



Available, Affordable and
Appropriate HFC-free
Refrigeration and Cooling
Technologies for Replacing
CFCs and HCFCs in Developing
Countries



environmental
investigation
agency

Montreal Protocol

A model of success

Climate benefits of MP:

- 1990-2010 GHG reduction of 135 billion tonnes CO₂-eq
- Kyoto Protocol aims ~ 10 billion tonnes CO₂-eq
- HCFC phase out, upto 16 billion tonnes CO₂-eq, much of which from A5 countries
- Requires low GWP and energy efficient technologies
- Opportunity for leadership from A5

Why HFC Free?

- Many HFC blends have higher GWP than HCFCs
- HFCs atmospheric concentrations rising 13-17% per year
- 2015 GHG HFCs ~1.2 billion tonnes CO₂-eq however HCFC phase out may result in far higher emissions

Existing legislation

- EU MAC directive on high GWP HFCs in cars.
- Nordic countries HFC tax-refund system: increased recovery and use of natural
- US climate bill, pending
- Further action on MACs in California?

Diminishing market for high GWP HFCs and associated products.

A5 countries need to avoid entering an HFC quill de sac by leapfrogging to HFC-free technologies

Addressing climate-ozone synergies through the Montreal Protocol

HCFC phase-out may create increased demand for HFCs.

Decision XIX/6 Paragraph 9 “...encourage Parties to promote the selection of alternatives to HCFCs that minimize environmental impacts, **in particular impacts on climate**,...”

Paragraph 11(b) agrees that the Executive Committee will give priority to projects and programmes focusing on “...substitutes and alternatives that minimize other impacts on the environment including on the climate, **taking into account global-warming potential, energy use and other relevant factors.**”

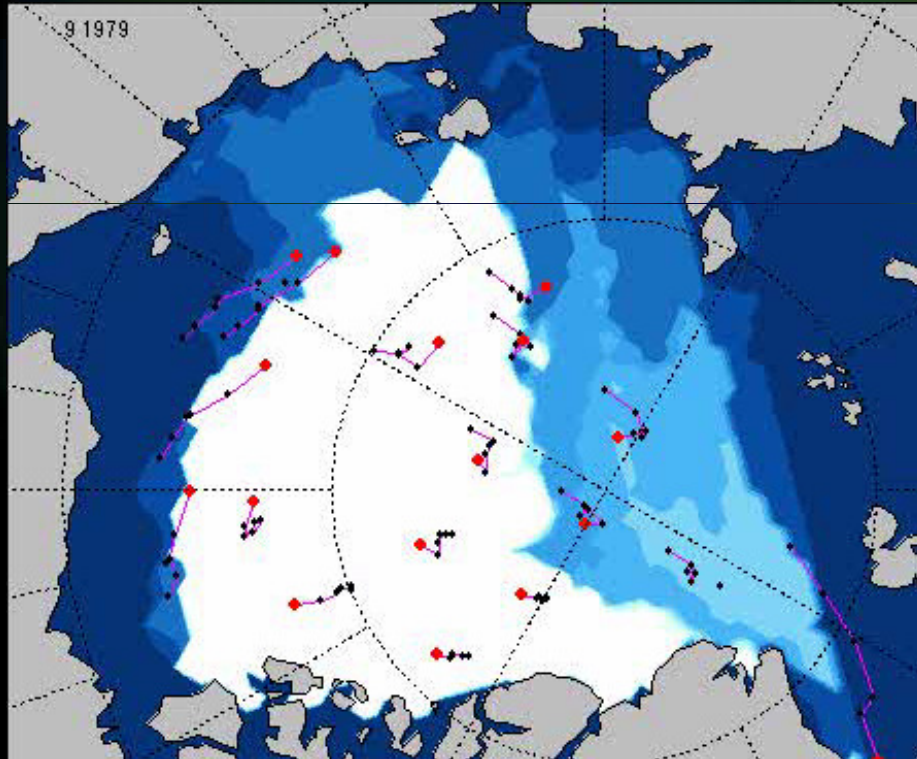
What can be done?

- A5 countries adopt a presumption HFCs, where environmentally superior and safe alternatives exist
- MLF internalise GWP – as a climate indicators and measure of cost effectiveness
- HFC global phase out in concurrence with HCFC phase out.

The need for urgency

IPCC 4AR, warming is now unequivocal current policies are not enough

Arctic sea ice melt



are we approaching tipping point?