

**Managing Risk with a Long-term (Multi-decadal) Global Climate Change  
Derivatives Trading Facility**

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**ABSTRACT**

The potential of a long-term (multi-decadal) global climate change derivatives trading facility, to enable the trading of financial products related to long-term trends in measures of global and regional climate change, is explored. Such an establishment is seen as enabling the transfer of climate change related financial risk via futures, options, and other insurance linked securities, and would represent a significant contribution to this area of risk management. A review of the various financial market products that are utilised to manage risk is presented in their various categories. These include the related areas of insurance linked securities and risk transfer instruments; the importance of the developing weather and climate derivatives industry; and, the potential application of these fields of knowledge to addressing the financial consequences of anthropogenic climate change. A description of a 'simulated' trading platform, derived from numerical modelling of various processes involved in climate variability and change, is also presented, depicting how such a platform might operate in 'real-time'. A trading platform designed along these lines would lead to the implementation of protection strategies, with their implications for future generations; the raising of capital for relevant ventures (such as for the generation of renewable energy), speculation (of course), with the interesting side benefit – leading to the emergence of an unbiased consensus view about the future climate. It is suggested that such securities could be used to hedge against risk related to climate change. Calculating the price of various derivative products related to the future distribution of various measures of global and regional climate variability and change is demonstrated, with a focus placed upon applying historical data bases of physical parameters measuring drivers of Australia's climate such as the El Niño Southern Oscillation; the Indian Ocean Dipole; and the Southern Annular Mode.