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## **Declaration of Dr Mark Diesendorf**

### **Re: Expert opinion on specific questions related to Clack et al. (2017) paper, [www.pnas.org/cgi/doi/10.1073/pnas.1610381114](http://www.pnas.org/cgi/doi/10.1073/pnas.1610381114)**

I am an Honorary Associate Professor at UNSW Sydney, formerly called the University of New South Wales. My PhD is in applied mathematics/theoretical physics. Previously, at various times before my nominal retirement in 2016, I was a Principal Research Scientist in Australia's national research organization, CSIRO; Professor of Environmental Science and Founding Director of the Institute for Sustainable Futures at University of Technology Sydney; Associate Professor and Deputy Director of the Institute of Environmental Studies at UNSW Sydney; and Education Program Leader of the Australian Cooperative Research Centre for Low Carbon Living. As an author or coauthor, I have published 79 peer-reviewed journal papers, three scholarly books, 38 scholarly book chapters and 13 peer-reviewed conference papers.

From 2011 to 2016 I was a senior researcher in a research program at UNSW Sydney that performed computer simulation modelling of the operation of the Australian National Electricity Market running entirely on renewable energy. I am co-author of several peer-reviewed journal papers on this particular topic. This research is similar to that conducted on the electricity systems of the United States of America by Dr Mark Jacobson. Therefore, I have expertise in the scientific issues discussed in Dr Jacobson's and Dr Clack's journal papers published in PNAS in 2015 and 2017 respectively. I have studied both papers.

On 4 August 2020, I wrote a Declaration concerning issues surrounding the Clack et al. paper in the context of the legal case between Dr Jacobson and Dr Clack. Since then, Dr Jacobson has asked me to provide my expert opinion on additional specific questions related to Dr Clack's paper and the actions of its authors. Below are the questions and my responses (in ***bold italic***), based on my expertise as a scientist and author in the same area of study as Dr Clack and Dr Jacobson.

1. Is omitting data or changing the definition of data to the wrong definition an "interpretation or judgment of data" or is it "not an interpretation/judgment of data but instead altering the factual definition of data" in the following four cases:

a) Changing the definition of values in a table from average to maximum values?

***This is not an interpretation/judgment of data but instead is altering the factual definition of data.***

b) Omitting the inclusion of Canadian hydropower from total hydropower production?

***This is not an interpretation/judgment of data but instead is altering the factual definition of data.***



c) Claiming authors made a “modeling error” after wrongly assuming that data values in a paper are maximum rather than average values?

***This is not an interpretation/judgment of data but instead is altering the factual definition of data.***

d) Claiming authors made a “modeling error” with respect to hydropower output after omitting the fact that computer model output both in the paper and externally available to all authors shows no mathematical computer modeling error?

***This is not an interpretation/judgment of data but instead is altering the factual definition of data.***

2. Is an author who makes a factual mistake in a review of other people's work following due diligence or acting in reckless disregard for the truth or in bad faith when he or she

a) Fails to request clarification from the authors before publication if he or she is uncertain about an issue in the paper?

***Acting in disregard for the truth and in bad faith***

b) Hides the publication from a student he or she mentored and is now criticizing, until after acceptance of the paper?

***Acting in bad faith***

c) Refuses to correct the factual mistake when informed about it, with evidence, before publication?

***Acting in reckless disregard for the truth and in bad faith***

d) Refuses to correct the factual mistake when informed about it, with evidence, after publication?

***Acting in reckless disregard for the truth and in bad faith***

3. Is it standard practice in the sciences for authors of a paper to issue a correction to the paper AFTER publication if a material FACTUAL error is discovered in their paper?

***Yes***

4. Is it unethical or ethical for authors of a paper to REFUSE to issue a correction to their paper AFTER publication if a material FACTUAL error is discovered in their paper and they are requested to make a correction?

***It is unethical.***

I declare under penalty of perjury that the foregoing is true and correct.

Executed on 18 September 2021.

Yours sincerely,

Mark Diesendorf PhD  
Honorary Associate Professor