

Before the Hearings Panel

Under the Resource Management Act 1991

In the matter of the Proposed Otago Regional Policy Statement
2021

STATEMENT OF EVIDENCE OF JAMES ARTHUR RENWICK FOR THE ENVIRONMENTAL DEFENCE SOCIETY INCORPORATED

18 NOVEMBER 2021

Introduction

1. My name is James Arthur Renwick. I am a Professor in the School of Geography, Environment and Earth Sciences at Victoria University of Wellington.
2. In my statement I rely on the consensus understanding of the global scientific community on the causes of climate change, and what is required to mitigate it.

Qualifications

3. I hold a PhD in Atmospheric Sciences from the University of Washington (Seattle). I specialise in climate and atmospheric science including the dynamics and statistics of large-scale atmosphere circulation; climate variability, predictability and prediction; climate change; and numerical modelling of the climate.
4. I am a member of a number of leading scientific organisations including the World Climate Research Programme Joint Scientific Committee, the World Meteorological Organisation Executive Council Panel of Experts on Polar Observations, the American Geophysical Union and the Royal Society of New Zealand. I was until recently the Chair of the Royal Society of New Zealand's Climate Expert Panel.
5. I am widely published in the field of atmospheric and climate science and have extensive experience as a researcher in these fields. My achievements in the field include serving as a Coordinating Lead Author for the Intergovernmental Panel on Climate Change (IPCC) in respect of the 6th Assessment Report (AR6, 2018-2021), as a Lead Author on the 5th

Assessment Report (AR5, 2010-2013) and 4th Assessment Report (AR4, 2004-2007). I was a contributor towards the 2007 Nobel Peace Prize that was awarded to the IPCC and Albert Gore Jr.

6. In 2005 I was awarded the Kidson Medal of the N.Z. Meteorological Society, the highest New Zealand honour for atmospheric and climate sciences. In recent years, my research has been supported by two grants from the Marsden Fund, awarded for the periods 2005-2008 and 2014-2017. I have written a number of climate change-related reports for New Zealand businesses and government agencies and I have given evidence on climate change in court on a number of occasions over the past 20 years.

Code of Conduct

7. I advise that I have read the Code of Conduct for Expert Witnesses contained in the Environment Court Practice Note 2014 and to the extent that I am giving expert evidence, have complied with it in preparing this evidence. I confirm that the issues addressed in this evidence are within my area of expertise and I have not omitted material facts known to me that might alter or detract from my evidence. Other than when I state I am relying on the advice of any other person, this evidence is entirely within my area of expertise.

Involvement in case

8. This evidence is provided in support of the Environmental Defence Society's (EDS) further submissions on the Proposed Otago Regional Policy Statement (pORPS).
9. In relation to matters relevant to my expertise and this evidence, it is my understanding that EDS has lodged further submissions on the pORPS:
 - (a) In opposition to Christchurch International Airport Limited's submission which seeks amendments to the pORPS to provide for airports, aerodromes and ancillary infrastructure within the definition of regionally significant infrastructure and provide greater recognition of this through subsequent provisions; and
 - (b) Broadly in support of the Royal Forest and Bird Society of New Zealand's submission which, *inter alia*, seek changes to the pORPS to require the Council to develop climate change responses for the region which provide for initiatives that reduce greenhouse gas emissions.

Statement regarding the Otago Regional Policy Statement

On climate change and aviation

10. The latest IPCC Assessment of climate change (released 2021-2022) was described as a "code red for humanity" by António Guterres, Secretary-General of the United Nations. The globe has already warmed 1.1°C from

pre-industrial conditions and to stop warming at 1.5°C or even 2°C (and thereby avoid ever-worsening climate change impacts), the time for action is now very short.

11. In the 30 years since the globe has been talking about emissions reductions, their level in the atmosphere has almost doubled. It is now well-recognised that to stop future warming, emissions of carbon dioxide must be reduced to zero.
12. The IPCC estimates that to limit warming to 1.5°C, global emissions must peak before 2025, and must reduce nearly by half by 2030, reaching zero no later than 2050. The 2020s must be the decade of action, to get us on the path to zero emissions.
13. Moreover, under New Zealand law, the “Zero Carbon Act” commits this country to play our part in global efforts to limit warming to 1.5°C above pre-industrial levels.
14. The aviation sector must play a role in the transformations needed to meet emissions reductions targets. The latest IPCC report highlights that:
 - “Meeting climate mitigation goals would require transformative changes in the transport sector”; and
 - Of total global transport emissions, 12% came aviation, and emissions from aviation grew rapidly between 2010 and 2019.
15. There are two approaches to reducing aviation emissions:
 - Developing low-emissions fuel alternatives, e.g. biofuels and hydrogen fuel cells; and
 - Reducing energy demand by reducing demand for flying.
16. While alternative fuels are being developed, and may eventually be feasible for short-haul domestic aviation, the IPCC report notes that there is a growing need for systemic infrastructure changes that enable behavioural modifications and reductions in demand for transport services that can in turn reduce energy demand.
17. The greatest potential to avoid emissions comes from reducing long-haul aviation and providing short-distance low-carbon urban infrastructures.
18. The response to the COVID-19 pandemic has demonstrated the scope of possible actions, with aviation emissions reducing 45% in 2020 compared to 2019.

Conclusion

19. In summary, all sectors of the economy have a crucial role to play in reducing emissions of greenhouse gases, and the aviation sector is no different. One of the key approaches is to reduce demand for aviation services, to avoid emissions being created.

20. In its planning processes, the Otago Regional Council needs to shape its ideas accordingly and look for ways to lock in emissions reductions, rather than perpetuating existing high-emissions activities.

James Arthur Renwick
November 2022