

Sustainable Energy – without the hot air

David JC MacKay

The quest for safe, secure and sustainable energy poses one of the most critical challenges of our age. But how much energy do we need, and can we get it all from renewable sources? David MacKay sets out to find the answer through a forensic numerical analysis of what we use and what we can produce. His conclusions starkly reveal the difficult choices that must urgently be taken and readers interested in how we will power our society in the future will find this an illuminating read. For anyone with influence on energy policy, whether in government, business or a campaign group, this book should be compulsory reading. This is a technically precise and readable account of the challenges ahead. It will be a core reference on my shelf for many years to come.

Tony Juniper

Former Executive Director, Friends of the Earth

Engagingly written, packed with useful information, and refreshingly factual.

Peter Ainsworth MP

Shadow Secretary of State
for Environment, Food, and Rural Affairs

David MacKay sets out to dispel the half truths, distortions and nonsense which make up so much of what we're told about climate change and our energy needs. This book is readable, accessible and thorough. He cuts through unfounded opinion and takes us to facts and figures which speak for themselves. It's a useful guide for both layman and expert. I heartily recommend it.

Graham Stuart MP

This remarkable book from an expert in the energy field sets out, with enormous clarity and objectivity, the various alternative low-carbon pathways that are open to us. Policy makers, researchers, private sector decision makers, and NGOs, all will benefit from these words of wisdom.

Sir David King FRS

Chief Scientific Adviser
to the UK Government, 2000–08

This is a really valuable contribution to the continuing discussion of energy policy. The author uses a potent mixture of arithmetic and common sense to dispel some myths and slay some sacred cows. The book is an essential reference work for anyone with an interest in energy who really wants to understand the numbers.

Lord Oxburgh KBE FRS

Former Chairman, Royal Dutch Shell

So much uninformed rhetoric is thrown about on climate change and energy systems that there is an urgent need for an authoritative study setting out just what can and cannot realistically be done to achieve sustainable energy. This hugely important book fills that gap both technically and highly readably. It should be a 'must read' not only at home and in industry, but on each Government Minister's desk, and not just in the UK.

Michael Meacher MP

Former Environment Minister

David MacKay's book sets the standard for all future debate on energy policy and climate change. His dedication to the facts and to rational argument is admirable in a field beset by propaganda and wishful thinking on all sides.

David Howarth MP

Energy policy is crucial for the world, and a wide public should be engaged in debate and decisions on these issues. But such debate must be grounded in realistic numbers and good physics. All the key principles are clearly and accessibly explained in this book. David MacKay has performed a great service by writing it.

Prof Martin Rees FRS

President of the Royal Society

Fascinating, provocative, and realistic, this book lives up to its name and gives us the tools for straight thinking about climate change.

Sir John Sulston FRS

Nobel laureate; Chair, Institute of Science, Ethics and Innovation, University of Manchester

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David MacKay's book is an intellectually satisfying, refreshing contribution to really understanding the complex issues of energy supply and use. It debunks the emotional clap-trap which passes for energy policy and puts real numbers into the equations. It should be read by everyone, especially politicians.

Prof Ian Fells CBE
Founder chairman of NaREC,
the New and Renewable Energy Centre

Preventing climate chaos will require sophisticated and well informed social, economic and technological choices. Economic and social 'laws' are not immutable – politicians can and should reshape economics to deliver renewable energy and lead cultural change to save energy – but MacKay reminds us that even they "cannot change the laws of physics"! MacKay's book alone doesn't have all the answers, but it provides a solid foundation to help us make well-informed choices, as individuals and more importantly as societies.

Duncan McLaren
Chief Executive, Friends of the Earth Scotland

The need to reduce our dependence on fossil fuels and to find sustainable sources of energy is desperate. But much of the discussion has not been based on data on how energy is consumed and how it is produced. This book fills that need in an accessible form, and a copy should be in every household.

Prof Robert Hinde CBE FRS FBA
Executive Committee, Pugwash UK

This book is what has been needed for a long time. This is a book which tackles energy from first principles, which demystifies the overwhelming array of information that is published, and which does so accessibly. This should be the starting point for anyone trying to understand the issues surrounding sustainable energy.

Peter Guthrie OBE FRAE
Prof of Engineering for Sustainable Development
Trustee/Director of Engineers Without Borders

At last a book that comprehensively reveals the true facts about sustainable energy in a form that is both highly readable and entertaining. A "must read" for all those who have a part to play in addressing our climate crisis.

Robert Sansom
Director of Strategy and Sustainable Development
EDF Energy

So much has been written about meeting future energy needs that it hardly seems possible to add anything useful, but David MacKay has managed it. His new book is a delight to read and will appeal especially to practical people who want to understand what is important in energy and what is not. Like Lord Kelvin before him, Professor MacKay realises that in many fields, and certainly in energy, unless you can quantify something you can never properly understand it. As a result, his fascinating book is also a mine of quantitative information for those of us who sometimes talk to our friends about how we supply and use energy, now and in the future.

Dr Derek Pooley CBE
Former Chief Scientist at the Department of Energy,
Chief Executive of the UK Atomic Energy Authority
and Member of the European Union Advisory Group
on Energy

By focusing on the metrics of energy consumption and production, in addition to the aspiration we all share for viable renewable energy, David MacKay's book provides a welcome addition to the energy literature. "Sustainable Energy – without the hot air" is a vast undertaking that provides both a practical guide and a reference manual. Perhaps ironically for a book on sustainable energy, MacKay's account of the numbers illustrates just how challenging replacing fossil fuel will be, and why both energy conservation and new energy technology are necessary.

Darran Messem
Vice President Fuel Development
Royal Dutch Shell

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