Our Renewable Future: Laying the Path for One Hundred Percent Clean Energy

Richard Heinberg, David Fridley
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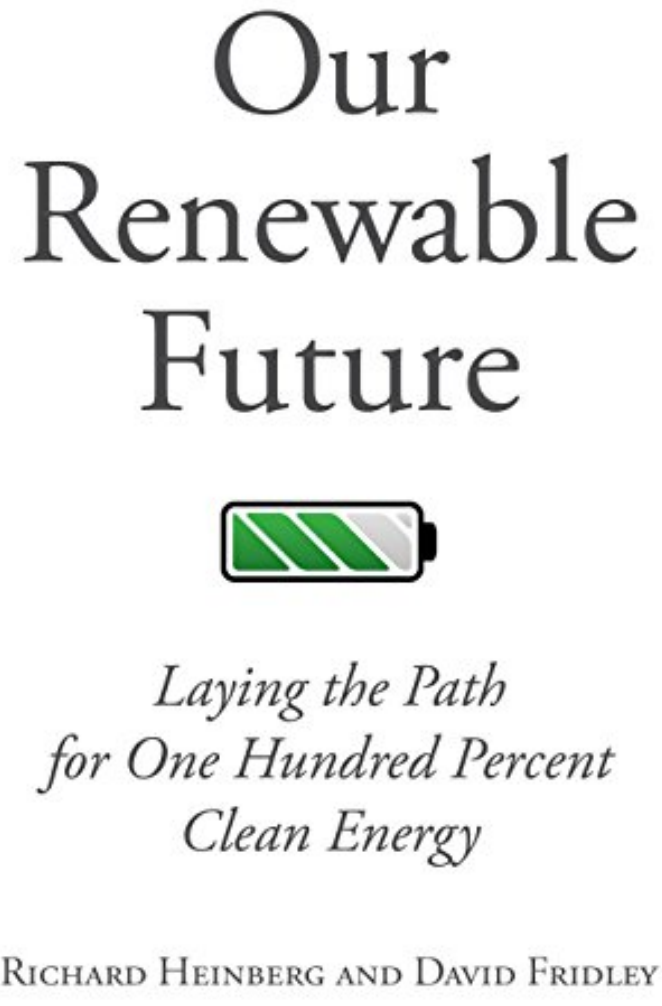

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Richard Heinberg, David Fridley : Our Renewable Future: Laying the Path for One Hundred Percent Clean Energy before purchasing it in order to gage whether or not it would be worth my time, and all praised Our Renewable Future: Laying the Path for One Hundred Percent Clean Energy:

10 of 10 people found the following review helpful. Wind, solar etc are all good and necessary, but...we need to learn to live with less energyBy K. F. LauxA very carefully researched examination of what a complete transformation to renewable energy is likely to entail. The authors caution that we will need to emphasize energy efficiency and learn to

do with less, and that we will need to avoid a number of potential pitfalls on the way to a 100% sustainable society.The book begins by walking the reader through the basics of energy and power, and explains such concepts as EROEI and embodied energy, before turning to the different characteristics of various energy sources and such problems with renewable energy as intermittency and the need for storage, demand management, capacity redundancy and the like.Yes, it is somewhat technical, but not overwhelmingly so, and the authors persuasively argue what some other writers such as Ozzie Zehner have been saying: we will not simply be able to swap out fossil fuels for wind and solar power. In particular, we are going to have to learn to live with substantially less energy; we are going to have to remake not only our systems for producing energy, but also for using it--in agriculture, transportation, industry, ...everything.Along the way, the authors discuss issues that I have not seen mentioned much in the literature, but that are obviously important. Such as the need, ultimately, to manufacture sustainable energy equipment (wind turbines, solar cells, etc.) using only sustainable energy--electricity--and what this is likely to entail. The fact that our road infrastructure itself is very heavily dependent on fossil fuels, and for this and other reasons, electric cars may be a red herring where sustainability is concerned.They are careful in stating their conclusions, but these conclusions are supported by meticulously developed and footnoted arguments. And their conclusions are riveting: if we put off the transition to renewable energy, "we eventually end up with catastrophic climate change and NO viable energy system."I think this is may be the most important book on climate change and energy issues to appear this year. Very highly recommended.7 of 7 people found the following review helpful. This is the best book yet from Richard HeinbergBy Loren F. StokesThis is, by far, the best book yet from Richard Heinberg. It is also the most technical in content, consistent with his co-authorrsquo;s background. But please donrsquo;t let that deter you from reading this book. It is quite up to date with many references from 2015.The first two parts of this book, understanding energy and our current energy use, followed by renewable energy in a largely fossil fuel-free world, is a much more detailed report than attempted in a short book I wrote in 2014. For example, a rapid scale up of wind turbines and solar panels for renewable electricity would actually increase fossil fuel use, as materials used in wind and solar manufacturing rely on fossil fuels with no near-term alternatives.The third part of this book is extremely important and often overlooked: preparing for a renewable energy future. The world will likely need to use less energy per capita going forward. This has profound implications for capitalism in the western world. Economic growth is not sustainable. The connection between a high level of energy use and wealth will have to change. This is inevitable with a finite supply of remaining fossil fuels. This transition will happen even if we donrsquo;t embrace it, so planning for it is of paramount importance.1 of 1 people found the following review helpful. A uniquely important, sober analysis of the energy transitionBy AutonomeusThis book is unique. Richard Heinberg is a well-known advocate of a lower energy future beyond fossil fuels. Here he teams with David Fridley, a scientist with the Energy Analysis Program of the Lawrence Livermore National Laboratory. Both are associated with the Post Carbon Institute."Our Renewable Future" is not one of the many books simply advocating for clean/renewable energy. Nor is it one of the many books simply presenting the technical possibilities of various sorts of energy. Rather it is a sober analysis of the possibility of a transition to 100% clean/renewable energy, based on the assumption of the necessity of such a transition.The book begins with some basic physics, and an overview of our current energy sources and uses. The first topic is renewable electricity. The challenges of intermittency and storage are taken seriously. Next comes transportation, and the challenge of substituting electricity for fossil fuels. The authors do not shy away from concluding that mobility will be reduced in the clean/renewable energy future.The most difficult challenge of substitution will be for industrial processes requiring high heat. This is a topic rarely addressed, and the authors do not provide any easy answers.The major point we are left with after this expert, realistic assessment is that we are going to have to reduce energy use. It will not be possible to simply substitute solar and wind energy for burning fossil fuels and go on with the same sort of society. What many people don't seem to realize is that *this is not a choice.* If we do not intelligently construct the energy transition, we will run up against catastrophic climate change as well as the limits to resources of all sorts, and global human society will be reduced to a lower level of energy use *involuntarily,* with much pain and suffering as well as destruction of the planetary ecosystem."Our Renewable Energy" is highly recommended for all those who want or need to stay informed on the issue at a level not requiring mathematics or engineering expertise. Heinberg and Fridley offer us state-of-the-art guidance as of 2017 for a rapid energy transition. What are we waiting for?

One ofnbsp;GreenBiz'snbsp;Six Best Sustainability Books of 2016nbsp;The next few decades will see a profound energy transformation throughout the world. By the end of the century (and perhaps sooner), we will shift from fossil fuel dependence to rely primarily on renewable sources like solar, wind, biomass, and geothermal power. Driven by the need to avert catastrophic climate change and by the depletion of easily accessible oil, coal, and natural gas, this transformation will entail a major shift in how we live. What might a 100% renewable future look like? Which technologies will play a crucial role in our energy future? What challenges will we face in this transition? And how can we make sure our new system is just and equitable?In Our Renewable Future, energy expert Richard Heinberg and scientist David Fridley explore the challenges and opportunities presented by the shift to renewable energy. Beginning with a comprehensive overview of our current energy system, the authors survey issues of energy supply and demand

in key sectors of the economy, including electricity generation, transportation, buildings, and manufacturing. In their detailed review of each sector, the authors examine the most crucial challenges we face, from intermittency in fuel sources to energy storage and grid redesign. The book concludes with a discussion of energy and equity and a summary of key lessons and steps forward at the individual, community, and national level.The transition to clean energy will not be a simple matter of replacing coal with wind power or oil with solar; it will require us to adapt our energy usage as dramatically as we adapt our energy sources. Our Renewable Future is a clear-eyed and urgent guide to this transformation that will be a crucial resource for policymakers and energy activists.

"The future of renewable energy is obscured by ignorance, noise, ideology, and all sorts of misconceptions mdash;from both cornucopians and catastrophists. Our Renewable Future describes the reality: the transition is possible, but it wonrsquo;t be easy."