



# Man Made Climate Change Debate – New Insights

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# Richard Feynman

- “I would rather have questions that can't be answered than answers that can't be questioned....”

# State of Man Made Climate Change Debate

- Where are we after several decades of Man Made Climate Change theory/CAGW?
- Have we gone long enough to verify the accuracy of the predictions of climate/weather in regards to Man Made Climate impacts?
- Is there anyway for the energy sector to successfully combat perceptions, policies, etc.?

# State of Man Made Climate Change Debate

- Climate Change is REAL, it has always BEEN and will always be
  - This is never been debated by skeptics. Don't let anyone accuse skeptics of denying natural climate change. However, politicians, media and advocacy groups of been extremely effective at name calling "denier".
- The radiative forcing of CO<sub>2</sub> is a well established fact
- Skeptics also agree that there has been warming over the past several decades, but only **+0.8C**

# State of Man Made Climate Change Debate

- Skeptics agree that CO2 emissions can increase global temperatures (by as much as **1.2C/2.16F**) BUT question the amount of warming forecasted from CO2 and its associated feedbacks and especially the modeling.
- The moniker of “denier” is offensive.

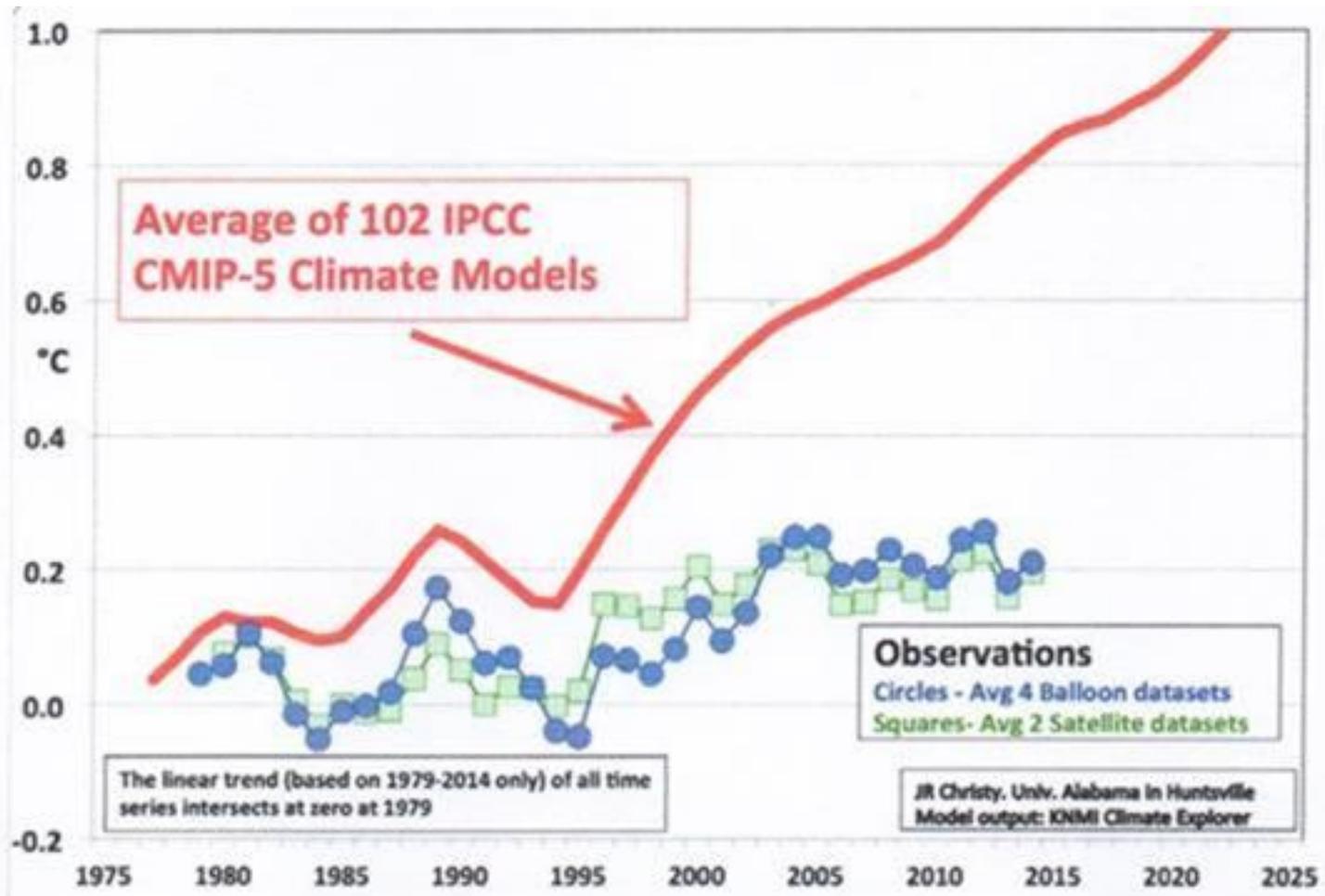
# State of Man Made Climate Change Debate

- Man made greenhouse gas emissions do impact the climate
  - However, not nearly to the extent claimed by IPCC, NOAA, advocacy groups, politicians and many so called “climate experts”.
  - Therein lies the rub and the most important point of this presentation

# State of Man Made Climate Change Debate

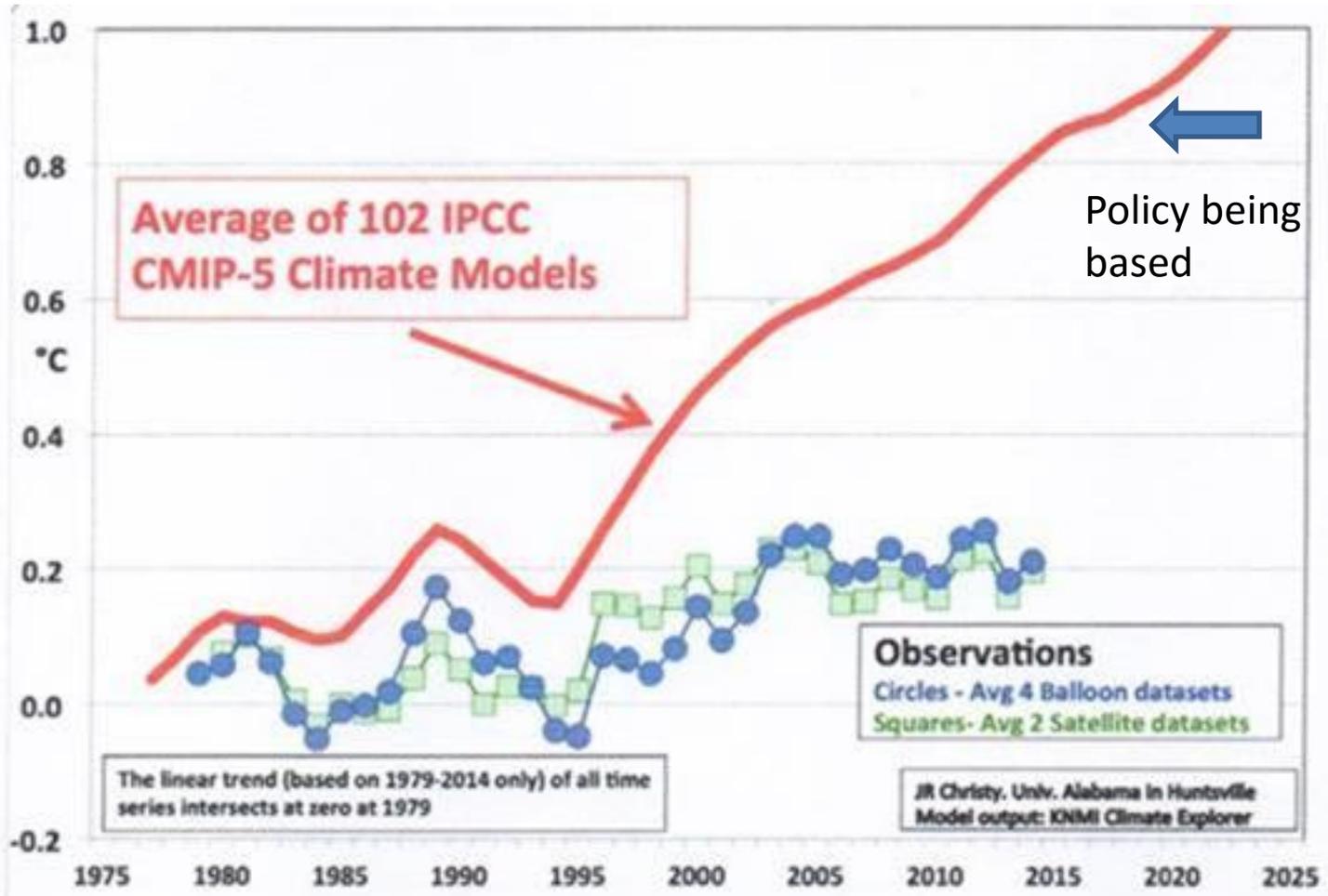
- Multiple decades of predictions have fallen far short in regards to predicted warming.
  - This is a undisputed fact. IPCC climate models have performed miserably. However, policy decisions continue to be based on the worst case scenarios predicted by the flawed models.

# How Good Have the Forecasts Been?



*CAPTION: Five-year running mean temperatures predicted by the UN's climate models, and observed lower atmospheric temperatures from weather balloons and satellites.*

# Not Very Good



*CAPTION: Five-year running mean temperatures predicted by the UN's climate models, and observed lower atmospheric temperatures from weather balloons and satellites.*

# State of Man Made Climate Change Debate

- Unfortunately, skeptics have been poor communicators from the beginning of the debate.
  - Partly due to extremely effective PR campaigning from advocacy groups, politicians and media
  - This can and MUST change or bad policy decisions will continue and this is something that needs to be effectively communicated
  - The contradictory data is in plain view of everyone, including the IPCC

# State of Man Made Climate Change Debate

- Ignorance

- The ignorance of the media and politicians knows no bounds.
- Partly the fault of skeptics not communicating well.
- However, media and politicians are not putting in any effort to ENGAGE skeptics, only to marginalize them.
- Media refuses to question anyone in field of man made climate change or any agency connected to it (NOAA, IPCC, universities, etc.). They get a pass (Climategate, data manipulation, etc.)

# How to reverse the tide of the war

- The energy industry has far more ammunition to engage the other side than they realize. Don't leave the ammunition unused.
- Don't deny that greenhouses gases impact the climate, take that talking point away.
- Hit them hard with data and facts that even the IPCC cannot refute, use their own data.
- The general public polling suggests that most are not buying the end of the world scenarios
- Don't fall into traps “warmest January ever...”

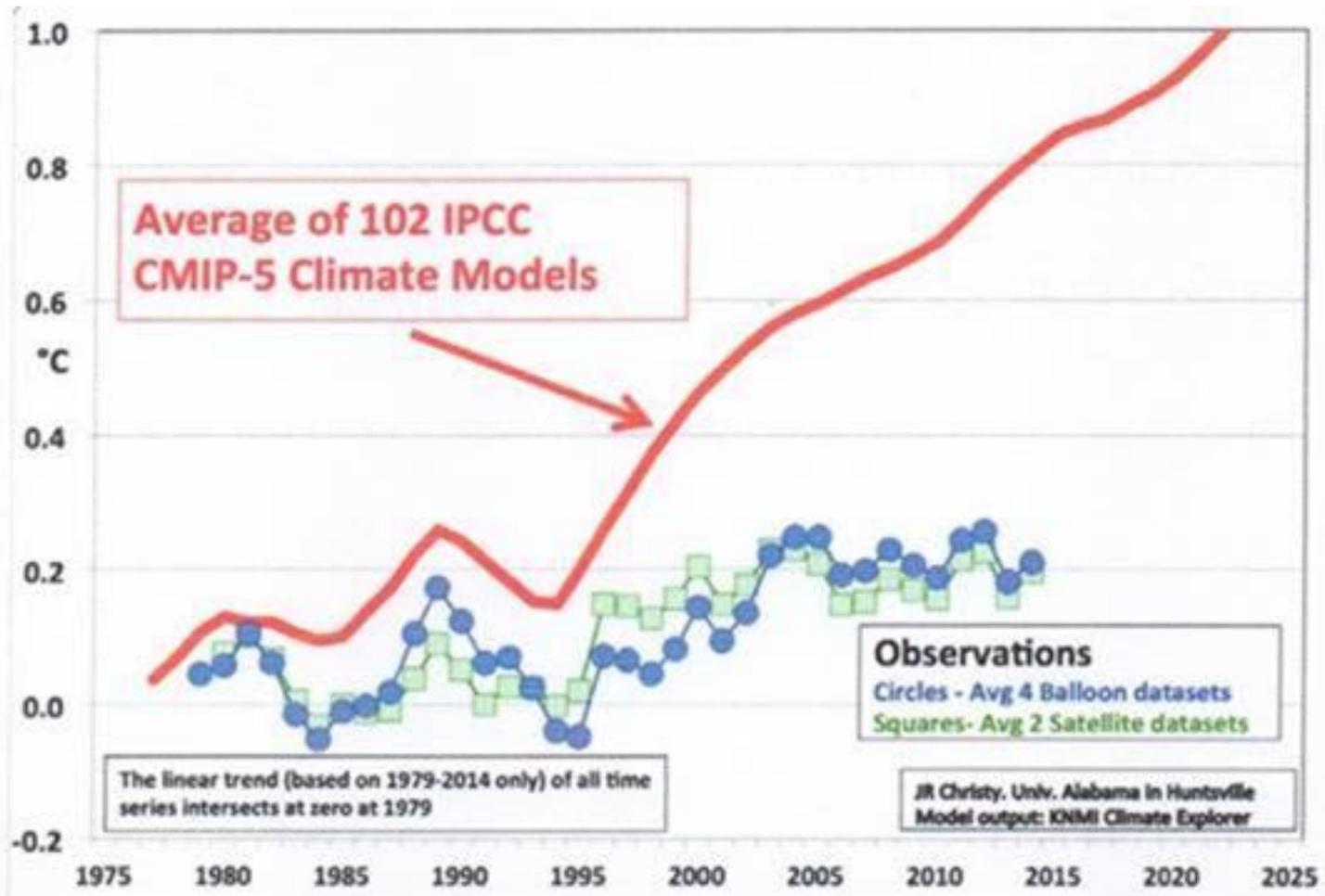
# Ammunition

- Earth's Climate Sensitivity (ECS)—how much the earth's surface will warm from a doubling of the pre-industrial atmospheric carbon dioxide concentration – as much as **6F** global rise in temperature
- The modeling predictions have fallen FAR short of the **6F**.....must hammer them hard there....why have performed so poorly?
- Hold the prognosticators accountable

# Climate and Weather Forecasting

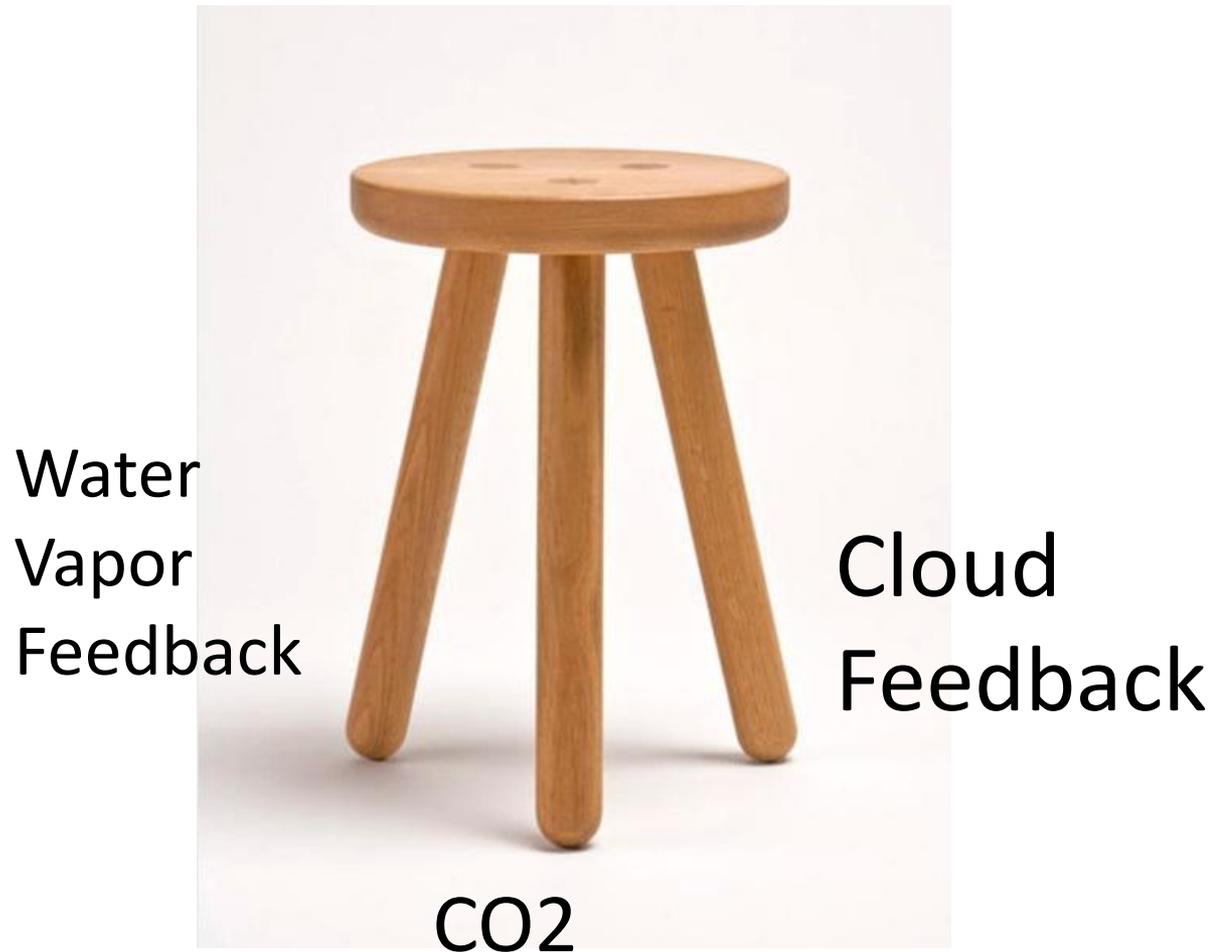
- The only way to validate man made climate change predictions is from verification of forecasts with observed weather (what really has happened).

# Climate Sensitivity – Way Off



*CAPTION: Five-year running mean temperatures predicted by the UN's climate models, and observed lower atmospheric temperatures from weather balloons and satellites.*

# Man Made Climate Change –Three Legs



# Man Made Climate Change

- CO<sub>2</sub> + Water Vapor Feedback + Cloud Feedback = warming

# Climate Sensitivity

- Assumptions 1 + 2 + 3 = Climate Sensitivity
  - Assumption 1 – CO2 = **+1.2C (+2.16F)**
  - Assumption 2 – Water Vapor = **+0.7C (+1.26F)**
  - Assumption 3 – Cloud Feedback = **+1.3C (+2.34F)**

# Ammunition

- Clouds, clouds, clouds!
- The biggest contributor of warmth in the Climate Sensitivity equation is warmth produced by the feedback of clouds – **+2.34 F**
- Increased CO<sub>2</sub>, more water vapor = more clouds
- However, recent research at CERN and others along with IPCC own admissions suggest the cloud feedback contribution is SUBSTANTIALLY less than expected.
- By its own admissions, the IPCC states that cloud feedback contribution to warmth is the LEAST understood component of climate sensitivity

# The IPCC's Admissions

- “TS.4.5 – Cloud feedbacks (particularly from low clouds) remain the largest source of *uncertainty*.”
- “TS.6.4.2 – Large *uncertainties* remain about how clouds might respond to global climate change.”

# The IPCC's Admissions

- “8 – Executive Summary – important *deficiencies* remain in the simulation of clouds and tropical precipitation (with their important regional and global impacts).”
- 3.4.3.2 –There are substantial uncertainties in decadal trends in all data sets and at present there is *no clear consensus* on changes in total cloudiness over decadal time scales.

# Climate Sensitivity

- New cloud studies suggest that climate sensitivity is much below that of the average climate model (3.2°C/6.0F) and near the low end of the IPCC's (1.5°C/2.7F) assessed range and likely lower if other studies are taken into account.
- The contribution of feedbacks to warming of the planet diminishes if climate sensitivity is less than 2.5F

# Climate Sensitivity

- CO2 is NOT the biggest contributor to warming
- The feedbacks from increased CO2 constitute the largest contributions to forecasted warming yet they are the LEAST understood.
- The idea that climate science has achieved 100% accuracy in understanding climate sensitivity is laughable.....by their own admission
- Hit them hard here

# Man Made Climate Change Theory

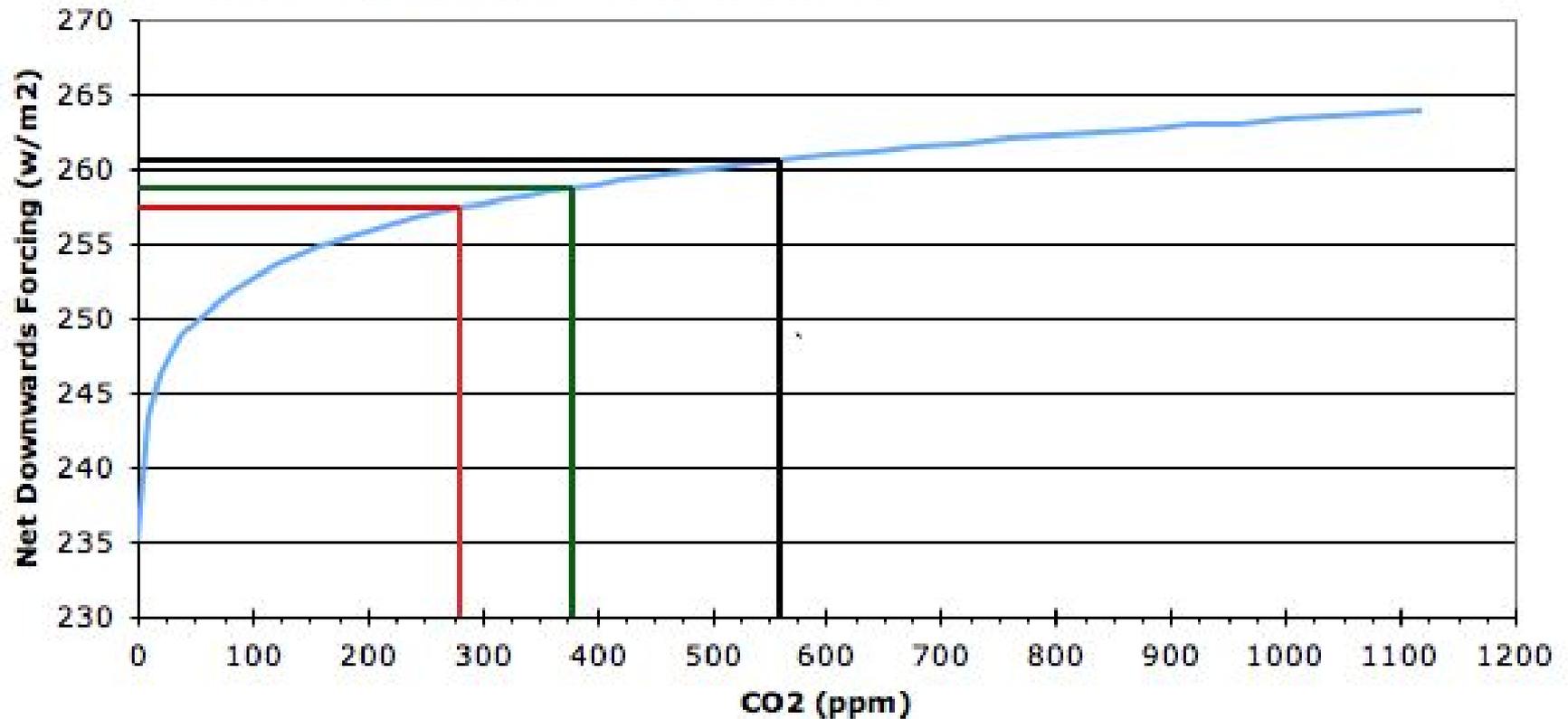
## More Problems

- Only 3 climate variables taken into account, instead of the 22 known variables that affect climate
- Doubling of CO<sub>2</sub> does not mean a redoubling of temperature over time
- Water Vapor Feedback
- Cloud Feedback

# Non Linear heating effect of carbon dioxide – not linear

## Modtrans Results

$$\text{Forcing} = 2.94 \text{ Log}_2(\text{CO}_2) + 233.6 \quad (R^2=.997)$$



— Forcing — Pre-Industrial — Present — Twice Pre-Industrial

# CO2 Feedback Problems

- Cloud Feedback and Water Vapor Feedback calculations used in climate modeling constitute the “soft belly” of the man made climate change argument. Their weakest defense.

# A Different Approach

- Green House Gas Emissions can impact the climate but be good at explaining why it won't impact the planet the ways doomsayers say it will
- Ask better questions
- Argue the results of the science
- Ask for reasonable law and policy NOT based on worst case scenarios that have shown no basis in reality

# In a Perfect World

- Both skeptics and proponents of man made climate change should want sound, well thought out public policies based on KNOWN science in regards to green house gas emissions and energy policy
- We are far from realizing it at present, however, there is an opportunity to go on the offensive by more effective communication of the poor track record of predictions and the well established weaknesses in their theory of feedbacks.

# Richard Feynman

- “Science is the belief in the ignorance of experts...”