



Chief Scientist

Chief Scientist for Australia  
Professor Penny D Sackett

# Moving the World

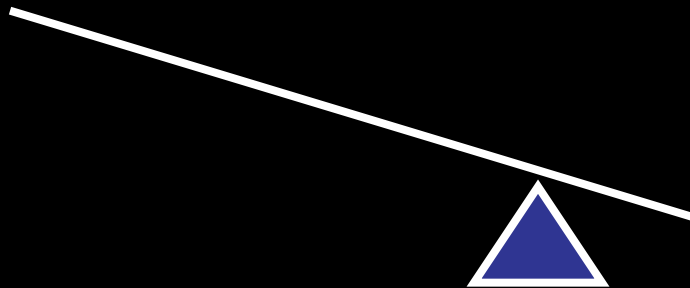
Science and Leadership  
before and after Copenhagen

# Give me a lever long enough . . .

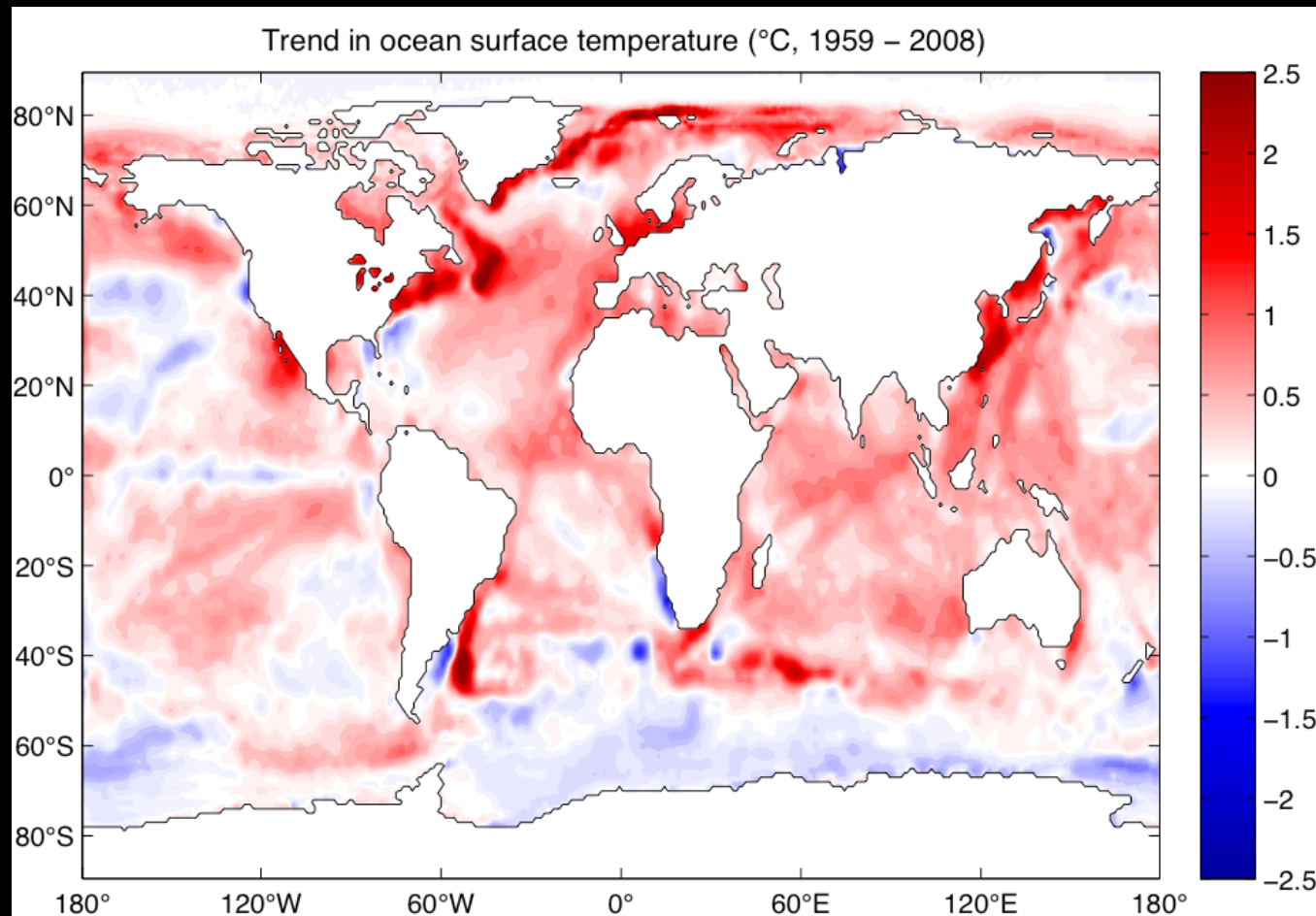


. . . and a fulcrum on  
which to place it, and I  
shall move the world.

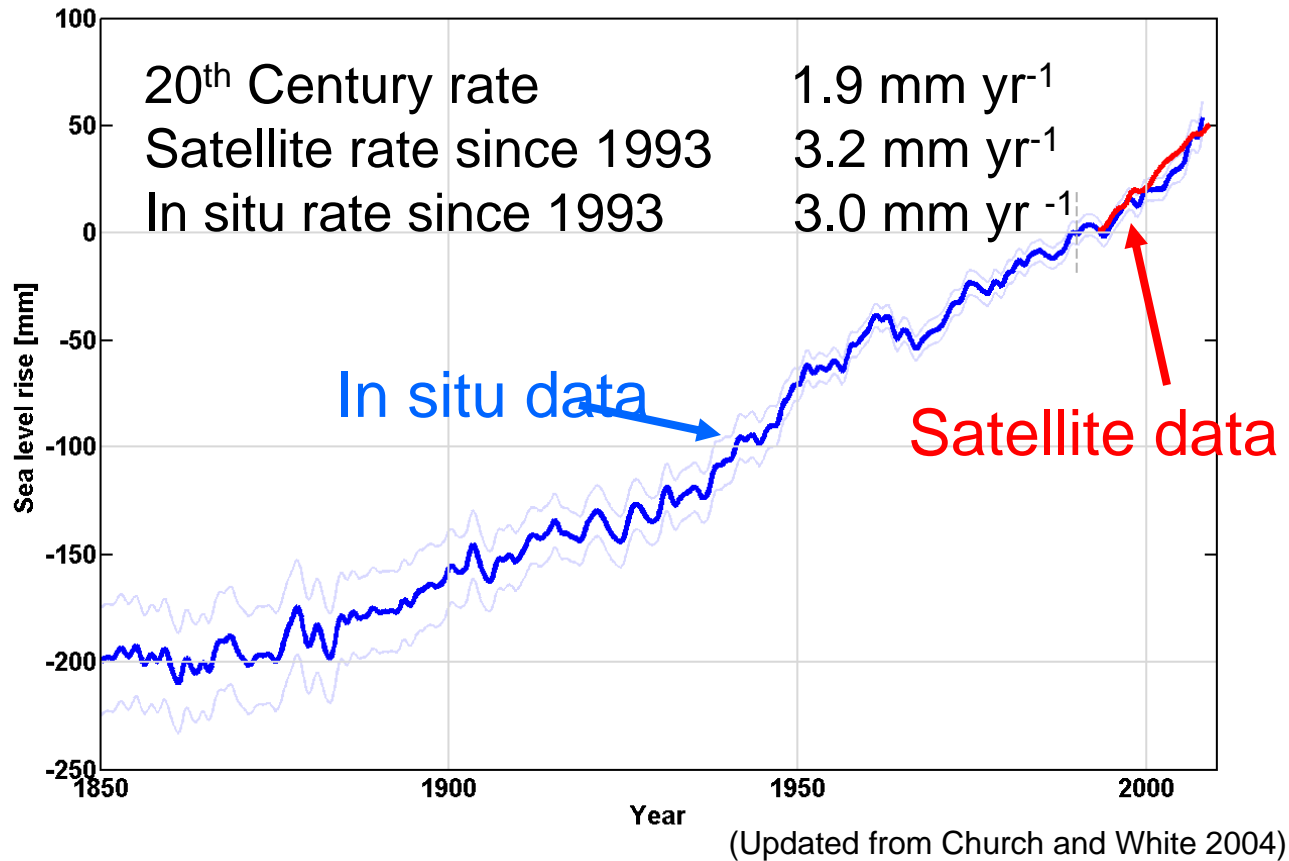
- Archimedes



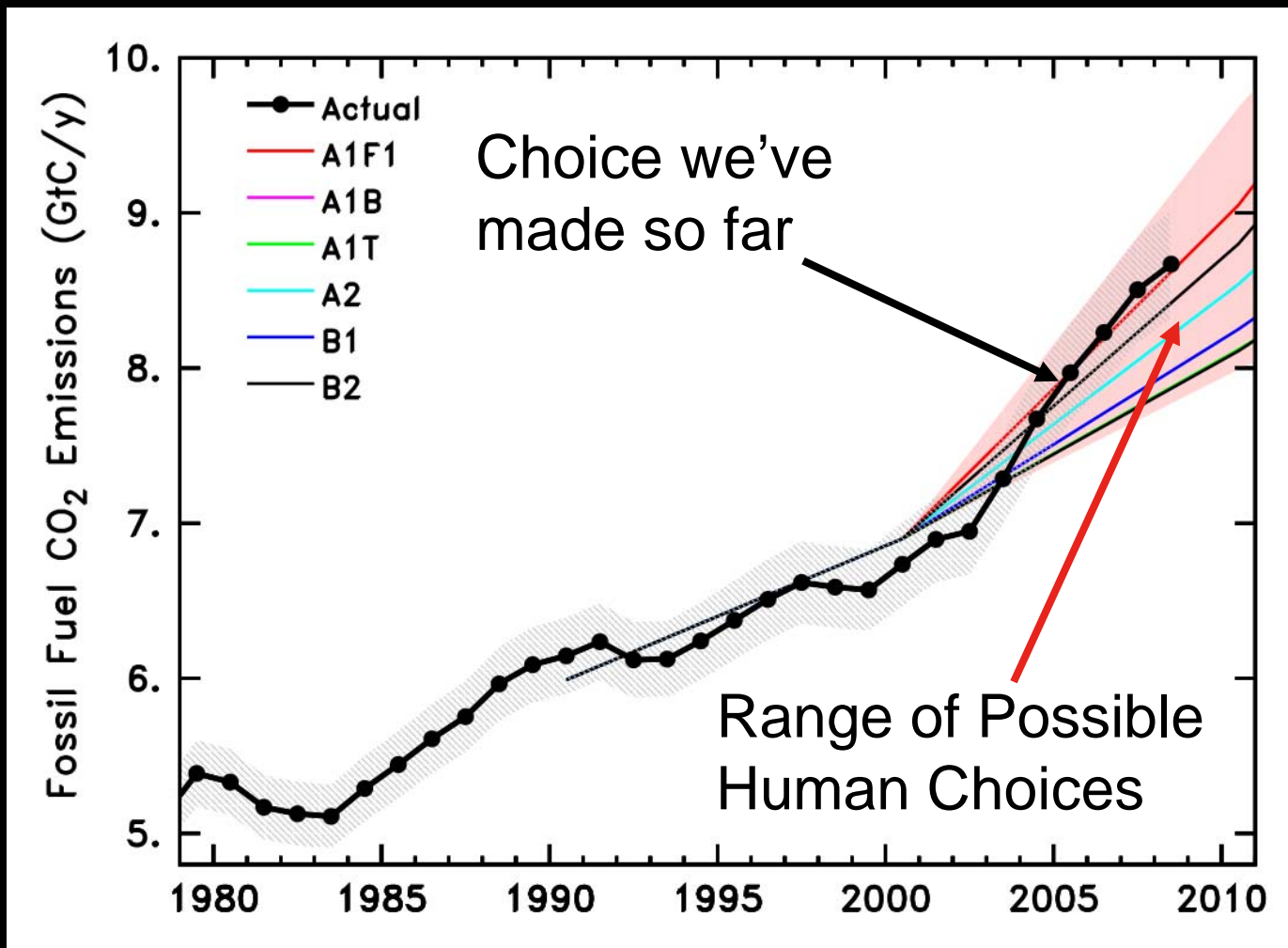
# Oceans: Where the heat is



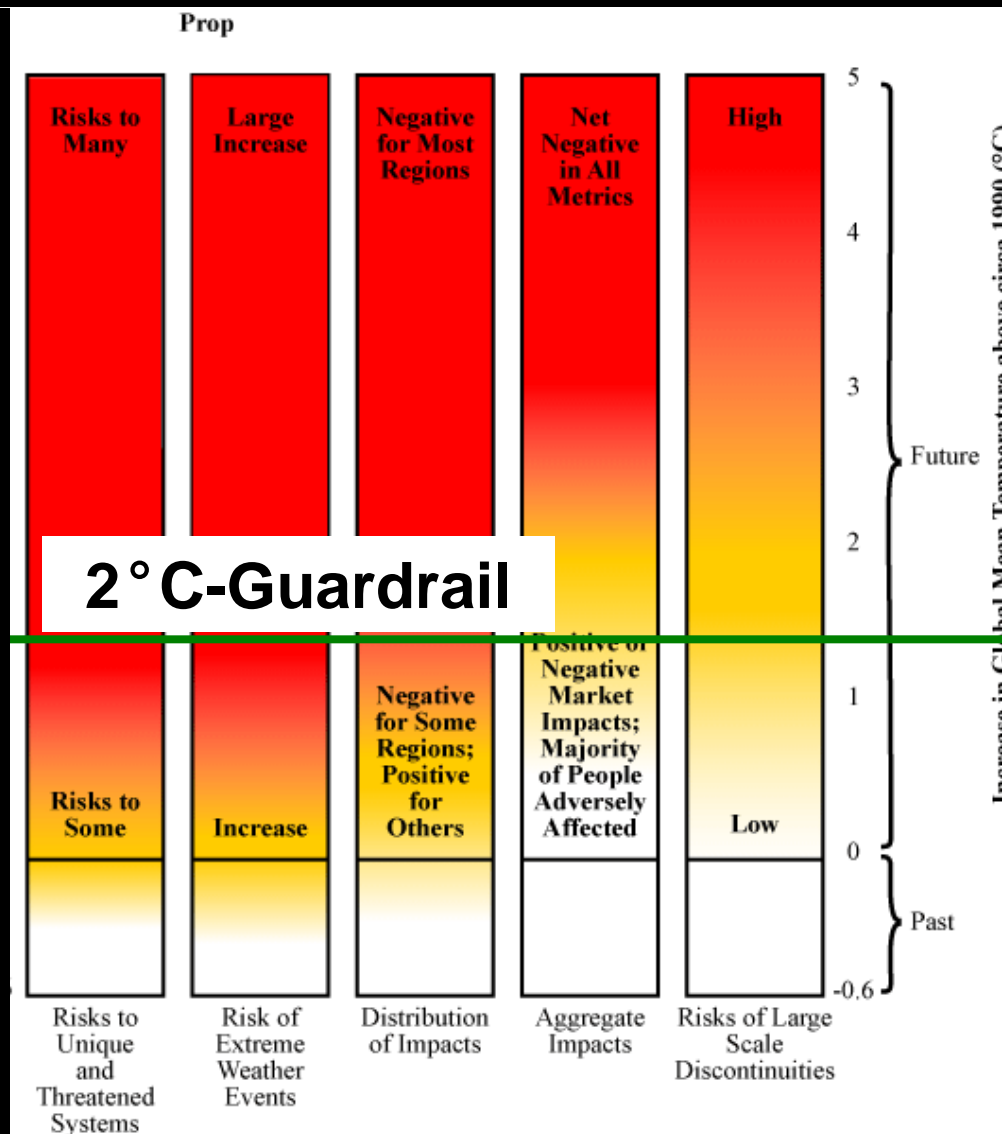
# Sea Level rise is accelerating



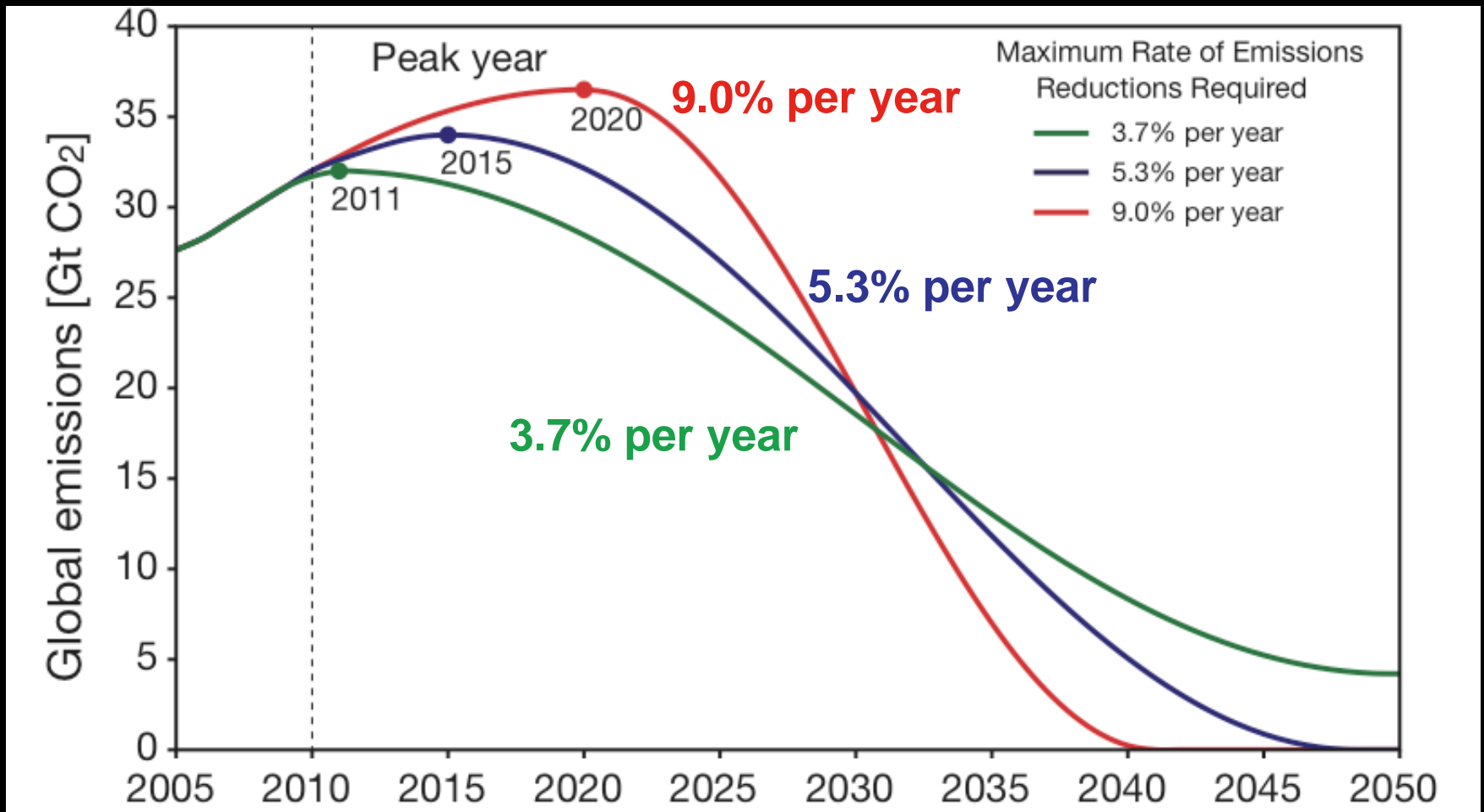
# Global CO<sub>2</sub> Emissions from Fossil Fuels



# The Guardrail



# The Carbon Budget



# Skating to where the puck is going

... Not where its been

- Wayne Gretzky (or his father)



# MidAmerican Energy

In the period 2000-2008:



Owned by Berkshire Hathaway

- 6.9 million customers
- Total fleet up 30%
- Coal-fired fraction down from 70% to 48%
- CO<sub>2</sub> intensity down 8%
- Renewables nearly 20% of portfolio



# Kenya



**DARKNESS SHOULDN'T COME IN THE WAY  
OF ENLIGHTENMENT**

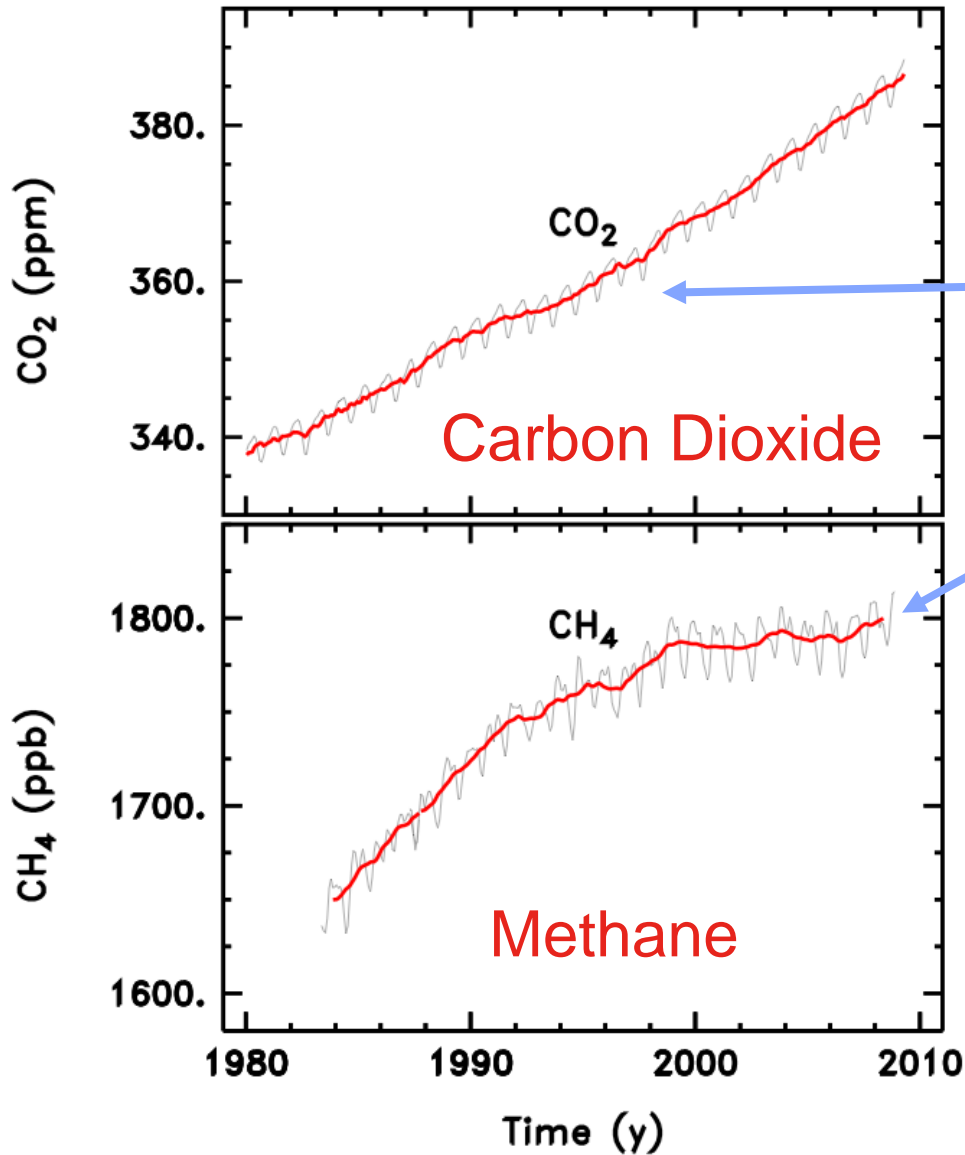
Two children are sitting at a desk, illuminated by a solar lamp. They are focused on their work, with one child writing and the other reading. The scene is set in a dark room, highlighting the importance of the solar lighting.

Step into the light. Install a Solarex Solar System from Chloride Exide in your home and see the light. Ideal for powering TV, radio and general lighting.

Contact your nearest Chloride Exide Dealer:  
Makara - Tel: 214104, Kisumu - Tel: 30662, Mombasa - Tel: 20412, Nairobi - Tel: 532211 - Mombasa - Tel: 452325  
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**See the light**

The Chloride Exide and Solarex logos are displayed at the bottom right of the advertisement. The Chloride Exide logo features the word "EXIDE" in a stylized font, and the Solarex logo features a sun icon and the word "SOLAREX".



Future progress  
of these curves

is the true  
measure  
of any climate  
action and any  
climate policy

Give me a lever long enough . . .



. . . and a fulcrum on  
which to place it, and I  
shall move the world.

If leadership is the lever,  
science is the fulcrum.





Chief Scientist

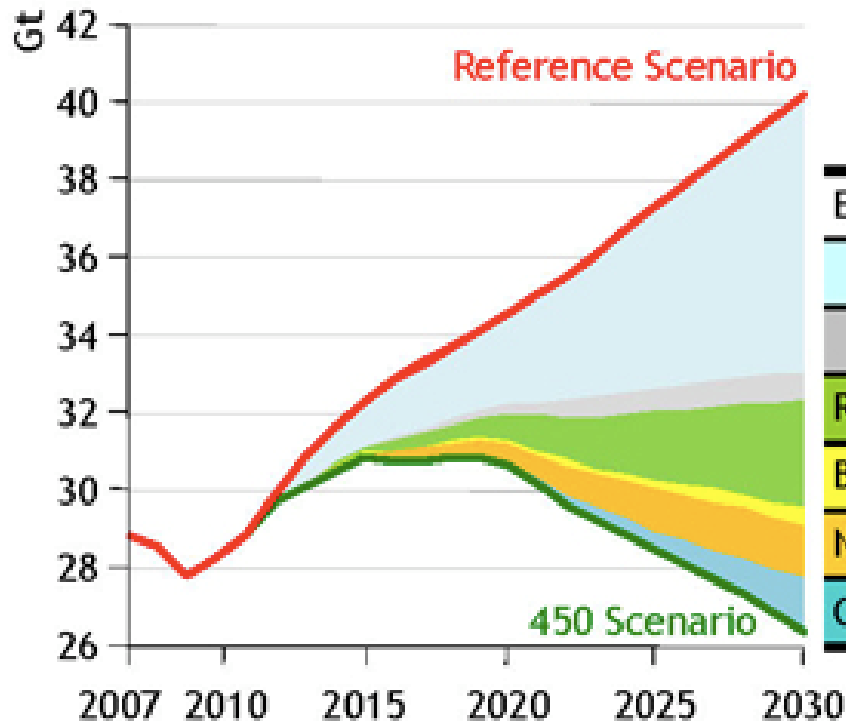
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# Meeting the Carbon Budget

World Energy Outlook 2009



|              | Abatement<br>(Mt CO <sub>2</sub> ) |       | Investment<br>(\$2008 billion) |               |
|--------------|------------------------------------|-------|--------------------------------|---------------|
|              | 2020                               | 2030  | 2010-<br>2020                  | 2021-<br>2030 |
| Efficiency   | 2 517                              | 7 880 | 1 999                          | 5 586         |
| End-use      | 2 284                              | 7 145 | 1 933                          | 5 551         |
| Power plants | 233                                | 735   | 66                             | 35            |
| Renewables   | 680                                | 2 741 | 527                            | 2 260         |
| Biofuels     | 57                                 | 429   | 27                             | 378           |
| Nuclear      | 493                                | 1 380 | 125                            | 491           |
| CCS          | 102                                | 1 410 | 56                             | 646           |