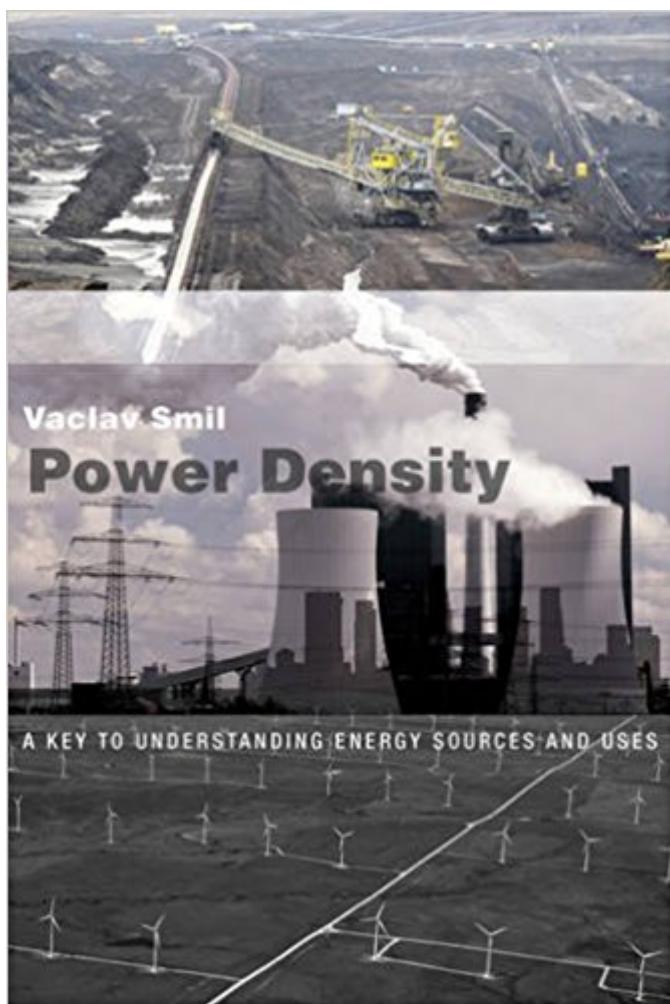


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Power Density: A Key To Understanding Energy Sources And Uses (MIT Press)



Synopsis

"There's no author whose books I look forward to more than Vaclav Smil." -- Bill GatesIn this book, Vaclav Smil argues that power density is a key determinant of the nature and dynamics of energy systems. Any understanding of complex energy systems must rely on quantitative measures of many fundamental variables. Power density -- the rate of energy flux per unit of area -- is an important but largely overlooked measure. Smil provides the first systematic, quantitative appraisal of power density, offering detailed reviews of the power densities of renewable energy flows, fossil fuels, thermal electricity generation, and all common energy uses.Smil shows that careful quantification, critical appraisals, and revealing comparisons of power densities make possible a deeper understanding of the ways we harness, convert, and use energies. Conscientious assessment of power densities, he argues, proves particularly revealing when contrasting the fossil fuel--based energy system with renewable energy conversions. Smil explains that modern civilization has evolved as a direct expression of the high power densities of fossil fuel extraction. He argues that our inevitable (and desirable) move to new energy arrangements involving conversions of lower-density renewable energy sources will require our society -- currently dominated by megacities and concentrated industrial production -- to undergo a profound spatial restructuring of its energy system.

Book Information

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Customer Reviews

Provocative, refreshingly quantitative, and mandatory reading for decision makers. (Donald R. Sadoway, John F. Elliott Professor of Materials Chemistry, MIT) Vaclav Smil highlights power density as an essential ingredient for evaluating energy systems that is often forgotten or neglected in making sound energy choices. Smil correctly points out with numerous examples the importance of power density in determining how energy recovery and utilization systems are designed and operated. (Jefferson Tester, Croll Professor of Sustainable Energy Systems and Cornell Energy Institute Director, Cornell University)

Vaclav Smil is a Distinguished Professor Emeritus at the University of Manitoba. He is the author of more than thirty books, including Harvesting the Biosphere: What We Have Taken from Nature and, most recently, Made in the USA: The Rise and Retreat of American Manufacturing, both published by the MIT Press. In 2010 he was named by Foreign Policy as one of the Top 100 Global Thinkers. In 2013 Bill Gates wrote on his website that "there is no author whose books I look forward to more than Vaclav Smil."

This is a very dense reading. Vaclav Smil covers the spatial dimension of all major energy sources. The comparison helps to understand the gigantic challenge to transition todays primarily fossil fuel-based energy systems to renewable energy systems. Any sceptics of the book should keep in mind that this topic is extremely complex and needs to be viewed from many dimensions. Openmindedness is key to learn most from it. This book is a must read for everyone interested in energy.

Smil's perspective is broad, balanced and clearly identifies its theoretical, qualitative, and quantitative assumptions. Though many may not want to accept the implications of his thesis, the book is an essential guidepost for development of comprehensive integrative ecological planning. The book should be read widely by any who seek a much needed reasoned center in our global climate change debates.

Read everything Vaclav Smil writes. He is always educational and thought provoking.

great perspective and great insights, down to earth study, too.

Just what needs to be emphasised in current energy debate

If you are interested in energy Vaclav Smil is the author to read.

great. my company need it , as described . I absolutely love this product! I purchased this product along with a cutting board for a fruit platter that I needed to make for a party this past weekend. This product worked perfectly. It cut right threw the hard watermelon rind also cut the pineapple so perfectly. I am very pleased with the purchase! If your thinking about ordering this product you won't be disappointed. Thank you to the seller for a nice an smooth purchase! good .

Undoubtedly the worst of the many books that I have read by Vaclav Smil. Most of his books are pleasant reads. They are dense with facts but still well written. This one however has a high MEGO quotient. It is about a way to measure energy that he hopes to get others to use. It is not so much about energy as the measurement of energy. It is filled with figures but it does not lead to conclusions that the intelligent layman is interested in. It is basically a aimed at other economists as a treatise on measurement.MEGO - My Eyes Glaze Over.

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