

Getting warmer ... with Kathie Stove BSc ELS

In January 2005 Dr Rajendra Pachauri made this strong statement: "Climate change is for real. We have just a small window of opportunity and it is closing rather rapidly. There is not a moment to lose."

Why is it notable that this particular man said such a thing? Plenty of people have said the same and plenty of others have said they are talking rubbish.

Dr Pachauri is Chairman of the Intergovernmental Panel on Climate Change (IPCC), the international body set up to assess the scientific, technical and socio-economic information relevant to climate change. Well, of course he would say such things – he's one of them.

But it's not quite as clear cut as it might at first seem. Let's have a closer look at how the good doctor got to this position.

In 2001, the repeated calls for urgent action on climate change by then IPCC Chairman, Dr Robert Watson, prompted the oil company Exxon to specifically ask the White House to replace Dr Watson. The Bush administration successfully lobbied other countries to elect Dr Pachauri, who former Vice-President Al Gore called the "let's drag our feet" candidate.

If the foot-dragger has become convinced and activated, then it's time for the rest of us to take this seriously. This new monthly column will give you the low down on how and why the world is changing, and some tips on what you can do about it.

What can I do?

Complete the Energy SA home audit at www.sustainable.energy.sa.gov.au to see where you use energy at home, and where you can improve and save money.

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It is one thing to believe the evidence of climate change until now, but can we believe scientists' predictions of more change based on modelling?

Scientists construct models by compiling data on all the known components of the climate system. Clearly they can't verify a model's accuracy for prediction but, based on what has happened in the past, they can say with some assurance, if this happens then that will result. And the accuracy of models is constantly improving as more data is incorporated.

At Australia's CSIRO, scientists are developing and using global climatic models and limited-area atmospheric models to simulate the world's and Australia's future climate.

The CSIRO global climate model incorporates data from the atmosphere, oceans, cryosphere (ice surfaces) and biosphere. It plots points all over the world in each 'sphere' and at each point computes quantities such as temperature and wind velocity (atmosphere), and salinity and current velocity (oceans). Also in the model are physical transfer equations for how the points interact with each other. The model is started with a realistic climate state and then run forward to simulate evolving weather and climate under different conditions, such as increased greenhouse gas concentrations.

The limited-area models can select a local area of down to 30 kilometres for closer study and can study extreme weather phenomena such as tropical cyclones.

What can I do?

By now we should all have enough 'green' and canvas bags to carry all our groceries for the next year. Now the important bit - use them every time you shop. Leave some in the car, and by the door at home, and get into the habit of using them.