

green cooling association



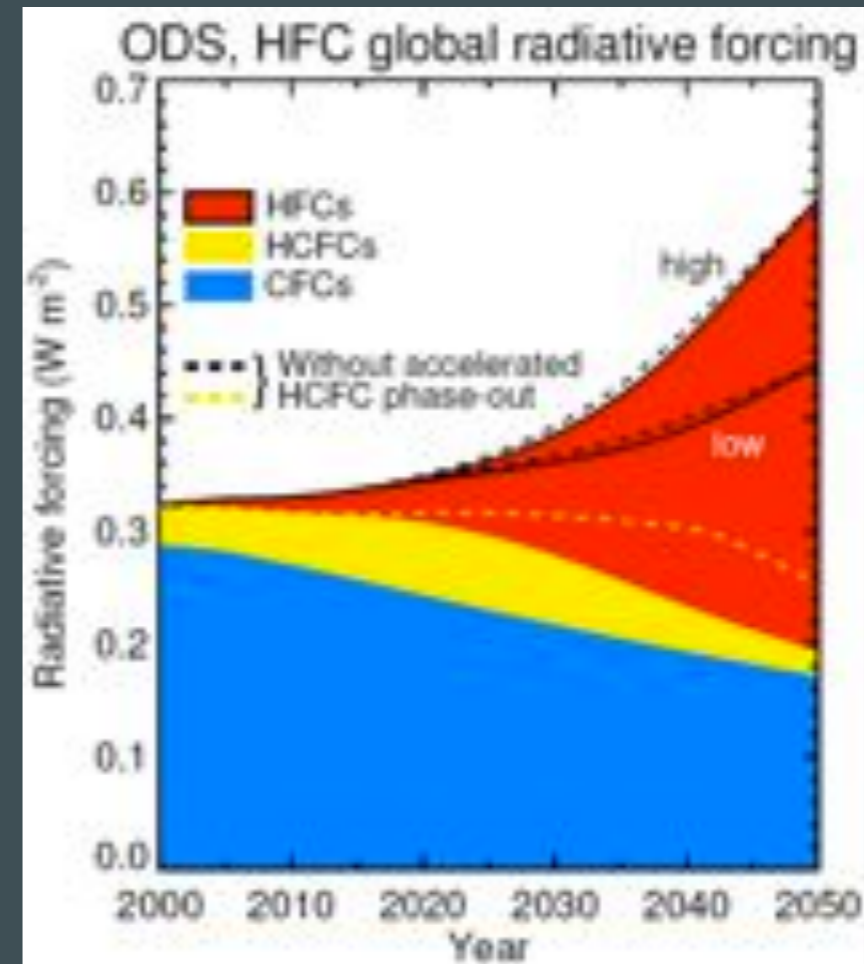
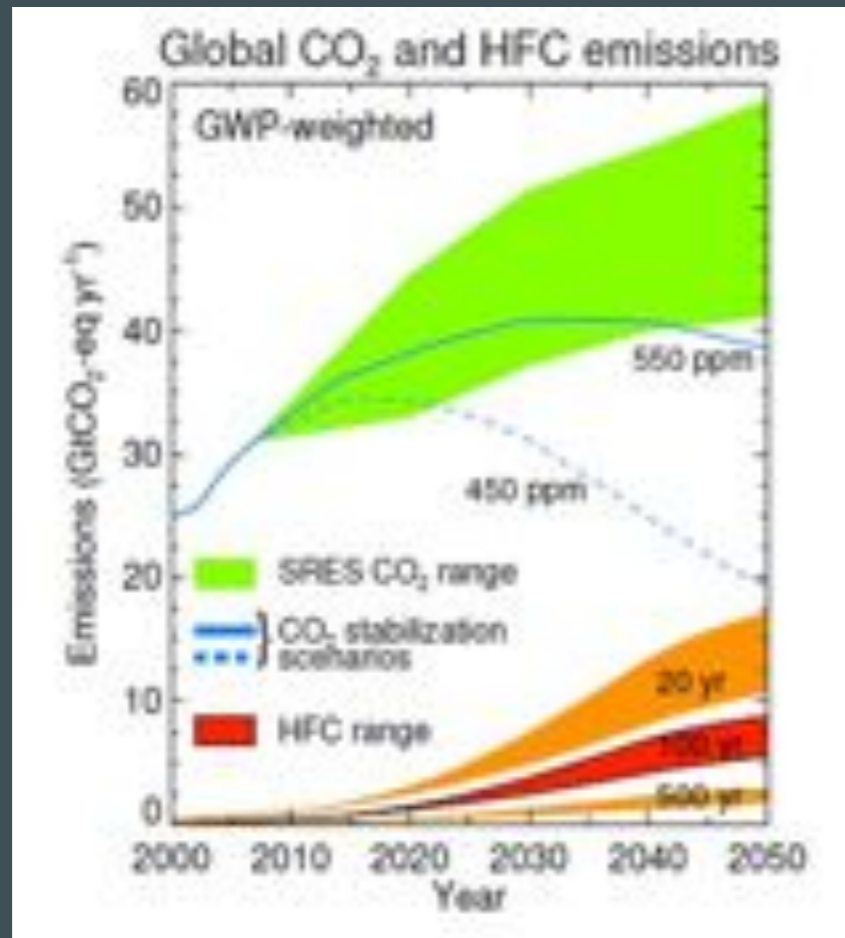
# Towards Genuinely Climate Friendly Cooling Solutions:

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*-Outline of 'real world' experience in the application of HC  
retrofit options*

Brent Hoare, Executive Director,  
Green Cooling Association  
Montreal Protocol MoP 23  
Bali, Indonesia, 25 November 2011

# Velders et.al.,PNAS 2009 - 2050 Projections



- Use of 100 year GWPs significantly understates the magnitude of the climate threat posed by HFCs
- **Climate benefits of CFC phase out will be lost if rapid action to phase out HFCs is not taken soon**

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# Who is Green Cooling?

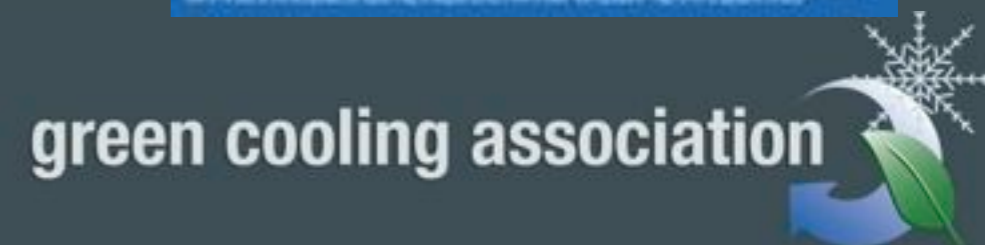
## ***Companies and Individuals working with natural refrigerants***

- Industrial refrigeration practitioners - using and designing for ammonia, CO2 and large hydrocarbon applications
- Hydrocarbon refrigerant manufacturers and suppliers - HyChill - [www.hychill.com.au](http://www.hychill.com.au) - Technochem - [www.technochem.com.au](http://www.technochem.com.au) - EnGas and Red-Tek distributors launching soon
- Contractors using “natrefs”
- Air-conditioning system manufacturers TIA Air
- Other members from Thailand, Malaysia, Indonesia, Singapore part of our growing regional network...

# Who is Green Cooling?



56,000 black balloons of CO<sub>2</sub> - e global warming emissions from every dead fridge!  
**DEMANUFACTURE dead fridges NOW!**



# What does Green Cooling do?

- Provides a communications forum for natural refrigerant industry players in Australia and around the world
- Lobbies Government in Australia on wide range of issues impacting the natural refrigerants industry
- Calls for development of genuine product stewardship scheme for F-gases and equipment, with a much higher level of ambition than currently exists
- Defends competitive advantage of naturals by drawing corporate regulators attention to deceptive and misleading environmental claims
- Provides media liaison services

# Carbon Pricing on HFCs in Australia

- Government has recently passed “Clean Energy Future” legislation - November 2011
- Scheme to commence by July 2012
- Was developed by a “Multiparty Climate Change Committee” comprised of Labour, Greens and 2 Independents
- Main feature is a “fixed price” (not “tax”) for 3 years moving towards a floating price and a tradable permits scheme in 2015
- HFCs included by levy to establish CO<sub>2</sub>-e price
- Rebate for recovery and destruction to be introduced in July 2012

# Australian CO<sub>2</sub>-e HFC Pricing

<b>Refrigerant</b>	<b>GWP</b>	<b>\$/kg</b>
R134a	1300	\$29.90
R125	2800	\$64.40
R143a	3800	\$87.40
R32	650	\$14.95
HFC365	794	\$18.26
HFC245	1020	\$23.46
R404a	3260	\$74.98
R507	3300	\$75.90
R407C	1525	\$35.09
R410A	1725	\$39.68

- NB: All GWP's are taken from the IPCC Second Assessment Report (SAR/AR2)

# SE Asia Snapshots

- Indonesia



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# Musicool - Pertamina



## Musicool Hydrocarbon Refrigerant

As a substitute for Freon Alternative Products, Musicool produced and adapted to the products that will be replaced, Freon. The Musicool range includes:

1. **MC-12®**, manufactured as a replacement refrigerant **R-12 CFCs** that **damage the ozone layer and can lead to global warming**.
2. **MC-134®**, manufactured as a replacement refrigerant **HFC R-134a** which can lead to **global warming**. Used AC cars manufactured after 1993, Refrigerator, Freezer, Water Dispenser, Cold Storage, etc.
3. **MC-22®**, manufactured as a substitute for **HCFC R-22** refrigerants that **damage the ozone layer**. Used for AC room like, AC Split, AC Windows, Central AC, Chiller, etc..
4. **MC-600®**, manufactured as a substitute for **CFC**

For reservations call us at 021-95493863 or email to [info@globalindoprime.com](mailto:info@globalindoprime.com)

We only sell Musicool HC to the company or technician who has been accustomed to and trained in the use of Hydrocarbon Refrigerant.



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**Be A Savings Partner Hydrocarbon Refrigerant FAQ Useful Links**

## Be Our Energy Savings Partner

Does your company have an existing non-centrifugal air-conditioning system that could benefit from a performance upgrade?

ECOSPAN's fast and effective energy solution renders existing aircon systems more efficient and eco-friendly.

We get your aircon systems to cool faster and reduce energy consumption by at least 12%, guaranteed.

Air-conditioning systems that benefit from Ecospan's energy saving solution range from small split-units, VRV systems, package units that are up to 50 horsepower in capacity, to large chillers.

See more benefits of being a savings partner [here](#).

### GET TO KNOW HYDROCARBON REFRIGERANT

- Superior Heat Transfer  
uses less energy to cool
- Drop-in Solution  
no system retrofitting required
- Reduces Wear-and-Tear  
extends component life
- Zero Global Warming Potential  
not a greenhouse gas

[more information here](#)

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USE ONLY:

# ECOSPAN-M30

HYDROCARBON REFRIGERANT

SERVICED BY:

CONTACT NO:

CHARGE WEIGHT:

DATE:



ECOSPAN Pte Ltd  
www.ecospan.com.sg  
Product of Singapore



SYSTEM UNDER PRESSURE. DO NOT  
TAMPER WITH FITTINGS OR ATTEMPT  
TO DISCONNECT COMPONENTS  
UNLESS QUALIFIED

THIS UNIT IS CHARGED WITH HYDROCARBON REFRIGERANT

# Ecospan - Singapore

Innovative hydrocarbon refrigerant manufacturer

- Product available since early 2010
- Provide installation and servicing



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# Jusco Melaka shopping centre, Malaysia



- Ecospan converted large retail complex to hydrocarbons in July - August 2010
- Around 50 x 25-50 KW Water Cooled Package Units
- 100 split systems
- Performance monitoring to demonstrate energy efficiency improvements



# Have you seen?

BBC World News environmental business program “Nature Inc” featured Montreal Protocol and hydrocarbons in “The 21 Gigatonne Timebomb” episode screened in May 2011 and available at:

[www.greencooling.org](http://www.greencooling.org) - “News” - “Videos”



# Please visit [greencooling.org](http://greencooling.org)!



- Contact for further information:  
[brent@greencooling.org](mailto:brent@greencooling.org)  
<http://greencooling.org>