

Economics Legislation Committee
ANSWERS TO QUESTIONS ON NOTICE
Industry, Innovation, Science, Research and Tertiary Education Portfolio
Supplementary Budget Estimates Hearing 2012-13
26 November 2012

AGENCY/DEPARTMENT: DEPARTMENT OF INDUSTRY, INNOVATION, SCIENCE, RESEARCH AND TERTIARY EDUCATION

TOPIC: Minister Combet's speech

REFERENCE: Question on Notice (Hansard, 26 November 2012, page 7).

QUESTION No.: SI-198

Senator BUSHBY: There is only one more question that arises out of Minister Combet's speech. Has each decade since the 1940s in Australia been warmer than the preceding decade?

Senator Lundy: I am happy to take that on notice because I would like to use Minister Combet's speech as a reference and just view the facts as you have described.

Senator BUSHBY: This is not in reference to any quote. Does the warming effect of carbon dioxide incrementally rise or fall with increasing concentration of it in the atmosphere?

Prof. Chubb: Does the concentration of CO₂ rise or fall?

Senator BUSHBY: Does the warming effect of carbon dioxide incrementally rise or fall with increasing concentration of it in the atmosphere?

Senator Lundy: Before you answer, Professor Chubb, I think this falls into the category of quizzing the Chief Scientist about matters of scientific fact. In this case it may or may not be a fact that you are describing. You are asking for verification, so I think it falls into the category of quizzing the Chief Scientist. I am happy to take that question on notice, because I am not sure where it has come from or what point you are trying to make.

Senator BUSHBY: It is a scientific fact. The point I am trying to make is a matter for me.

Senator CAMERON: If it is a fact, it is a fact.

Senator BUSHBY: Exactly. I want to know on notice.

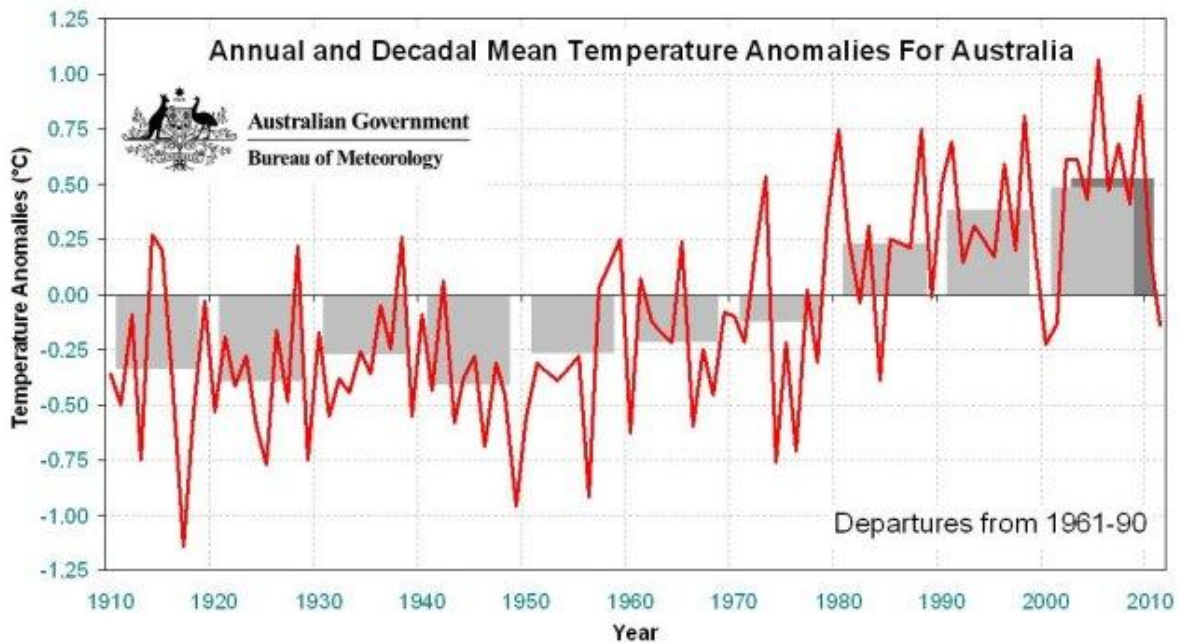
Senator Lundy: I will take that on notice.

CHAIR: The minister has advised that she has taken it on notice.

ANSWER

The following response has been provided by the Department of Climate Change and Energy Efficiency which has responsibility for this matter.

Bureau of Meteorology temperature data for Australia shows that each decade since the 1940s has been warmer than the preceding decade. The figure below highlights the decadal trend.



Annual and decadal mean temperature anomalies for Australia (compared with 1961 to 1990 average). The average for the past 10 years is shown in darker grey. This figure is available from the Bureau of Meteorology *Annual Australian Climate Statement 2011* www.bom.gov.au/announcements/media_releases/climate/change/20120104.shtml.

The warming effect of carbon dioxide in the atmosphere is logarithmic. This means that for every doubling of carbon dioxide in the atmosphere, the same amount of warming occurs in the surface temperature at equilibrium.

Over the long term, increases in the atmospheric concentration of carbon dioxide will lead to a sustained increase in global temperature. Globally, warming of around 0.8 degrees Celsius has already been experienced over the 20th century.

On top of this sustained increase in global temperatures, natural variations in the Earth's climate system, such as the El Niño Southern Oscillation, mean that global temperature still fluctuates on a year to year basis.