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## **So What is the Opportunity?**

Paul Delaney

Senior Engineer



Southern California  
Edison Company

- **One of the Country's Largest Investor-Owned Utilities**
  - 50,000 square miles
  - 14 million residents
  
- **23 years of EE Results**
  - **23 Billion kWh Saved**
    - ✓ Enough to power **3.4 million** homes
    - ✓ GHG Reduction – **10.4 million** metric tons
    - ✓ Equivalent of taking **2.2 million** cars off the road
  
- **In 2015: 857 Million kWh saved**



# Customer Choices - cross-cutting opportunities....

- End-users will need choose new equipment/technologies to meet their refrigeration requirements
- Typical end-users are industrial and commercial customers:
  - Refrigerated warehouses
  - Supermarkets
  - Food service
  - Hospitality
  - Food processing/manufacturing
  - Office buildings...

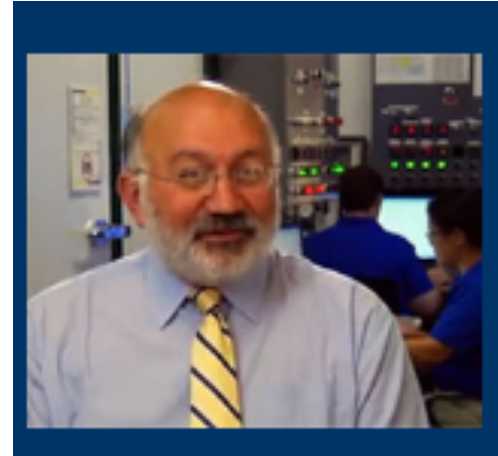
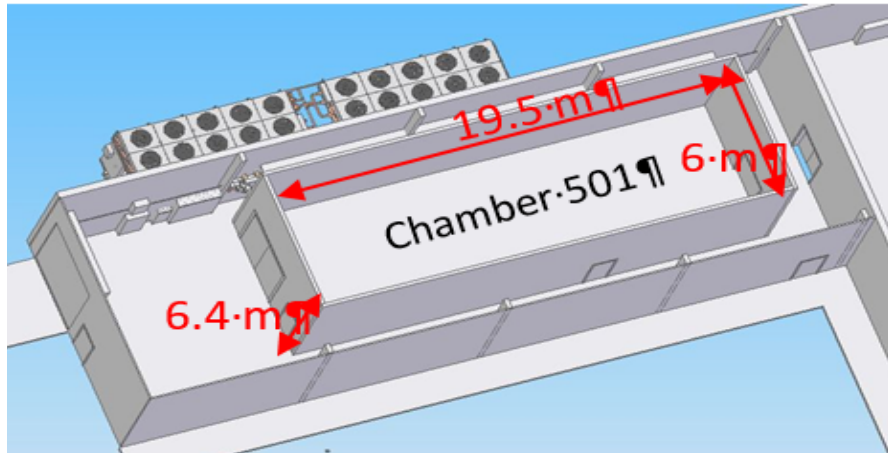




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Lab testing to understand performance of new systems  
....determine load profiles...

- EPRI
- Creative Thermal Solutions
- Southern Company, Bonneville Power Authority, SDG&E, and SCE...



# Incumbent versus new design with incentives...



Low Charge Ammonia



Baker - Port of Long Beach  
Southgate, CA



GCS -



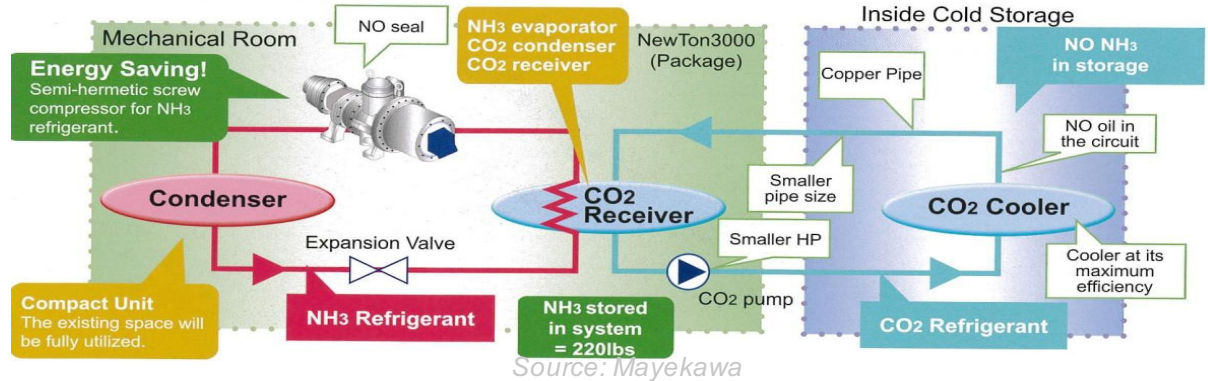
# Low Charge Ammonia – CO2

- **NewTon 3000**

- Low charge ammonia  
primary, CO<sub>2</sub> secondary
- 2 stage compact screw compressor
- VFD speed control
- Double economizer



- **First U.S. installation**



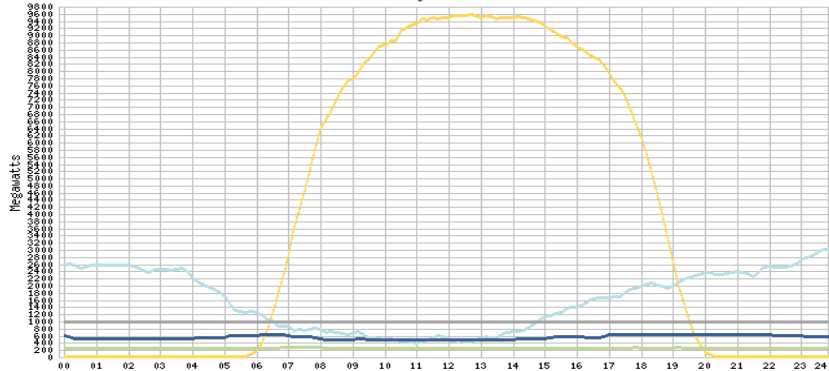
## What can the Incentive Program look like...

- It is about influencing the customer!
- Custom program with energy models
- Energy savings financial incentives
  - 595,252,836 kWh market size (2015 est.)(\$.08/kWh)
  - 67 GW (\$150/kW)
- Plus Demand Response
- Plus GHG reduction incentives (\$25/ton-SMUD)
- Plus Water reduction savings
- Requires cooperation and education

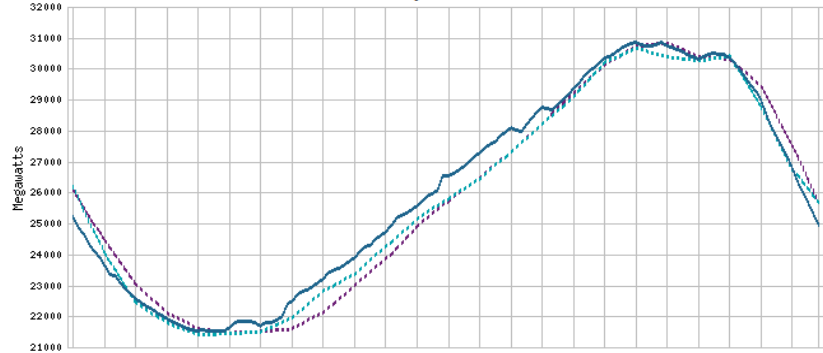


# So what are the opportunities...

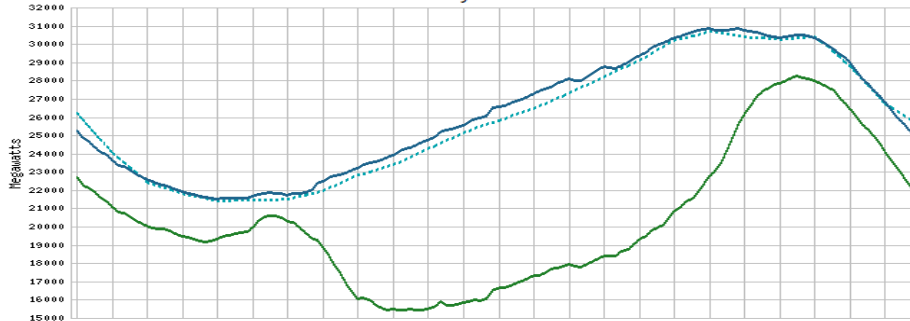
Yesterday's Renewables



Yesterday's Demand



Yesterday's Net Demand



- Energy Efficiency
- Flexible DR
- PLS...
- GWP
- Sustainability

*It's about managing demand and costs...*



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Thank you very much!

