

## CLIMATE CHANGE

## UN sets out emissions plan for planes

*Standards aim to reduce CO<sub>2</sub> produced by new aircraft.*

BY JEFF TOLLEFSON

A United Nations panel has proposed the first global greenhouse-gas emissions standard for aircraft.

The draft rule, released by the International Civil Aviation Organization (ICAO) on 8 February, would apply to most new commercial and business aircraft, including designs already in production. But it would require only minimal changes to aviation technology over the next 12 years, and many environmentalists say that the proposal is inadequate.

The ICAO standard would take full effect in 2028; the panel is expected to adopt the plan later this year. Doing so could cut the amount of fuel used at cruising speed by an average of 4% compared with current levels, according to the International Council on Clean Transportation (ICCT), a non-profit research group in Washington DC.

But many environmental groups found the proposal wanting. “We think that this is just woefully insufficient,” says Vera Pardee, a lawyer with the Center for Biological Diversity in Oakland, California. She notes that the plan would not apply to aircraft that are already flying.

Daniel Rutherford, programme director for marine and aviation at the ICCT in San Francisco, California, agrees that the ICAO could have been more aggressive. An ICCT study released in December found that manufacturers could reduce fuel consumption in new planes by 25% in 2024 and by 40% in 2034 by improving engine technologies and aerodynamics, and reducing aircraft weight.

Nonetheless, Rutherford says, the ICAO’s plan is a step forward. “These standards do tend to matter over time as you update them and make them more stringent,” he adds.

The ICAO process aims to plug a gap in the UN climate agreement signed in Paris last December. The panel also is working on a market-based offset mechanism that would levy a fee on international flights.

In the meantime, individual countries might implement more-stringent standards for aircraft emissions, and environmentalists are gearing up for a fight. For instance, lawsuits from environmental groups helped to push the US Environmental Protection Agency to begin developing its own greenhouse-gas standards for aircraft. ■



Pollution in New Delhi fell by 10% when vehicle numbers on its roads were temporarily reduced.

## ATMOSPHERIC SCIENCE

## Car ban yields science bounty

*Scramble by researchers to monitor driving restrictions in Indian capital pays off.*

BY MEERA SUBRAMANIAN

New Delhi may be the world’s most polluted city, but it’s making an effort to relinquish that title. With pollution from particulate matter at potentially lethal levels early last December, city officials took a drastic step: they announced that they would temporarily restrict the use of private vehicles by allowing owners to drive only on alternate days, based on the sequence of their number plates.

The initial results of that 15-day trial, which began on 1 January, are now in. Although traffic actually increased in the first week of the ban, the levels of PM<sub>2.5</sub> — particulate matter measuring less than 2.5 micrometres across — fell by roughly 10%. That is a victory not just for New Delhi officials, but also for the scientists who sprang into action to collect the data necessary to determine whether the test had achieved its goal.

“This experiment with ‘live research’ has

been really quite exciting,” says Santosh Harish, assistant director of the India centre of the Energy Policy Institute at the University of Chicago (EPIC-India). EPIC-India and the New Delhi-based Council on Energy, Environment and Water (CEEW), an independent think tank, used video monitors around the city to document the types and numbers of vehicles on the roads. The groups had less than a month to collect baseline data before the driving restrictions began.

But they weren’t the only researchers interested in Delhi’s living lab. Economist Gabriel Kreindler of the Massachusetts Institute of Technology in Cambridge scrambled to secure human-study approval and funding for a survey of driver behaviour during the traffic restrictions. Within 18 days of the announcement of the driving ban, he had arrived in New Delhi to oversee a surveying team from the Abdul Latif Jameel Poverty Action Lab’s office there. Kreindler’s work eventually found that the alternate-day restrictions were

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