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“Making Sense of Climate Change”



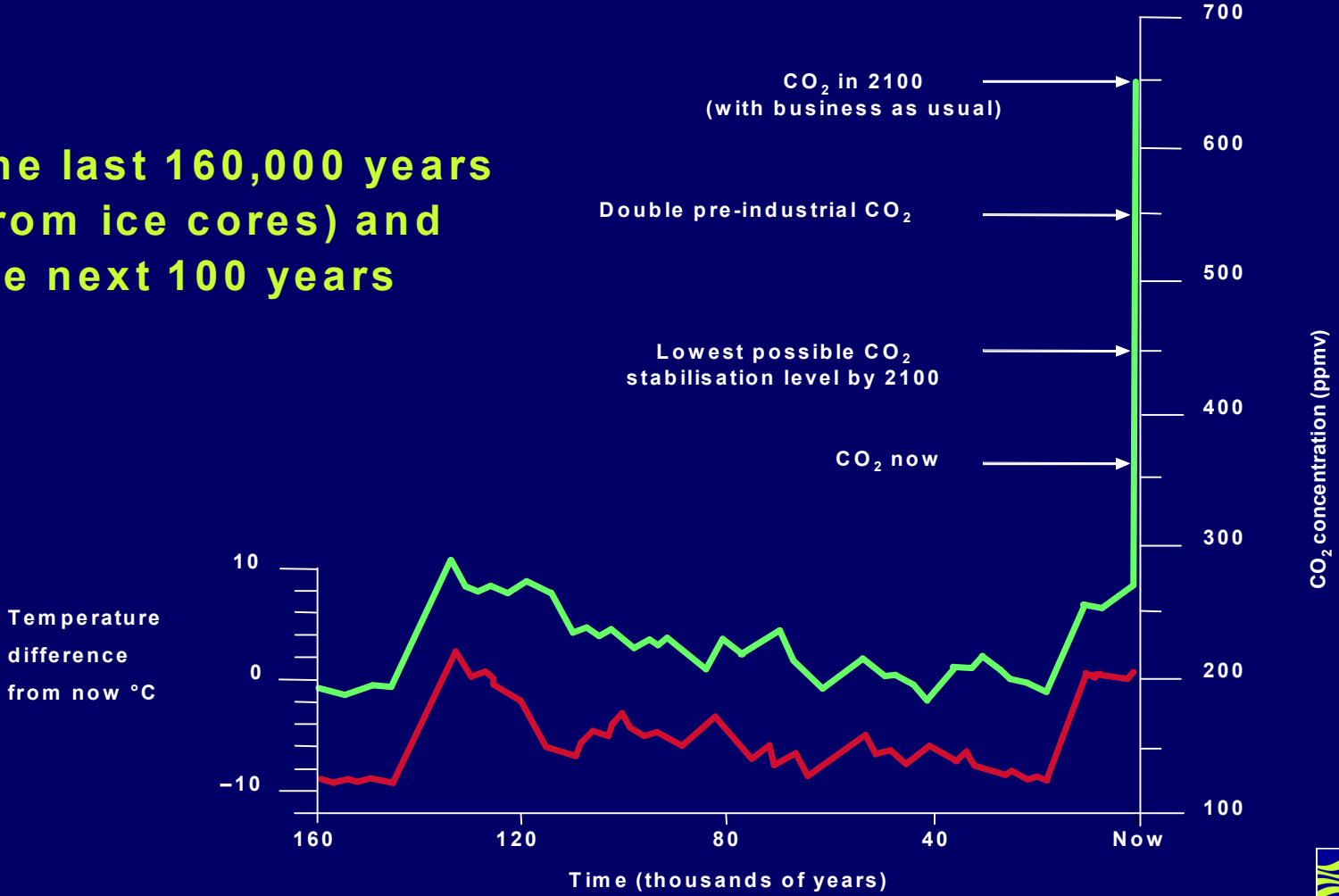
'Common Sense' of Climate Change

- Climate change is not about saving the planet
- Climate change is about protecting our quality of life – and possibly life itself
- Population is not the problem – it is our technology
- Technology is driven by our desire to better our lives
- We are not going to stop 2 Billion people wanting access to electricity
- Therefore Technology must be the answer to our problems



IPCC – July 2001

The last 160,000 years (from ice cores) and the next 100 years



How old is the science?

*“The **greenhouse effect**, discovered by [Joseph Fourier](#) in 1829 and first investigated quantitatively by [Svante Arrhenius](#) in 1896, is the process in which the [emission](#) of [infrared](#) radiation by the [atmosphere](#) warms a [planet's](#) surface”*

*“**Greenhouse gases** contribute to the [greenhouse effect](#). Some greenhouse gases occur naturally in the atmosphere, while others result from human activities such as burning...[coal](#).^[1] Greenhouse gases include [water vapor](#), [carbon dioxide](#), [methane](#), [nitrous oxide](#), and [ozone](#).”*

Wikipedia – July 2007



Predictions on effect of Global Warming

1. Increased land temperatures = greater evaporation of water = accelerated drought conditions
2. Increased sea temperatures = greater evaporation of water
3. Increased sea temperatures = higher sea levels through thermal expansion
4. Increased evaporation of water = more rain to fall
5. Increased temperatures and moisture = greater climatic extremes

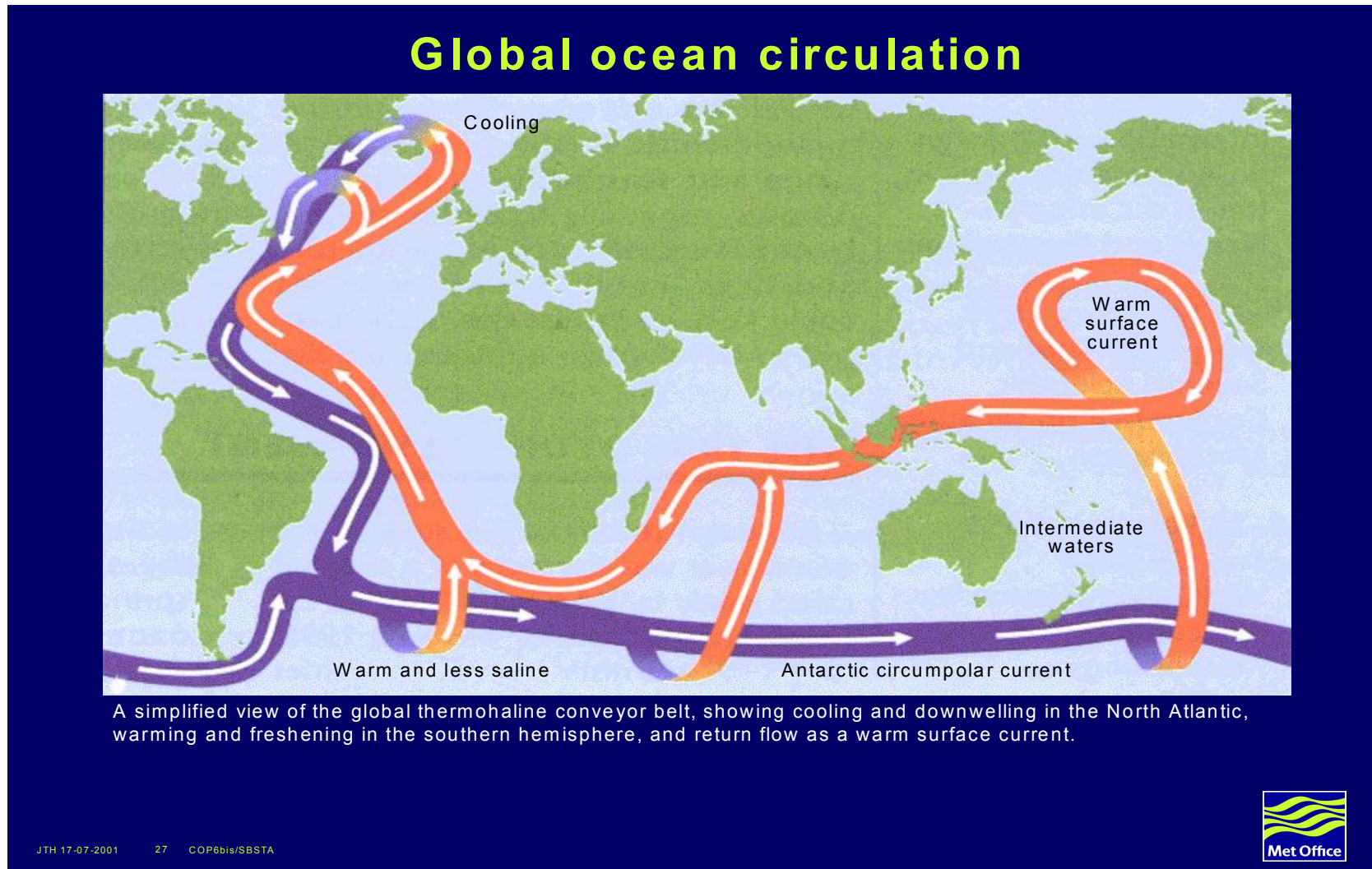
Climatic Extremes

- High pressure and low pressure systems drive our climate - The 'highs' will get higher. The 'lows' will get lower giving us hotter hot days, cooler cold days and wetter wet days
- 'Lows' over the sea will allow sea levels to rise locally
- Warmer seas increase the intensity of Hurricanes/
Cyclones
- Warmer seas will reduce the ice on the planet – further increasing sea levels

More Extreme Predictions

- Feedback mechanisms will accelerate global warming:
 - Warmer temperatures will release carbon dioxide trapped in the Oceans
 - Thawing of the frozen tundra in Northern Russia will release carbon dioxide
 - Reduction of ice cover will cause solar radiation to heat the ocean or land rather than being reflected back
- Plant and animal life will not be able to adjust to a rapid change of climate
- Large volumes of fresh water from thawing ice will affect ocean currents

The Thermohaline Current



Skeptics Arguments

1. The world is not getting warmer
2. The predictions of global warming are wrong
3. Global warming is caused by natural means
4. The cause of Global Warming is still unknown
5. Global Warming is a good thing

Technology Solutions to Climate Change

- Methane – either from Natural Gas or from Bio gas - can halve CO2 emissions from power stations
- Wind, Solar Thermal and Solar Photovoltaic produce zero CO2
- Hot rocks; Wave and tidal power; Nuclear; Fuel Cells; Carbon capture and storage can all contribute to reducing emissions from power stations
- But they will all increase the price of electricity

Behavioural Solutions to Climate Change

1. Use less electricity
2. Use less fuel
3. Travel less
4. Reduce consumption
5. Repair, recycle, refurbish

What else can YOU do?

- Influence your family and friends - Buy them a copy of An Inconvenient Truth
- Influence the government – Write lots of letters, send lots of emails
- Plant a tree



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