

## Sustainable Energy Without the Hot Air

Written by Chris Cracknell  
Friday, 11 March 2011 11:28 -

---

This [book](#) is an analysis of the energy supply and demand of Great Britain. The author, Donald Mackay, is a Fellow of the Royal Society, i.e. a highly respected academic. In this book he does the sums... None are more complicated than school level, back of an envelope calculation, but his results are illuminating. Since reading this book, I have decided not to even try to debate this subject with anyone who has not either read the book or done the equivalent sums themselves.

Illuminating [examples](#) include the fact that an offshore windpark 30% bigger than the size of Wales would be needed to produce about 30% of the UK's energy needs from wind power. Not to mention the intermittency of wind... Another point that he makes repeatedly is that if every one does a little then we will still only add up to a small change. i.e. turning off those mobile phone chargers will not achieve much more than save your consciences...

Other projects include turning the whole of the North Sea and English channel into a tidal power basin. He makes the point that projects on this scale (i.e. what would be needed) are actually possible - they would just be hard work.

Another one that I liked was the scale of Hydroelectric pump storage schemes needed to even out irregular supply from renewable sources (sun, wind, tide). One of twelve necessary schemes might be filled by: "Scanning a map of Scotland, one candidate location would use Loch Sloy as its upper lake and Loch Lomond as its lower lake." and increasing the height of the Loch Sloy Dam by another 40 meters. And there would have to be another eleven such schemes at least as large!

The book can be downloaded, read online or bought in paper form.