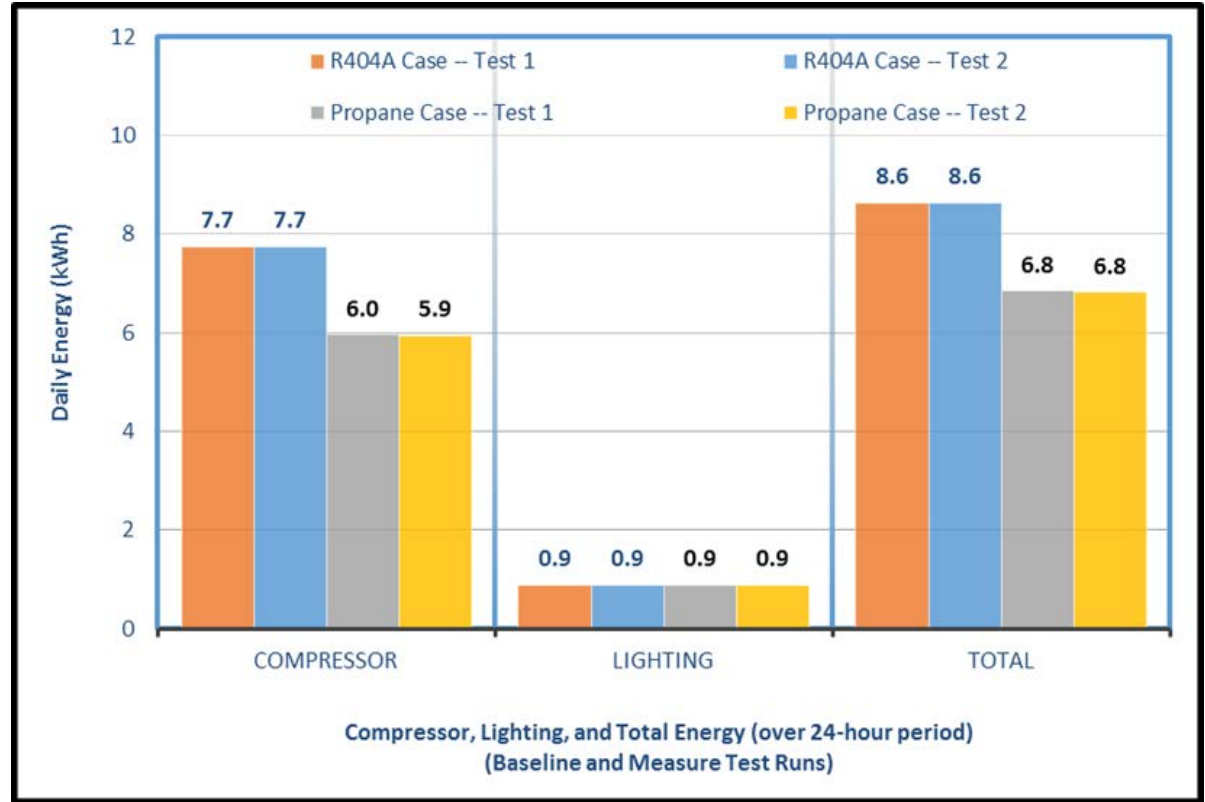


R 290 – 3 GWP

Demand  
savings...



# Consumption savings...



## Results...

- 20% less consumption
- 40% less demand
- 1.7 kWh/day per case
- Typical store has 8-10 cases
- Annual savings = 620 kWh per case
- Annual savings = ~5,000 kWh per store
- GWP 3,800 vs 3
- Deemed incentive has been retired
- Daikin has recently purchased AHT, the manufacturer of these cases.
- Whole Foods was a partner in this project...



# Thank You!

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**Edwin Hornquist**

Senior Emerging Technologies Program Manager

SCE

[Edwin.Hornquist@sce.com](mailto:Edwin.Hornquist@sce.com)

This project was funded by the California Emerging Technologies Program.

For more information, contact Paul Delaney at [Paul.Delaney@sce.com](mailto:Paul.Delaney@sce.com)

The project report can be found at <https://www.etcc-ca.com/reports/laboratory-assessment-propane-type-horizontal-self-contained-display-cases>