

# REF

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## RENEWABLE ENERGY FOUNDATION

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Professor David Mackay  
Chief Scientific Advisor  
Department of Energy & Climate Change  
3 Whitehall Place  
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26 February 2013

Dear David:

Thank you for coming to our offices on Thursday last week to discuss the study by Professor Gordon Hughes of wind farm load factor and the way it declines over time.

At the beginning of the meeting you repeated your request, first made in an email to us on February 5th, that we retract the study. From the discussion which followed we understand that (a) you now accept that the model estimated by Professor Hughes can be "identified", so that (b) your request for retraction is based on the judgement that the results are somehow unreasonable and show a more rapid decline than your own analysis.

The common ground between us is that both your work and that produced by Professor Hughes find a significant decline in performance with age. The difference is that your approach rules out the possibility of improvements in the industry's productivity (technical progress), whereas Professor Hughes considers that this is a normal component of any study of comparative efficiency and performance. The effect of ruling out productivity improvement is to mask a part of the decline in performance due to age. We agree with Professor Hughes that the magnitude and impact of such technical progress is an empirical question that is and should be subject to statistical testing rather than ruled out in advance.

As I said at the end of the meeting, I heard nothing from you to make me feel that our study required any apology. Professor Hughes has employed advanced but standard methods and applied them with rigour. We all agree that this work is genuinely original, there being no similar material in the literature, or in levelised cost studies provided to DECC, and it is extremely relevant in modeling the costs of meeting the renewables targets, and to your own Pathways Calculator.

In view of this, we feel that we deserve to be thanked for advancing understanding in this field, and opening up this line of investigation, rather than presented with what we feel is an unjustified ultimatum.

Iain Staffel, whom you brought to the meeting, showed us the first drafts of his own work with Professor Green, which we think an interesting line of investigation that, though not strictly speaking econometric, as our study is, may shed further light on the question. We look forward to seeing the data that Iain promised to share with us, and to discussing it further, not least with you.

Finally, we appreciate that you support and share our aim of providing empirical data to inform discussion of renewables, and hope that you will now accept that Professor Hughes' paper is a useful contribution to that debate.

Yours sincerely,

A handwritten signature in black ink, reading "John Constable". The signature is written in a cursive style with a large, prominent initial "J".

John Constable.