

EACH DAY HUMBLE SUPPLIES ENOUGH ENERGY TO MELT 7 MILLION TONS OF GLACIER!

This glacier alone, if it were to be broken up and spread over the entire United States, would cover it to the neck of a 700-foot high wall.

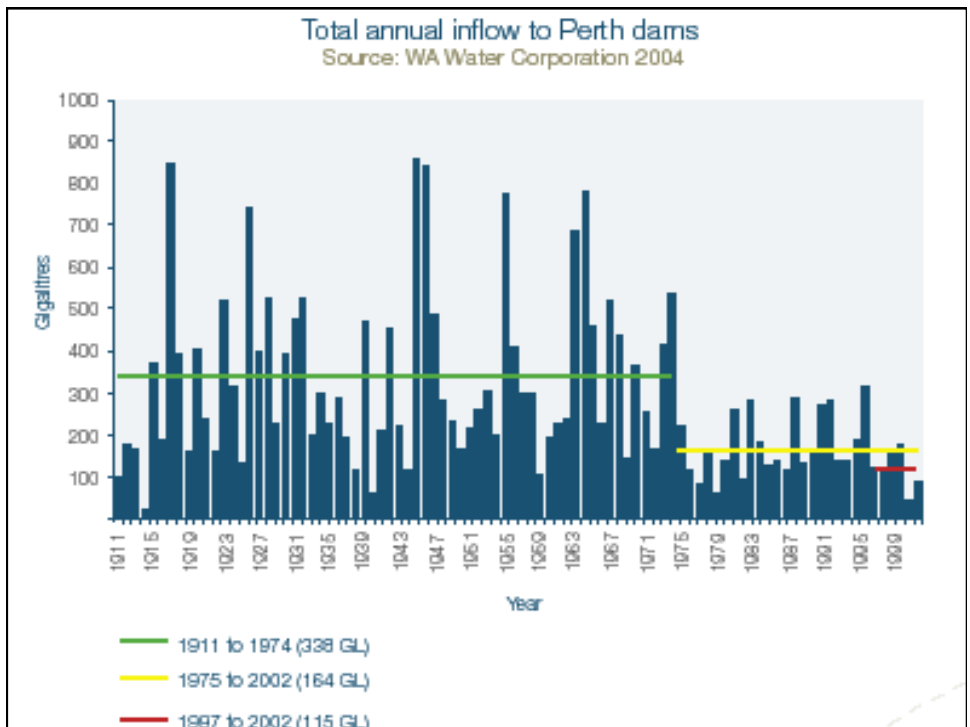
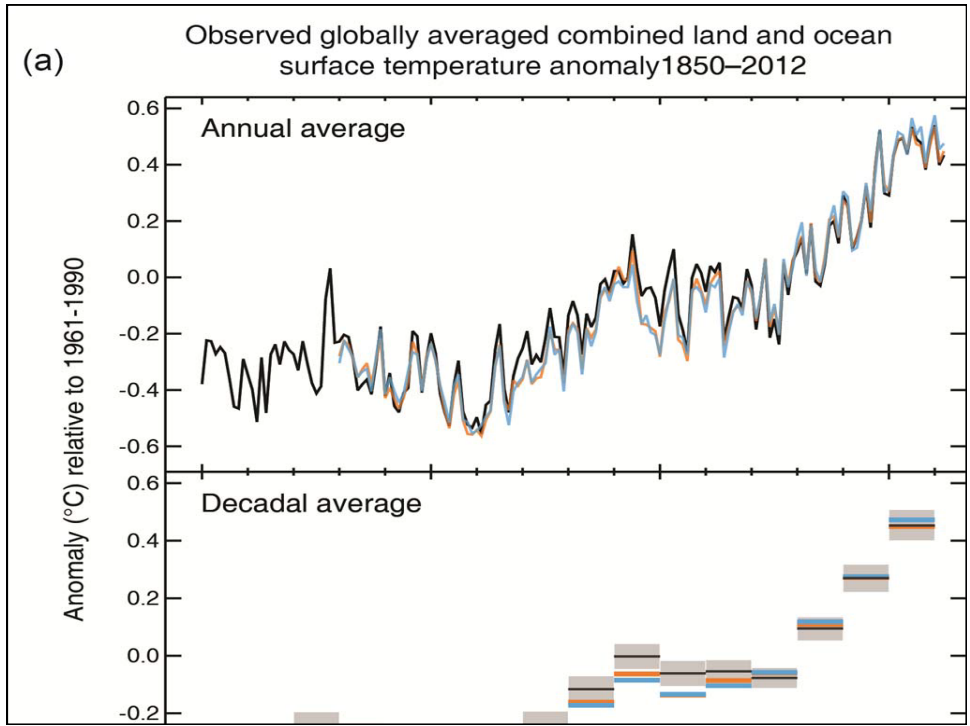
This giant glacier has remained unretreated for centuries. Yet, the petroleum energy Humble supplies—it converted into heat—could melt it at the rate of 80 tons each second! To meet the nation's growing needs for energy, Humble has applied science to nature's resources to become America's Leading Energy Company. Working wonders with oil through research, Humble provides energy in many forms—to help heat our homes, power our transportation, and to help the industry with a great variety of versatile chemicals. Stop at a Humble station for the best service, the most convenient and see why the "Happy Motoring" Sign is the World's First and Best.

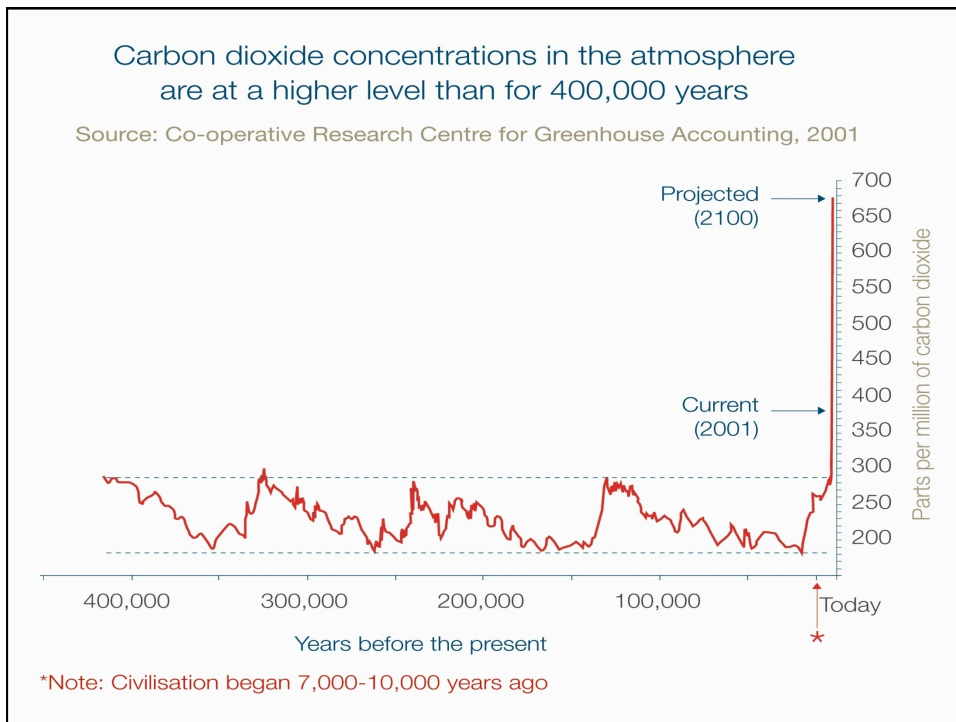
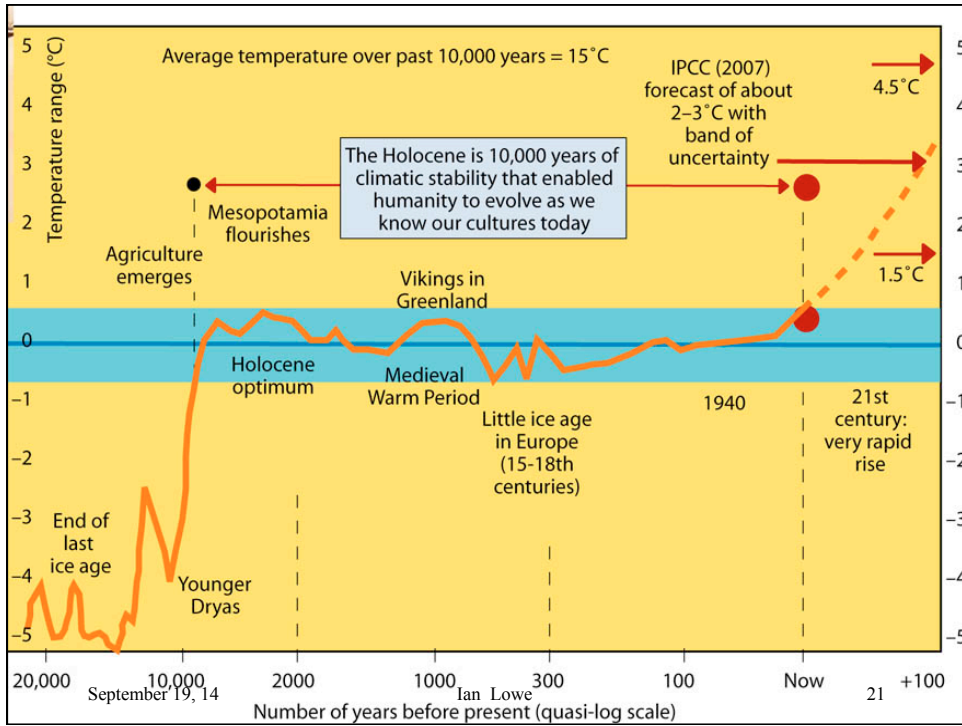
HUMBLE
OIL & REFINING COMPANY
America's Leading Energy company

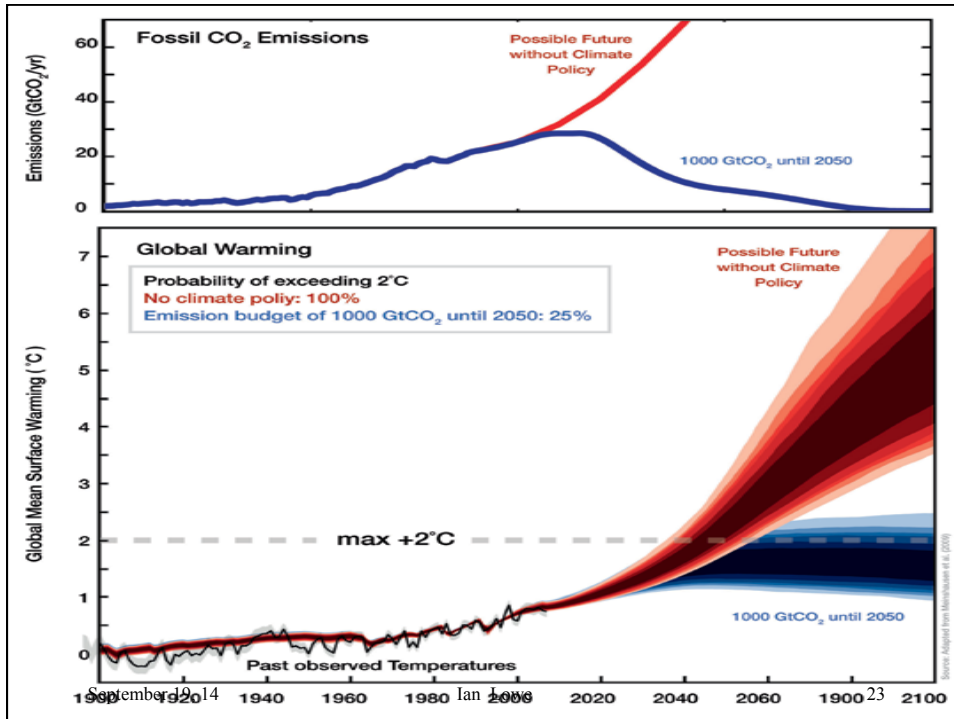
ENCO
17

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“global average surface temperature is now about 0.8° above its level in 1750... significant increases in the incidence of floods, droughts, heat waves and wildfires... it appears the intensity of tropical storms has been increasing as well”







To have a **better than even** chance of keeping global average temperature rise below 2°C, the world would need to be emitting **less than half** the 2000 amount of CO₂ by 2050.

So **global** emissions need to **peak** within the next **10 years** and then decline rapidly.

Possible non-linear changes

- **Methane from Arctic tundra**
- **Melting of polar ice**
- **Drying of rainforests**
- **Clearing, burning peatlands**
- **North Atlantic circulation**

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25

IEA World Energy Outlook 2008

**“nothing short
of an energy
revolution”**

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26

Sustainable energy future

- Improve efficiency of turning energy into services [transport, cooling, lighting, motive power etc]
- Phase out supply technologies based on problematic resources
- Eliminate technologies imposing unacceptable environmental costs

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27



Global growth rates, 1993-2003

Wind	29.7
Solar	21.6
Natural gas	2.2
Oil	1.3
Coal	1.0
Nuclear	0.6

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29





Renewables can't supply our needs ?

- **NZ gets most of electricity from hydro and geothermal**
- **Wind power supplied over 50 % of total power consumption of South Australia for August 2014**
- **At its peak met 100 % demand [& exported surplus to Victoria]**