

# Leveraging Carbon Finance for Advanced AC/Refrigeration

Jeff Cohen, EOS Climate 12 June 2012



#### **AGENDA**

**EOS Background** 

Carbon Credits from Air Conditioning/Refrigeration Projects

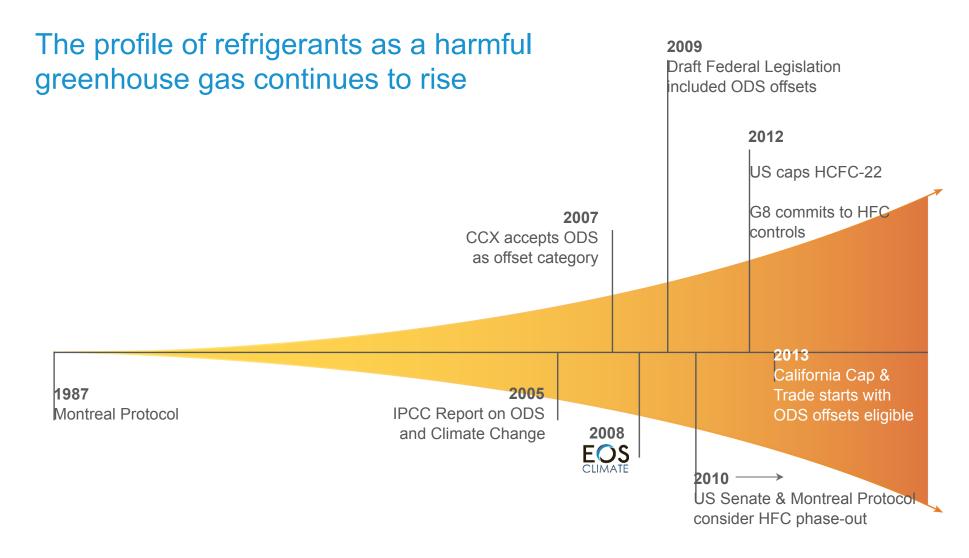
**Case Studies** 

California Cap and Trade

**Emerging Carbon Markets** 

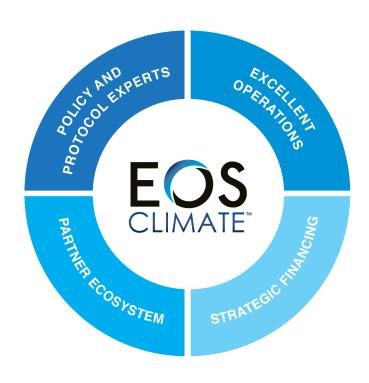
Economic and CSR Value for Comprehensive Refrigerant Management

#### **REFRIGERANTS & CLIMATE**



#### **ABOUT EOS CLIMATE**

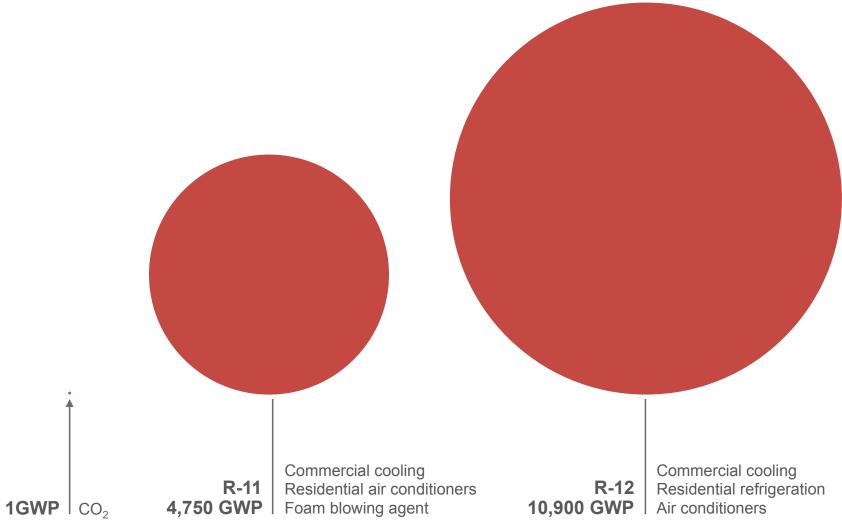
Leader in applying carbon finance to end-of-life refrigerants and deployment of new technologies



#### **INNOVATIVE SYSTEM**

- Originated ISO GHG protocol for ODS destruction
- → First integrated, transparent system for refrigerant management & destruction
- Generated >2 Million tons of verified emission reductions to date
- → >20 independent project cycles

#### CFCS PRODUCED PRIOR TO PHASEOUT DEADLINES REMAIN IN WIDE USE

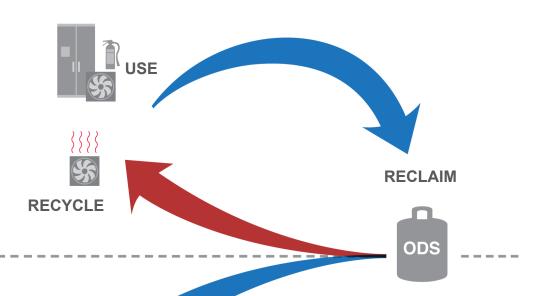


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#### CARBON CREDITS FROM DESTRUCTION OF CFC REFRIGERANTS

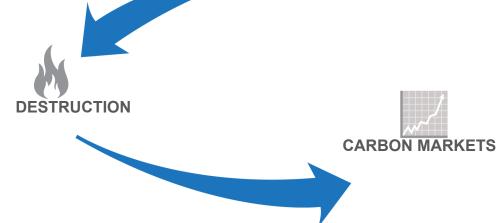
#### **Business As Usual**

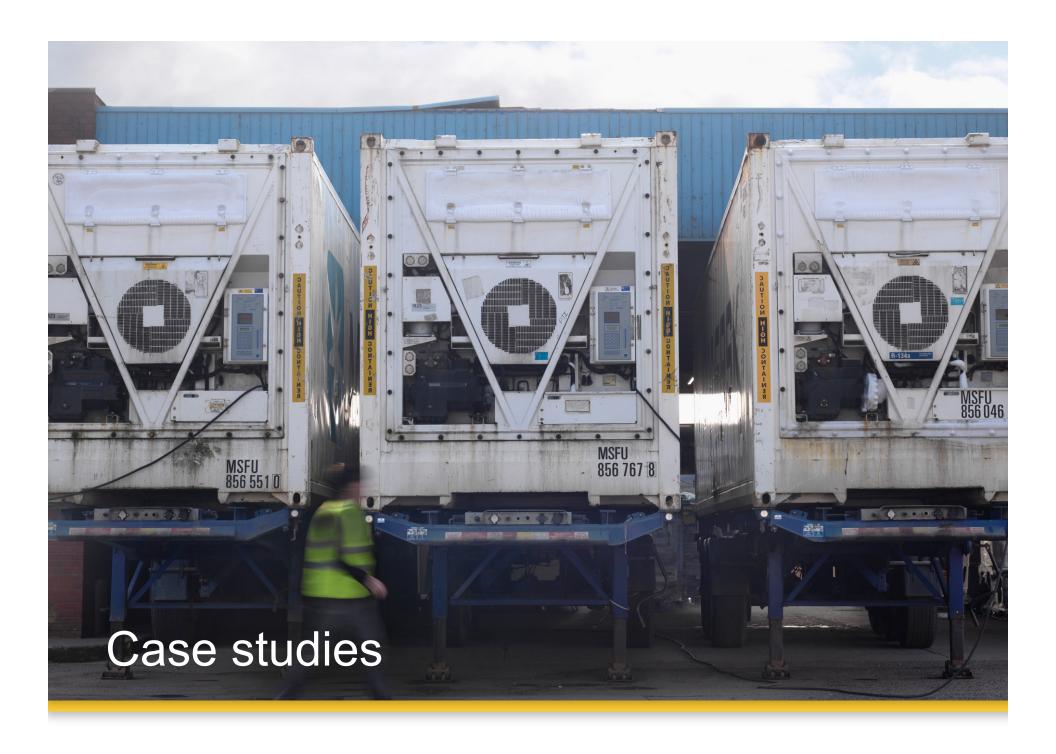
Out of Sight, Out of Mind
Reclaimed ODS is recycled and
re-used in old equipment, which
leaks up to 30% per year.



## Responsible Management

Reclaimed ODS is permanently and safely destroyed. This creates a verifiable and easily measured emission reduction.





#### U ROCHESTER CHILLER RETROFIT



Accelerated retirement of CFC-based chilled water plant

Prevented 56,000 tons of CO2e of emissions in first implementation phase

University realized a "rebate" on new chiller

#### **APPLIANCE RECYCLING**



CFC refrigerant and foam blowing agents are extracted, processed and destroyed

Proper processing prevents emissions ~5 tons of CO2eq per fridge and insures compliance with EPA RAD

Carbon credits help offset cost of take-back programs

### JACO, HAYWARD CA, FRIDGE HULLS & FOAM

Instead of landfill, CFC-11 in insulation foam is extracted and destroyed



#### **CAP-AND-TRADE IN CALIFORNIA**

2013-2020 emission controls to reach 1990 baseline

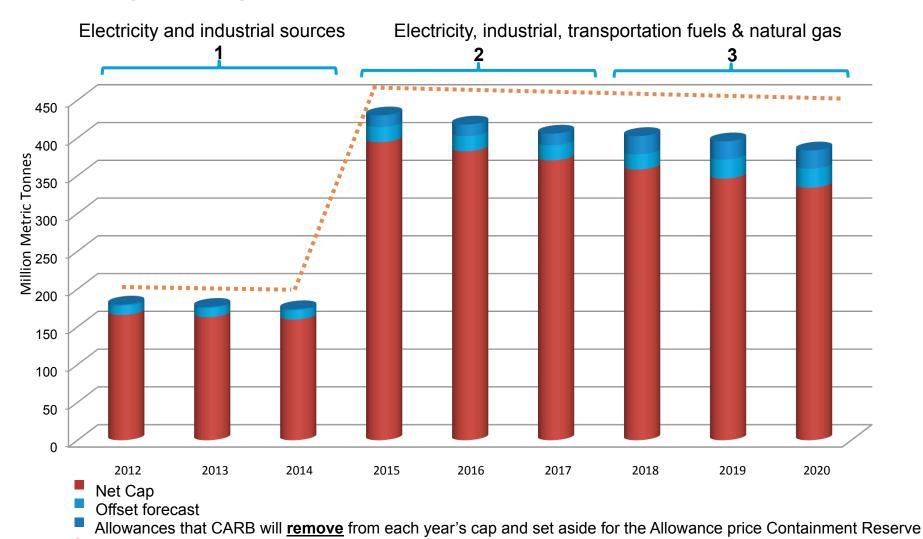
→ ~300 businesses/600 facilities subject to emission limits

Up to 8% of compliance obligation can be met with offsets

ODS destruction is one of 4 approved protocols

- Eligibility extends to all U.S. projects

#### CALIFORNIA COMPLIANCE MARKET



**BAU** emissions forecast

#### **BEYOND CALIFORNIA: EMERGING GHG MARKETS**

Existing or Near-Term Market	Limits in Place	Under Development	Under Consideration
EU/CDM	Australia	Brazil	Chile
RGGI	South Korea	Mexico	Costa Rica
Quebec	South Africa	China	Indonesia
New Zealand			Thailand
Japan			Vietnam
			Jordan
			Ukraine

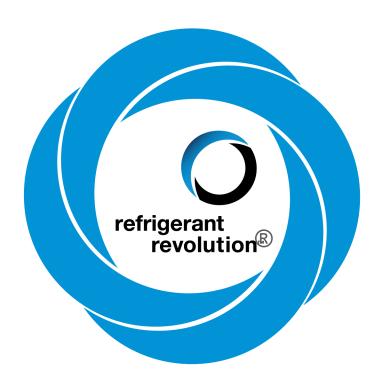
#### **BEYOND CFCS: INCENTIVES FOR AC/REFRIGERATION**

R22/HFC transition

PACE and other energy efficiency programs

Comprehensive refrigerant management

## REFRIGERANT MANAGEMENT: ENHANCED ENVIRONMENTAL AND ECONOMIC RETURNS



- → EOS enables recovery, tracking, transport, processing, destruction, 3rd party verification and sustainability metrics for CSR
- Closed loop management of all refrigerants
- → Move beyond compliance/risk mitigation
- Optimize assets
- Cost savings can be applied to technology transitions

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