

Two declarations at odds

Geneva

A PLEA that nations should promptly begin to reduce emissions of greenhouse gases, and strengthen the sinks that remove them from the atmosphere is the centrepiece of the statement adopted by more than 700 scientists at the end of their six-day meeting here on 3 November.

The technical meeting, organized by UN bodies including the World Meteorological Office (WMO), and the UN Environmental Programme (UNEP), was called to consider the reports of the Intergovernmental Panel on Climate Change (IPCC) and to review 10 years of the World Climate Programme. It will have been followed this week by a meeting of government ministers and officials, who will also produce a statement.

The scientists' statement is significantly stronger than assessments of climate change made by IPCC. It says that there are "technically feasible and cost-effective

opportunities" for reducing carbon dioxide emissions in all countries, and that many industrialized nations should be able to reduce them by 20 per cent by 2005.

This view is not likely to be embraced by the ministerial part of the conference. As officials struggled with the drafting of the second statement, several hundreds of metres away from the main conference at the Palais des Nations, the opposition of the United States to targets for carbon dioxide emissions seemed to prevail over the positions of European states already committed to stabilizing emissions.

The need for a statement, ostensibly to pass onto ministers, overshadowed the scientific meeting. The meeting, according to IPCC chairman Bert Bolin was a "funny creature" with little new science.

The final session, at which the details of the statement were hammered out, uncovered the hidden agendas of some of the participants. This, for example, was when Yuri Izrael, chairman of the IPCC working group on the impact of climate change and a prominent member of the Soviet ministerial delegation, tried (with others) to remove the statement on the prompt reduction of carbon dioxide emissions.

The final version is a victory for those allied more or less closely with the environmentalist cause, led by Irving Mintzer, from the University of Maryland, and

Peter Gleick from the California-based Pacific Institute.

In the event, the scientists' declaration will have little bearing on the expected ministerial statement. "You never teach a minister anything at a conference", says Bolin. That statement is expected merely to welcome the commitment by the European Communities and others to stabilize carbon dioxide emissions by 2000.

The final draft presented to ministers on Tuesday urges other developed countries to adopt strategies which will have "significant effects on limiting emissions" other than CFCs and other greenhouse gases not controlled by the Montreal Protocol, with no mention of a timetable.

Simon Roberts of Friends of the Earth, one of many environmental groups represented as observers at the meeting, said that officials negotiating the ministerial statement were "working in a scientific vacuum" by ignoring the scientists' conclusion.

But Howard Ferguson, coordinator of the conference, said that the scientists' declaration should be seen as a "longer-term document" that will influence the governing bodies of environmental research programmes in the coming year. Among other things, the statement urges more climate research and monitoring centred on a new Global Climate Observing System—a comprehensive network of land, ocean and space-based monitoring stations.

Peter Aldhous

The history man

Geneva

MIKHAIL Budyko, from the Soviet State Hydrological Institute at Leningrad, believes that accurate regional forecasts of climate change are already possible by the reconstruction of past climate at times of differing concentrations of carbon dioxide. But Budyko won few converts to his view.

Lacking access to computer power, Budyko and many of his compatriots have concentrated on climate history. His argument last week was based on climate reconstructions for three periods of warming in the Northern Hemisphere: the mid-Holocene (5,000 to 6,000 years ago), the Eemian interglacial (125,000 years ago) and the Pliocene optimum (3.3 to 3.4 million years ago).

Budyko argues that the relative temperature increases at different latitudes are remarkably consistent during the three warming periods, and also claims concordance with low-confidence IPCC regional predictions of warming.

But Budyko's palaeoclimate reconstructions predict much greater increases of precipitation with warming than IPCC's models, especially in mid-latitudes. That leads him to conclude that the productivity of natural ecosystems and agriculture will be enhanced, and that the world economy might benefit from a return to a climatic "Paradise lost". But his current ideas are shared by few climatologists.

Much of the Northern Hemisphere warming and increased rainfall in the Holocene and Eemian was due to changes in the Earth's orbit, rather than carbon dioxide, climate modellers say. P.A.

Climatologists wanted

Geneva

ACCURATE regional forecasts of climate change could be delayed for 20 years by shortages of computing power and trained climatologists, according to leading climate modellers this week. Yet governments may demand regional predictions before committing themselves to stringent action against global warming.

Jerry Mahlman, of Princeton University warned the conference of a tendency to underestimate the real problems modellers face in making regional predictions. The need is for a doubling of the resolution of the climate models on which IPCC's assessment is based.

Running such models will take ten times the computing power now devoted to climate modelling and may not be achieved for ten years, says John Mitchell of the UK Meteorological Office. That bottleneck may be removed with growing international concern over global warming.

But Mitchell also says that the greatest single barrier to accurate regional prediction is the lack of understanding of the physical processes within clouds—turbulence, radiative fluxes and the behaviour of water droplets.

Mitchell's colleague Geoff Jenkins says that the British government could "throw £5 million into these studies" and achieve very little unless there were more researchers. The people needed, physical scientists with a solid training in environmental science, are in very short supply he says. Of some 20 recent recruits at the Meteorological Office's Hadley Centre for climate change research, which opened earlier this year, only three had previous experience in climatology. Mitchell reckons that it takes three years for good young physical scientists to become productive in the field.

The problem seems to be global. Gordon McBean, chairman of the steering committee of the World Climate Research Programme, fears that "we may end up with more funds than people to carry out the work". He wants to see the bridging of the gap between the physical and environmental sciences in most countries' educational systems. But he sees a ray of hope in US plans to begin new postgraduate and postdoctoral programmes geared to the interpretation of the vast quantities of data expected from remote-sensing satellites.

Peter Aldhous