

Submission to the Garnaut Review by Darebin Climate Action

Darebin Climate Action : Convenor: Carol Ride, Alphington 3078

Climate change impacts are happening at lower temperature increases and more rapidly than projected. In September 2007 climate scientists were shocked by the vanishing Arctic sea-ice and now predict it to disappear entirely in summer as early as 2010, **a century ahead** of the IPCC projections. With the rapid loss of the Arctic sea ice, due to the albedo effect, the disintegration of the Greenland ice sheet will speed up. Sea rises up to five metres by the turn of this century are now predicted.

Climate change is happening exponentially, rather than linearly.

IPCC predictions are dangerously out of date when released thus not a responsible base from which to determine climate change policies

Due to its rigorous four year production schedule, the findings are already several years out of date by the time they are released.

IPCC forecasts do not include 'slow' feedbacks. Recent data suggests that the widely-accepted estimate of climate sensitivity which predicts a rise of 3°C from a doubling of CO₂ is inaccurate, and that a doubling of CO₂ may produce a rise of 6°C when 'slow' feedbacks are considered. For example, with increased temperatures carbon sinks such as forests will start to decompose and release carbon faster than they can absorb carbon thus converting into massive carbon sources and compounding temperature increases.

Crucial tipping points were passed at 320 ppm. Dangerous anthropomorphic change became evident at least two decades ago, as evidenced by the loss of the Arctic sea ice, when temperatures were only about 0.5°C above the pre-industrial levels (0.3°C lower than at present) and atmospheric greenhouse gases were at 320ppm CO₂. Recent data on the reduced capacity of oceans and soils to store carbon, along with the acidification of the oceans, suggest that we are at the precipice of climate collapse.

Climate modelling must be based on the most recent data. This should include consideration of Arctic sea ice loss, the instability of the Greenland ice sheet and include carbon cycle feedbacks, long-term climate sensitivity and the consequences for biodiversity of increased rates of temperature change.

Emission reduction targets must be based on the science. NASA's leading climate scientist, James Hansen, believes that a safe climate cannot exist without sea ice and that CO₂ of 300-325ppm (we are currently at 382ppm) is needed to restore it to its state of 25 years ago.

The balance of probabilities is that catastrophic climate change - a 'transformed' planet - will be the result if we do not take urgent action to bring our emissions to zero and start actively cooling the planet. Risk taking for Australian civil engineers is in the order of one in a million, not one in four or five, the levels of probability of catastrophic outcomes proposed as acceptable when considering climate change targets. Clearly this is not responsible or acceptable.

This submission is based on *Climate Code Red* by David Spratt and Philip Sutton. Full report: <http://www.carbonequity.info>