

Accelerating
towards
Cool Green Economy

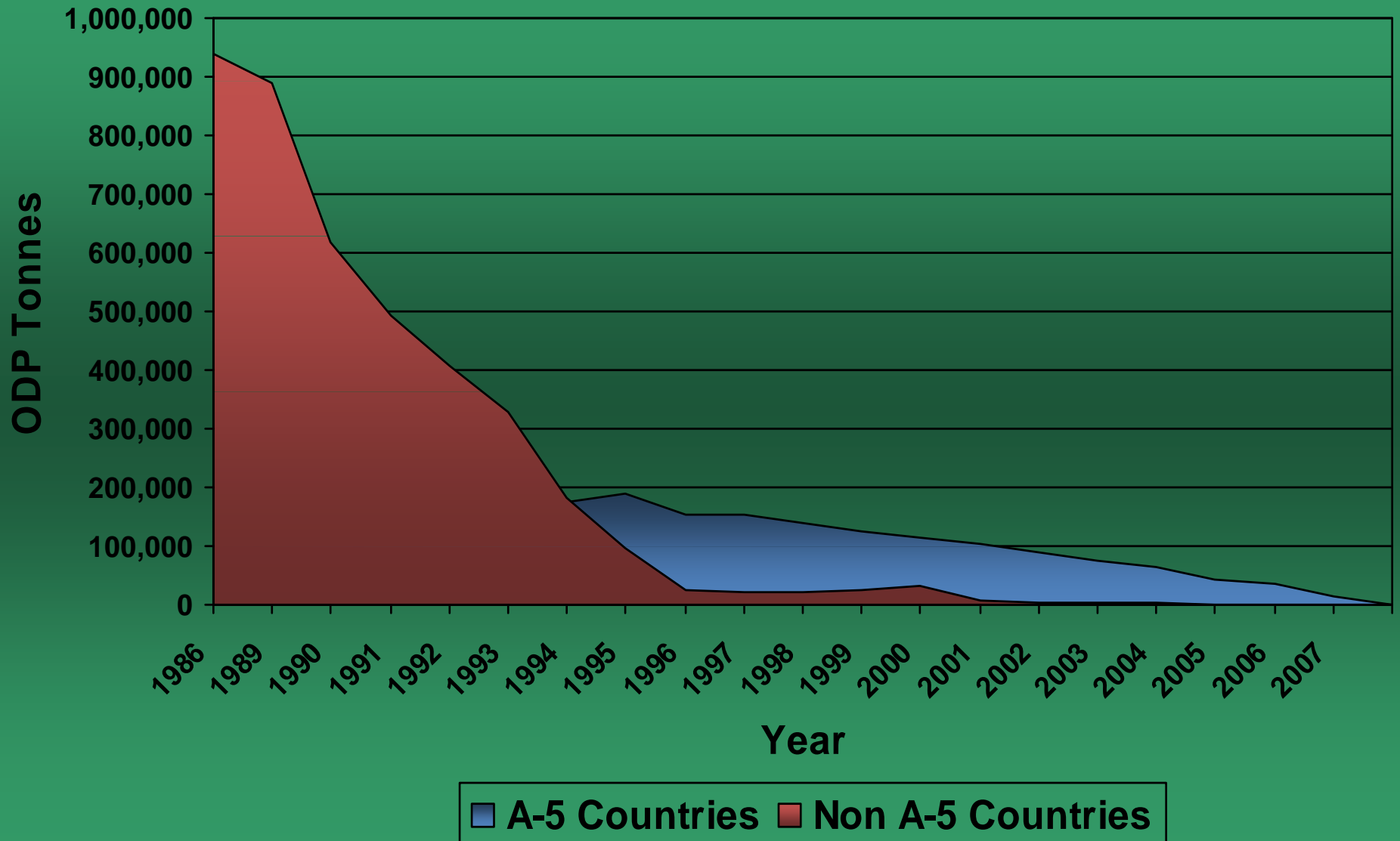
Low GWP Stimulus

Rajendra Shende, *UNEP*
Brussels , 27th Sept 2010

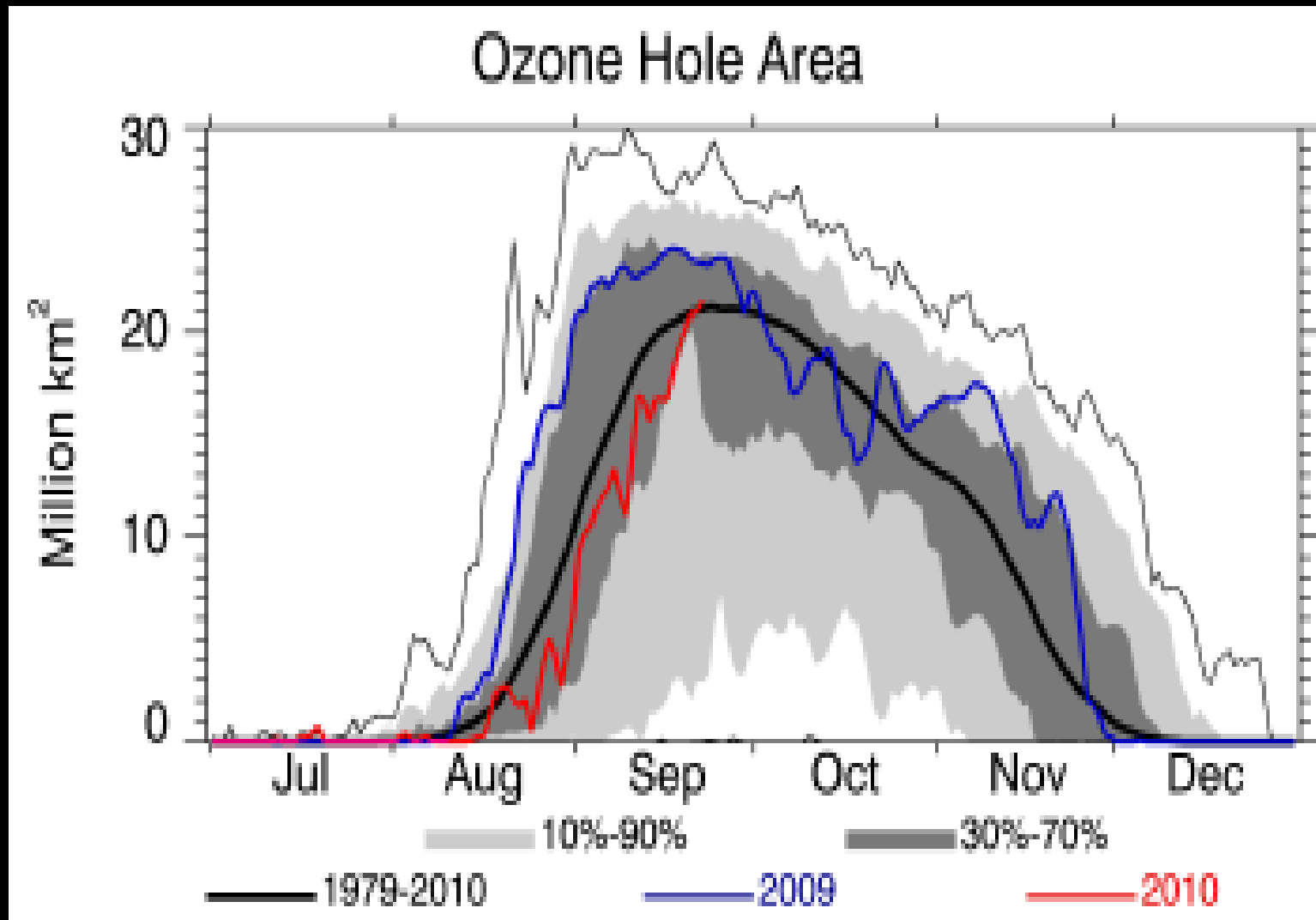
2010

TURNING THE PAGE ..

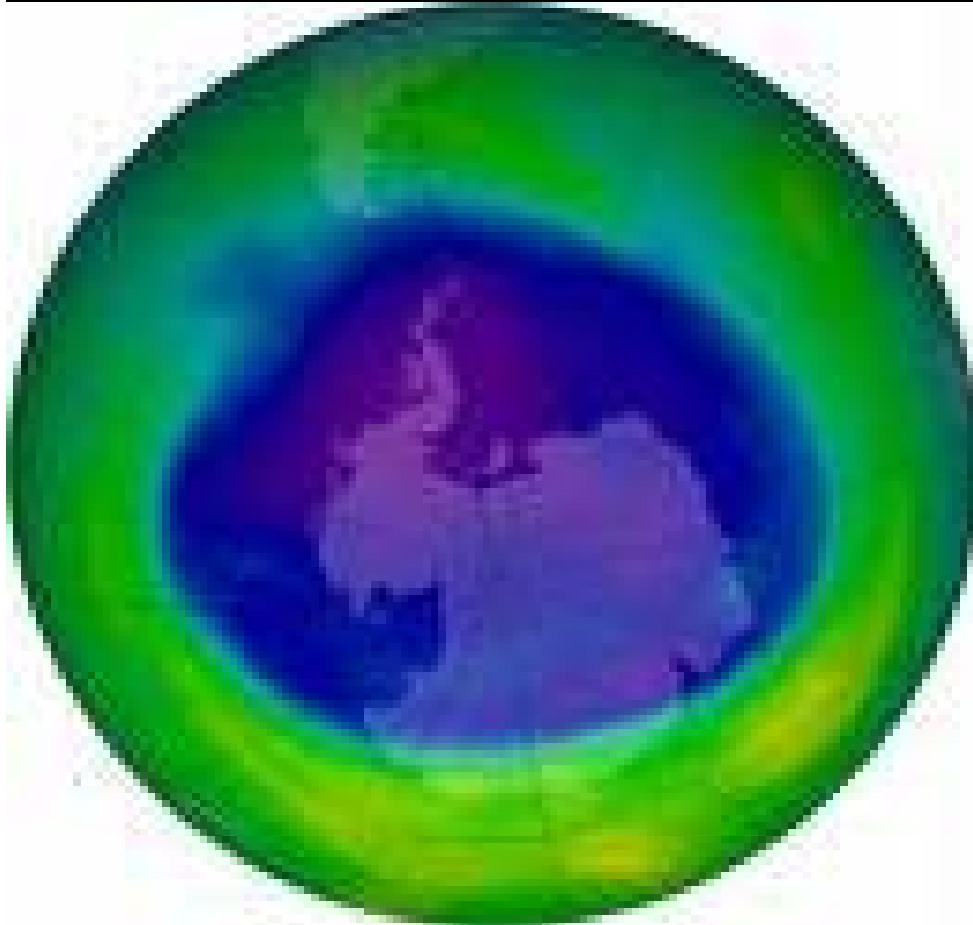
CFCs In History Books



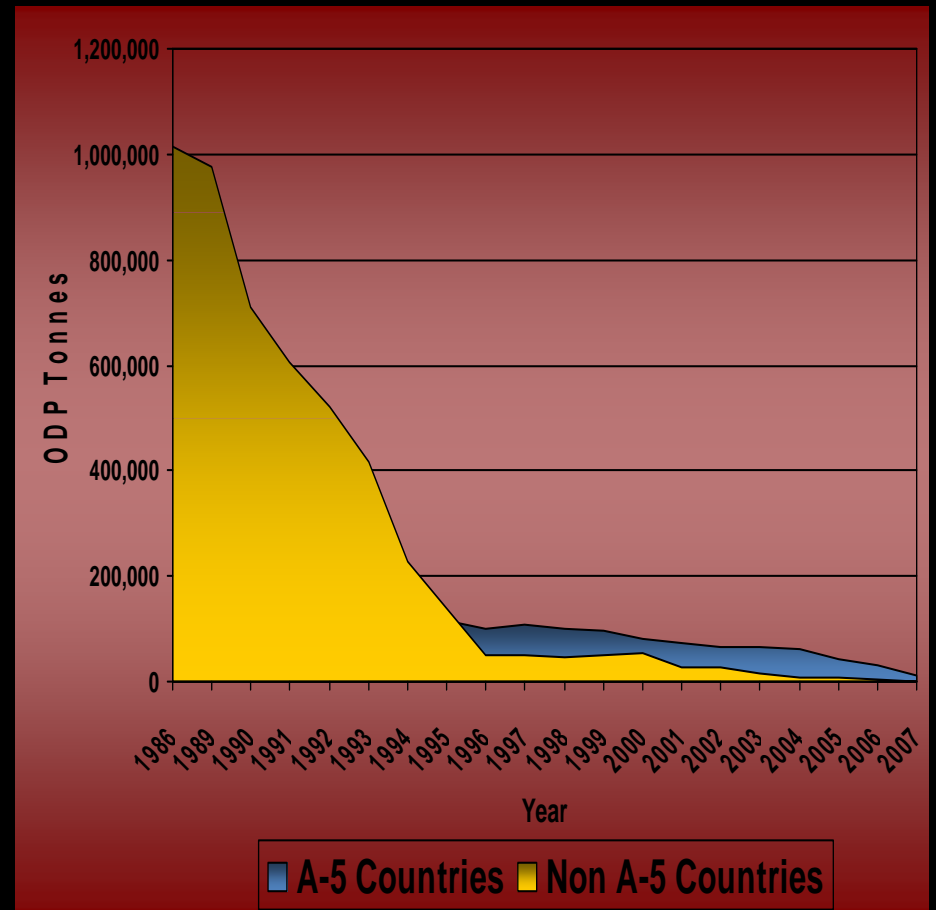
Ozone Layer stabilized



A Quarter of Century We Did it



1985

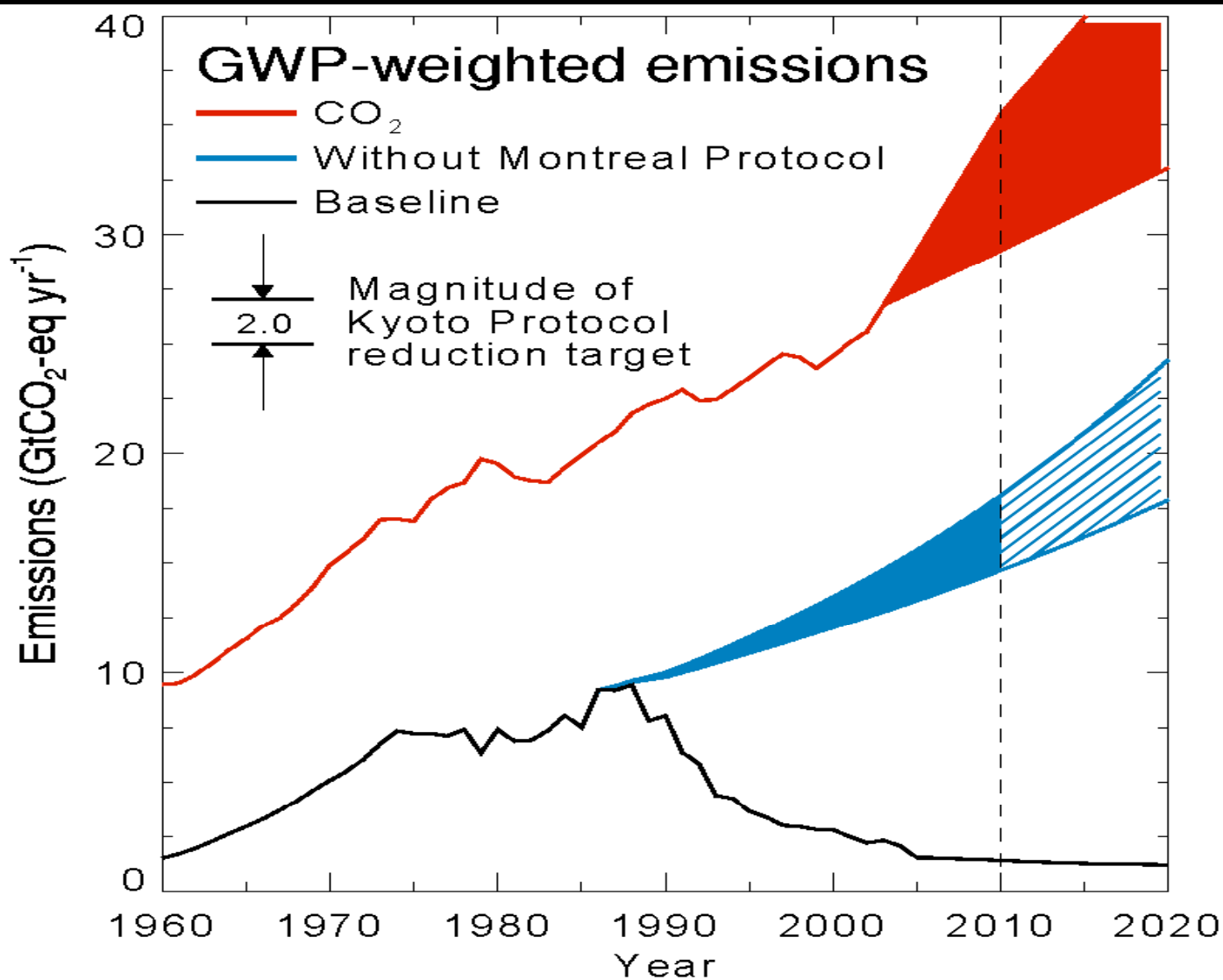


2010

Lessons and realisation

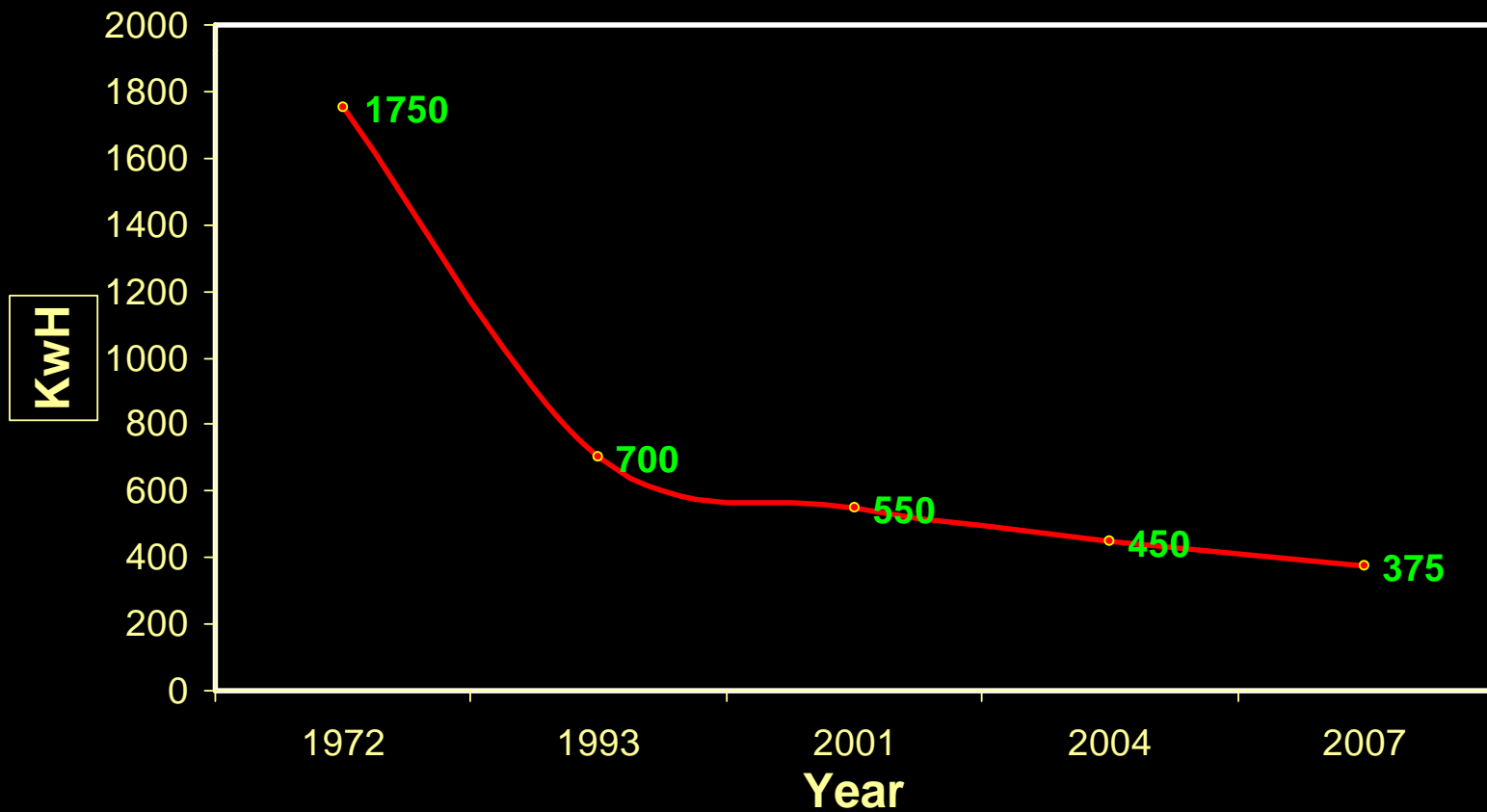
- Mutlitude of Benefits

Climate change delayed by a decade – a bail out by Montreal



Efficiency

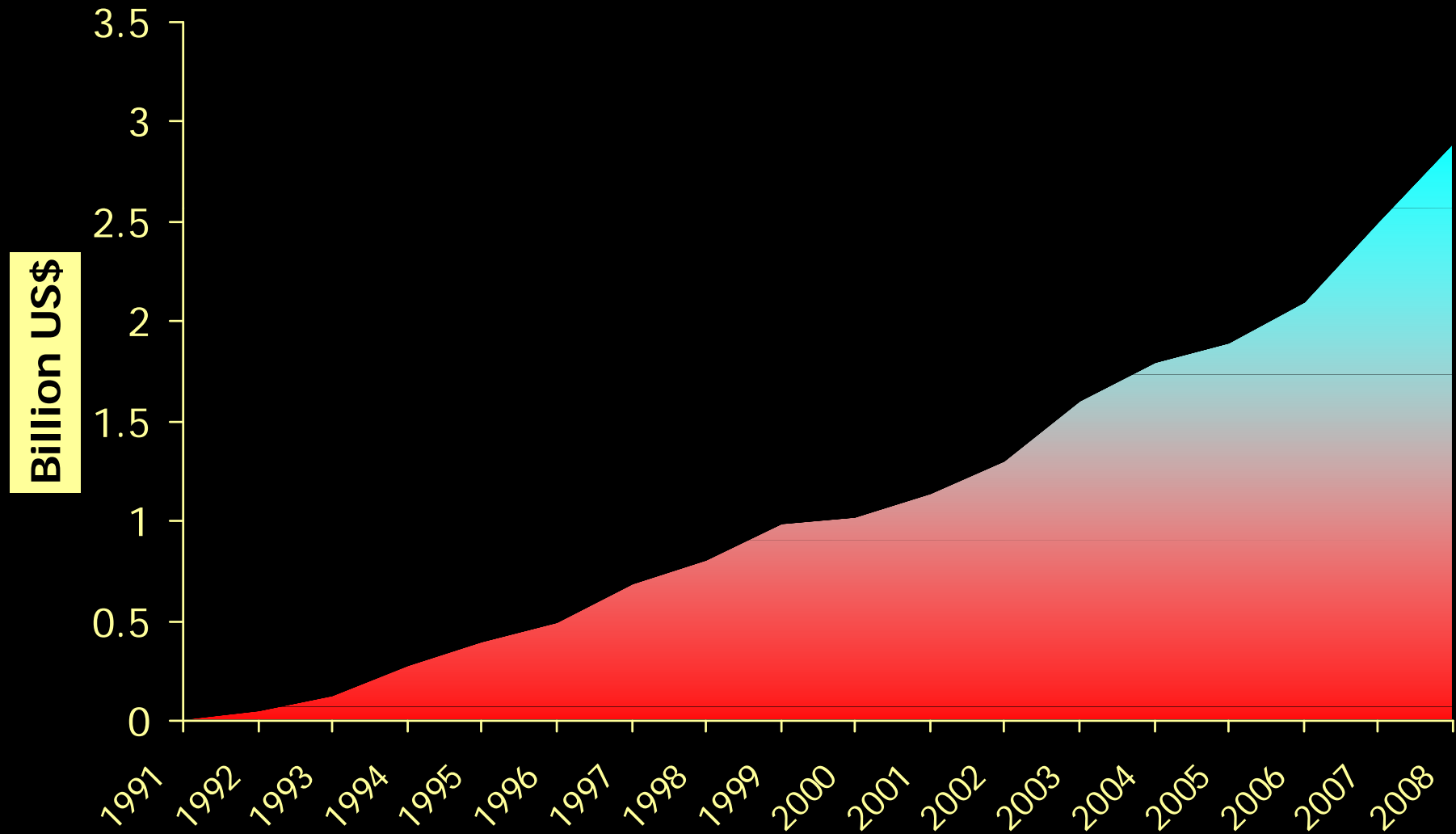
Example : Refrigerators



Huge Benefits

- Avoided Cataracts
- Avoided Cancer deaths
- Biodiversity Protected
- Food Shortages delayed

Global Cooperation



New Green Business

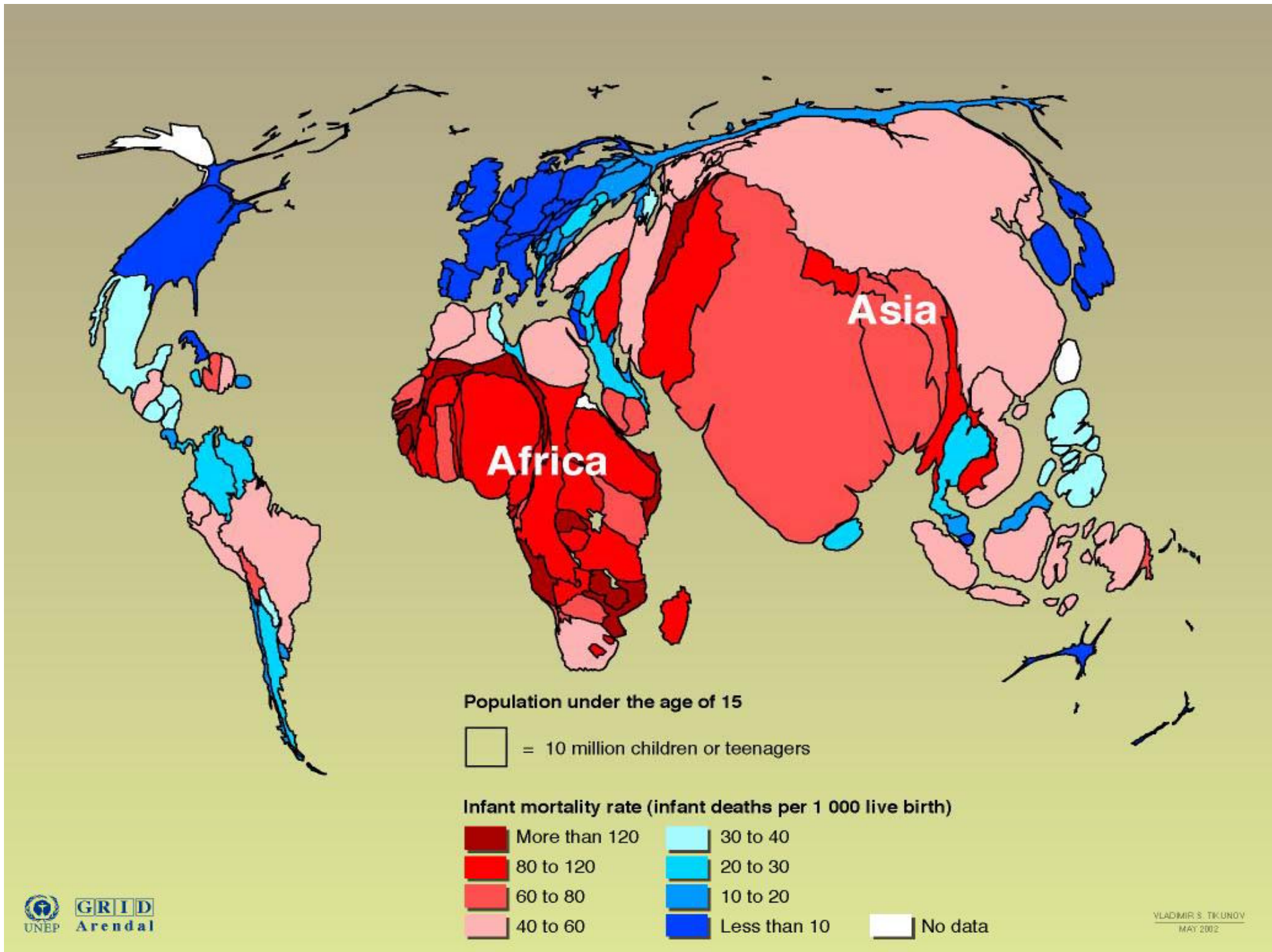
- **RESOURCE EFFICIENCY, Best Practices, Containment, Recycling, Retrofitting, New Technologies, Industrial Rationalization, SPIN-OFF TECHNOLOGIES, Research and development, Natural Refrigerants, Carbon Markets, Global Policy Setting, Prevention of Illegal Trade, Chemical Phase out strategies, TECHNOLOGY ASSESSMENT TOOLS, Bank Management Strategies.....**

Highest Level Recognition

- UN Secretary General
- UN General Assembly
- MDGs reports
- National Governments
- Group of Nations
- Media

New and Last (?) Chapter

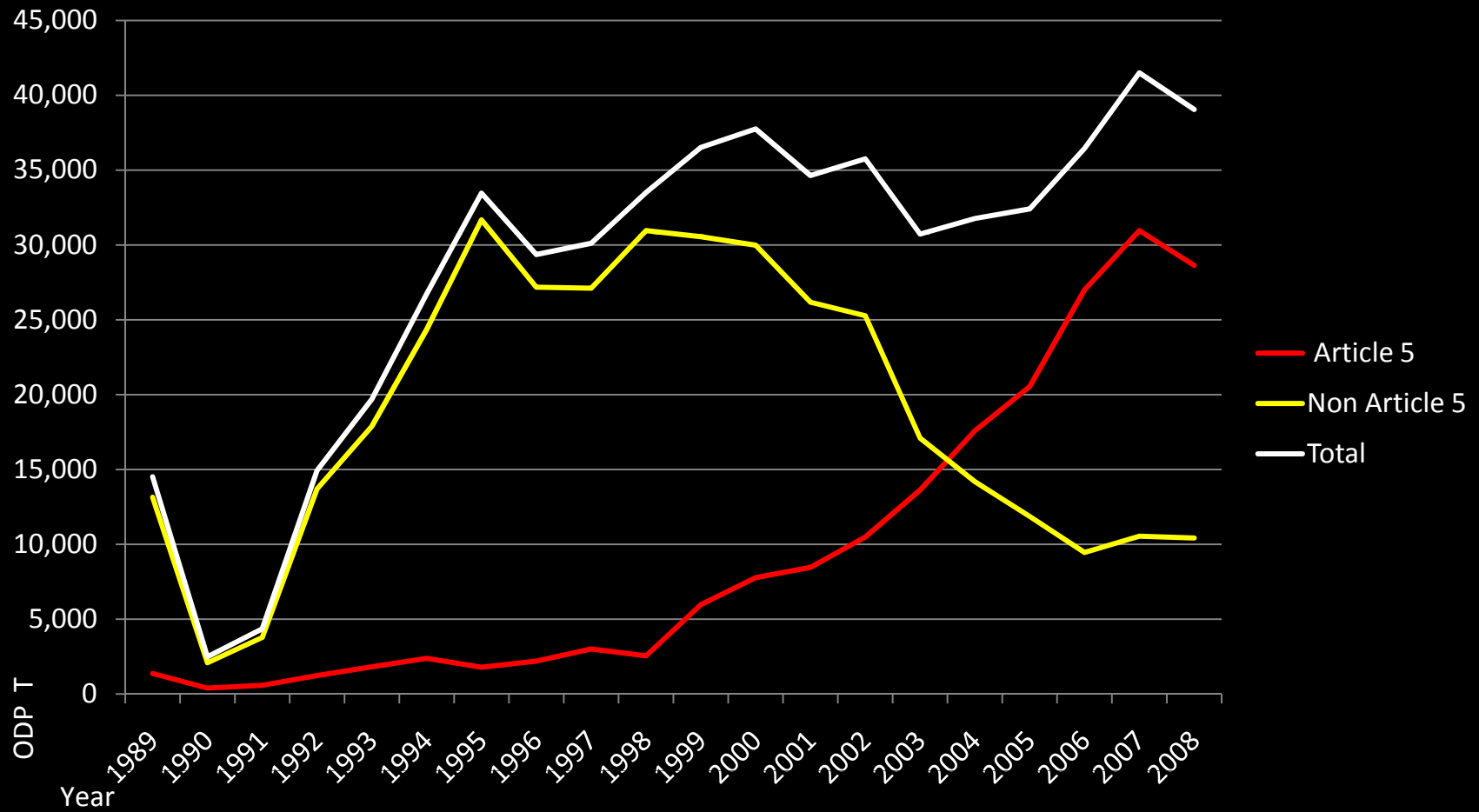
MP 2.0



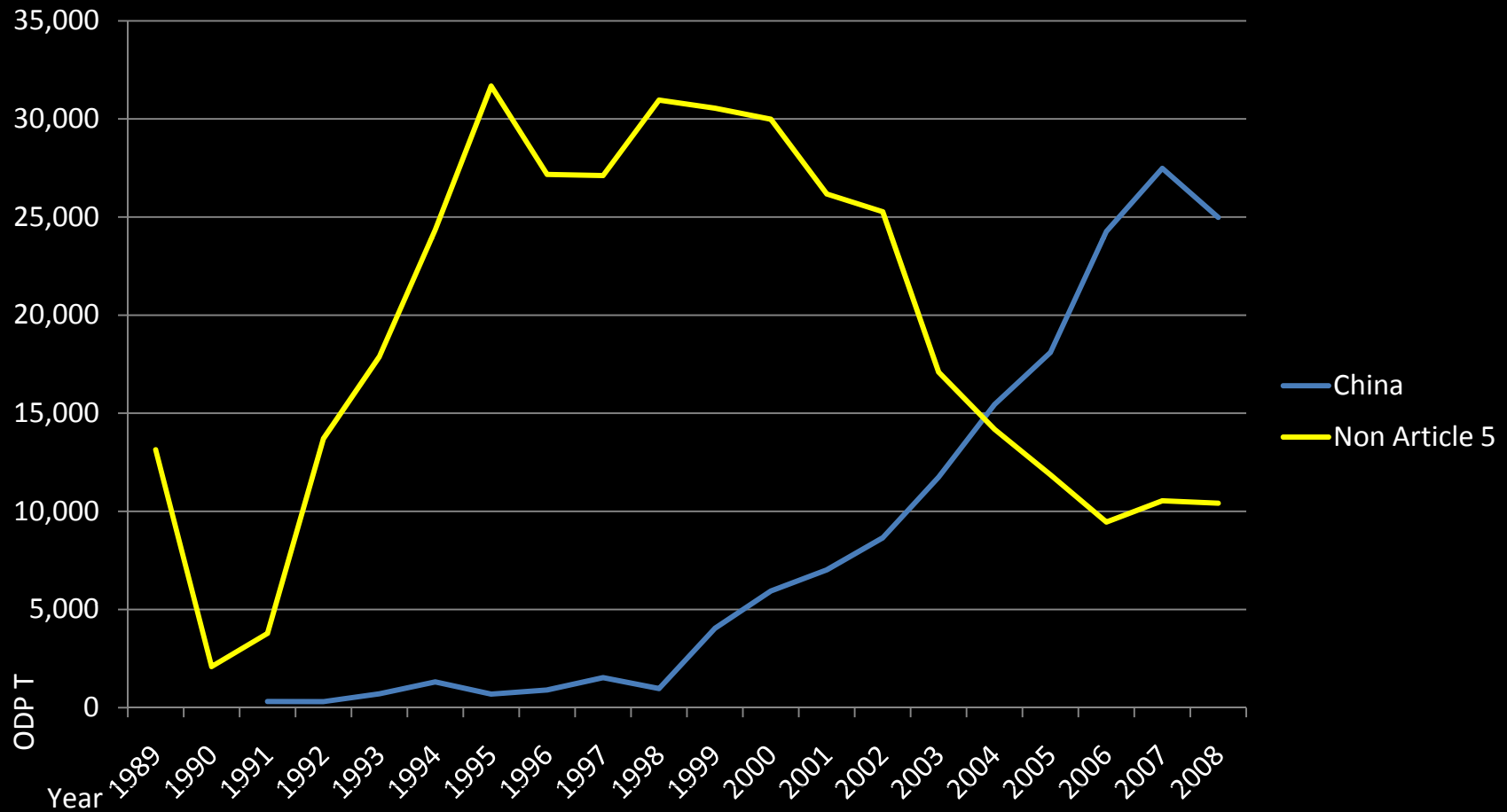
Ozone Dream

..Climate wake up call

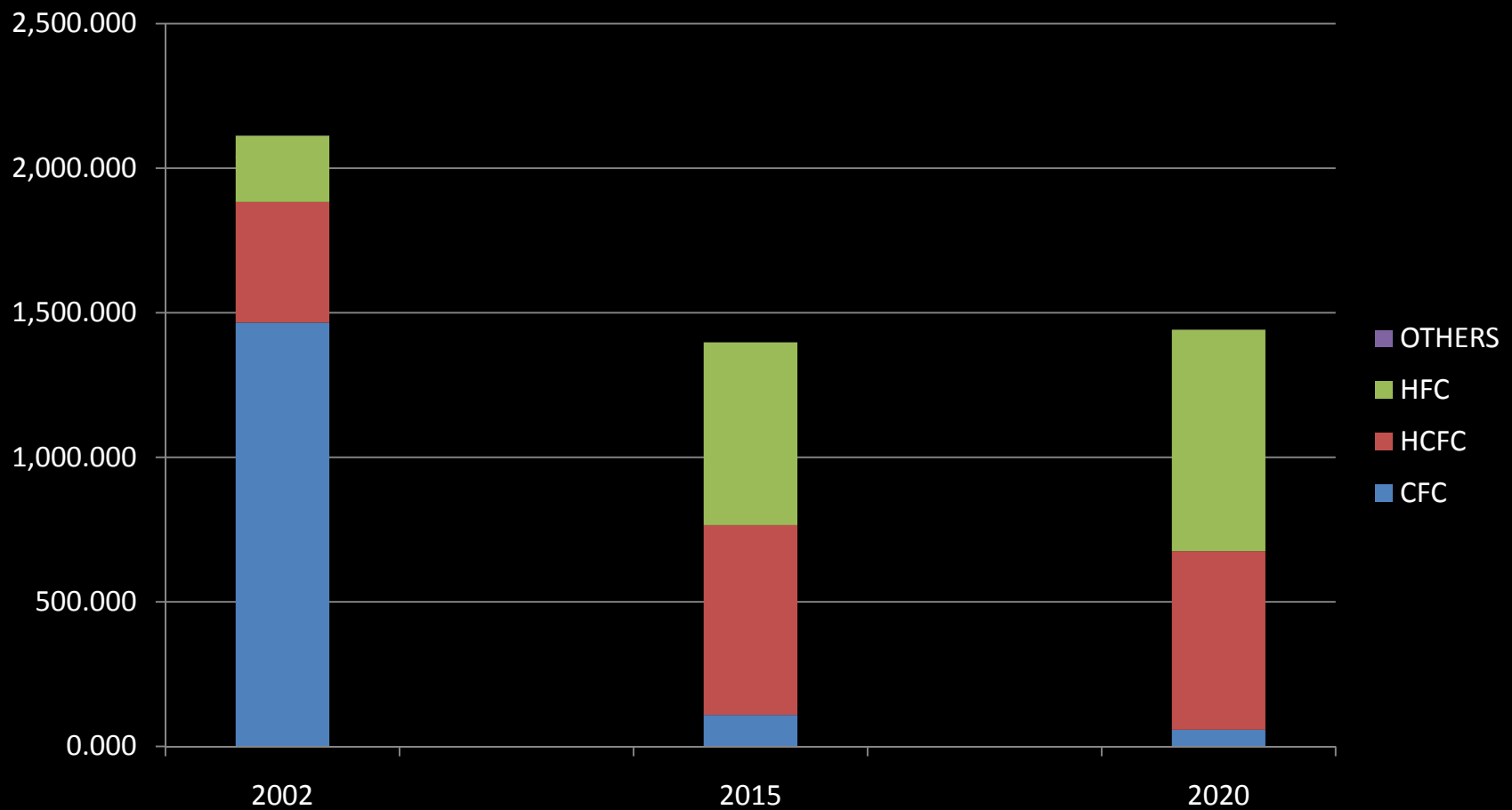
HCFC Production (ODP T)



HCFC Production China and Developed Countries



Banks (kt of CO₂ eq)



READY TO GO

POWER OF THE PROTOCOL

- Actions to eliminate HCFCs are
 - “low hanging fruits”
- Enhancing the energy efficiency
 - “right opportunity”
 - “right time”
- Infrastructure
 - “in place”

Only Climate Treaty in the town (that is working)

- The Montreal Protocol now is climate mitigation treaty.
- Cutting emissions from inefficient use of energy is central to
 - low carbon economy.
 - stabilization of co₂ in the atmosphere
 - resource efficient green economy

Good news

- Maldives and USEPA
- Coca Cola and Pepsi
- NGOs and Industries
- EU with Jump Start
- Multilateral Fund
- HFC phase down

http://www.unep.fr/information/book/hfc-policy/

http://www.unep.fr/information/book/foam-isanbook/

http://www.unep.fr/information/book/alternatives-to-hfc-us/

Alternatives to HCFCs in the Refrigeration and Air conditioning Sector

Practical Guidelines and Case Studies For Equipment Retrofit and Replacement

ACKNOWLEDGEMENTS

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United Nations Industrial Development Organization

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Office of Policy, Planning & Evaluation
Office of Technology Assessment
Office of Research and Development
Office of Compliance and Enforcement
Office of Air Quality Planning and Standards
Office of Global Warming Solutions
Office of Public Affairs and Outreach
Office of Regulatory Support

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Air-Conditioning
and Refrigeration
Technology Institute

- **April 2010**
- **USE OF REFRIGERANTS WITH GWP VALUES LESS THAN 20 IN HVAC&R APPLICATIONS**
- **Final Report**
- **REVIEW OF REGULATIONS AND STANDARDS**

ASHRAE

- Commitment for
 - research,
 - assessment
 - and strategic growth
- In the use of natural refrigerants such as ammonia, carbon dioxide, hydrocarbons, air and water in refrigeration systems

Not So good news

- Example set by developed countries
- Fault lines : They and us
- Quarter of century arguments
 - Safety
 - Cost
 - toxicity
- Pressure of time: developing countries
- Pressure of growth

Climate benefits are not automatic

21 GT CO₂ eq : Banks of ODS

25 GT CO₂ eq : HCFC phase out

40+ GT CO₂ eq : If EE etc is counted

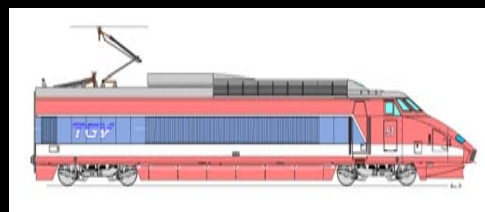
Time to Deploy Policies and Technologies

CFCs : Start 1991



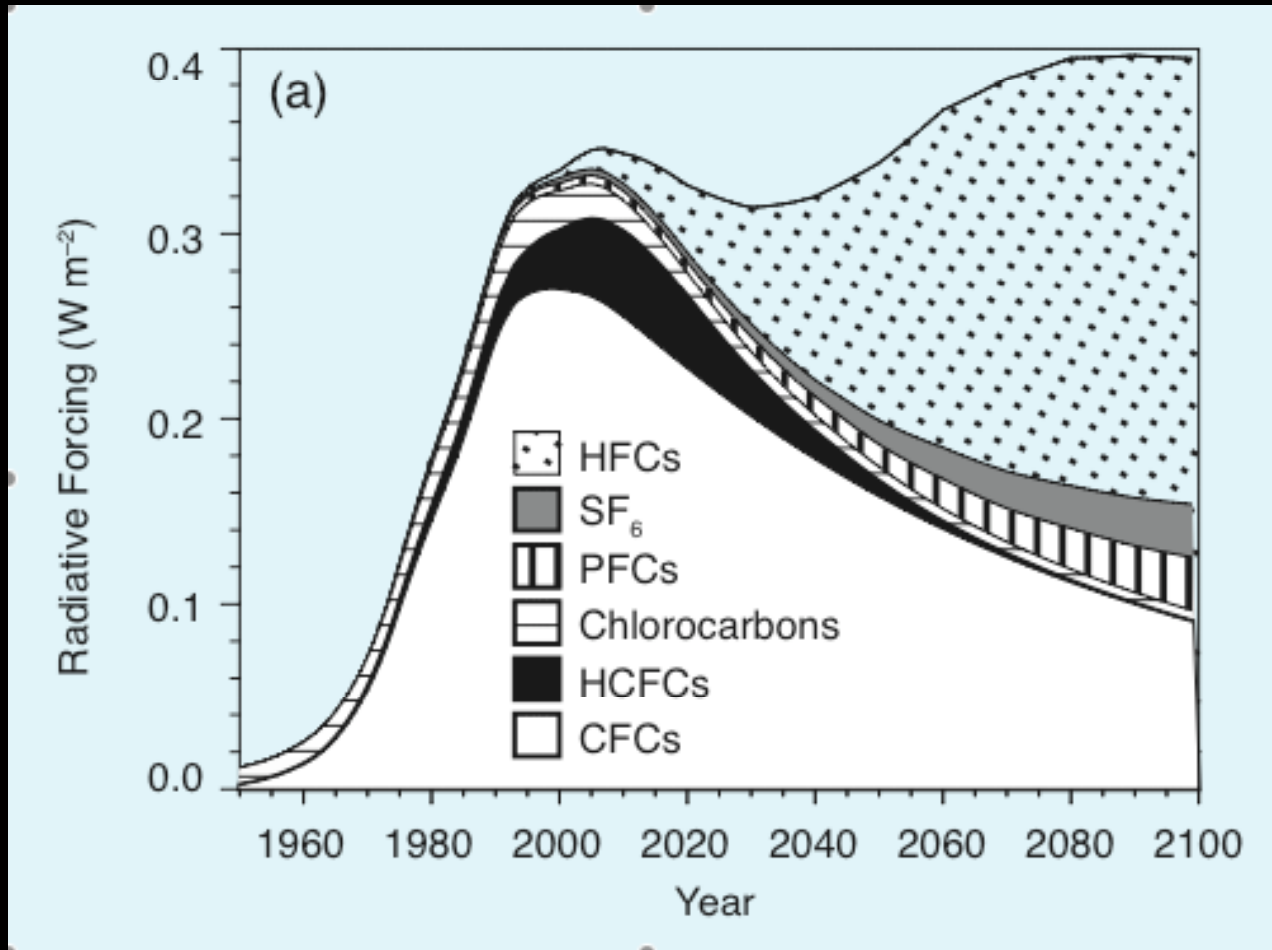
First control 2000

HCFCs: Start 2010



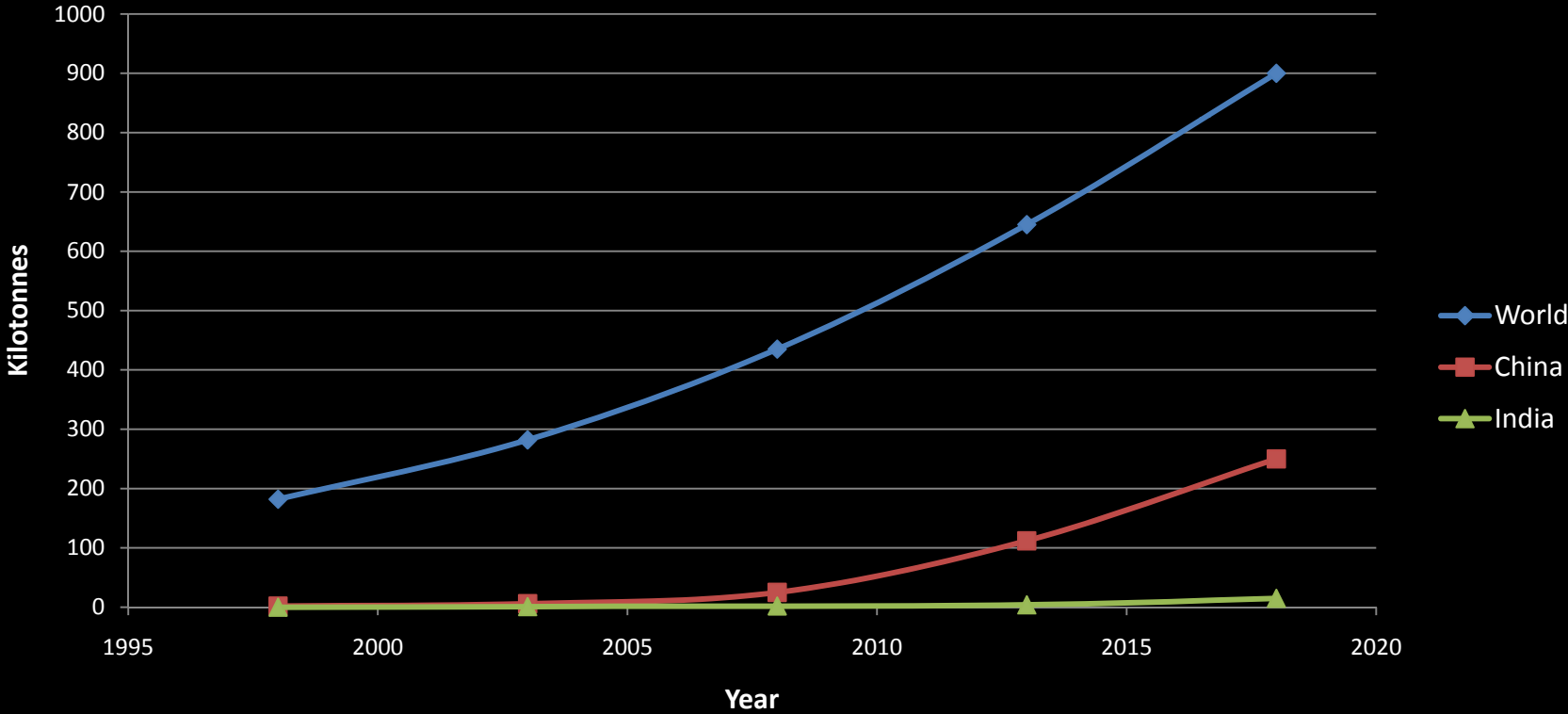
First Control 2013

Clear sign of climate danger if there is a major transition from HCFCs to HFCs. Montreal Protocol will become a net *contributor* to climate change.



The increasing trend of HFC demand up until 2018, with China driving global demand. The 900,000 tons that will make up global HFC demand in 2018 is equivalent to over 2 Gt CO₂ eq

HFC demand 1998-2018 - World, China & India (Source: Freedonia Group Inc.)



Packaging a message

- “It’s energy efficiency stupid”
- Money saving
- Energy security and energy intensity
- Unified voice for low GWP
- Part of Green Business

From Mitigation to Contributor?

- HCFC-22 emissions 50% faster
- Emissions of HFCs : Growth 8 %
- ODS+HFCs Banks leaking at the rate of 2-2.5 GtCO₂ eq per year
- Energy efficiency of ACs
- Thermal insulation of Foams

Our Collective Failure

- **“MP is heading toward an extraordinary collective failure unless it delivers an urgent rescue package to get the climate benefits back on track, ensuring that no project goes to be hungry of low GWP alternatives technology and even the smallest project can take economic benefit by adopting energy efficient techniques and low GWP emissions”**

END

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