

Model Temperature Projections Are Not Evidence

[This was sent to Senator Fielding by David Evans after the meeting, on Senator Fielding's request. Since then the first paragraph was expanded and the document was reformatted. Senator Fielding presented a simplified version to Senator Wong a few days later.]

The *Global and Continental Temperature Change* graphic was presented by the Department at the meeting. Senator Wong referred to it several times as “evidence”, and it was clearly something that affected her decisions. It compares models projections of global air temperatures for the last century, when the models are run with all their inputs including human emissions (pink bands) and run without the human emissions forcings (blue bands). The observed data is always much closer to the pink bands than the blue bands. It is also shown here

<http://www.greenfacts.org/en/climate-change-ar4/figtableboxes/figure-4.htm>

First, the climate models are calibrated and tweaked in part on the data of the last century, using all the model inputs. So naturally they “predict” the data fairly well over the last century when all known inputs are used (pink bands), and of course they fail when some of their inputs (the forcings from human emissions) are turned off (blue bands). The graphic only tells you that the climate models require the human emissions forcing inputs to be turned on in order to correctly “predict” their training data.

Second, climate model projections are only meaningful to the extent that the models accurately mimic reality. In the climate models, almost two thirds of the predicted warming is due to extra water vapor (the main greenhouse gas); the initial one third is due to CO₂ and other forcings, and that “no-feedbacks” warming is then amplified by the assumed feedback factor of almost three. The forcings and no-feedbacks warming due to the CO₂ are backed by empirical evidence and are not in dispute.

However the feedback factor in the climate models is wildly wrong:

- Radiosonde observations during the last warming period (1979 - 1999) could find no trace of the extra water vapor, which according to the models should have revealed itself as hotspot over the tropics at about 10 km in height (p.675, AR4). The hotspot is a firm prediction of the models and responsible for almost two thirds of the predicted warming; it cannot be found so the models are wrong. No hotspot implies water vapor feedback is

not positive, reducing the feedback factor from almost three to less than 1.2, thereby reducing model warming predictions (due to any forcing) by more than half. Note that the radiosondes can detect temperature differences of 0.1 C, while the models expected the hotspot to be about 1.0 C.

- Measurements of outgoing longwave radiation by the ERBE satellite during the temperature excursion of the 1998 El Nino suggests that the feedback factor of the climate system dampens the no-feedbacks warming by about a half (Lindzen, in press).
- Close observation of clouds also suggests that the feedback factor of the climate system dampens the no-feedbacks warming by about a half (Spencer, 2009).

Models omit many possible causes of global warming, such as enhanced cloud formation by cosmic rays and the modulation of cosmic rays by the sun's magnetic field.

None of the 2001 climate models predicted that the temperature would drop for the next eight years (satellite data; no corruption from the urban heat island effect); they were all wrong.

Hydrocarbon use shows that human emissions of CO₂ weren't significant before 1940. Yet the climate models were calibrated by assuming all the heat rise since the beginning of the industrial revolution is due to the currently considered forcings, principally human CO₂. The earth experienced a little ice age in the 1700s and has been recovering ever since; the models are calibrated to assume this natural warming is due to CO₂.

Third, models are not evidence. Evidence are observations by someone at some time and place, independent of theory. Models are humungous numbers of calculations, each of which individually could be performed on a handheld calculator. So models are theory, not evidence. Yes, the climate models do contain some well-established science that has been verified by empirical observations, but they also contain a myriad of assumptions, omissions, guesses, and gross approximations, a mistake in any of which can invalidate the climate models.