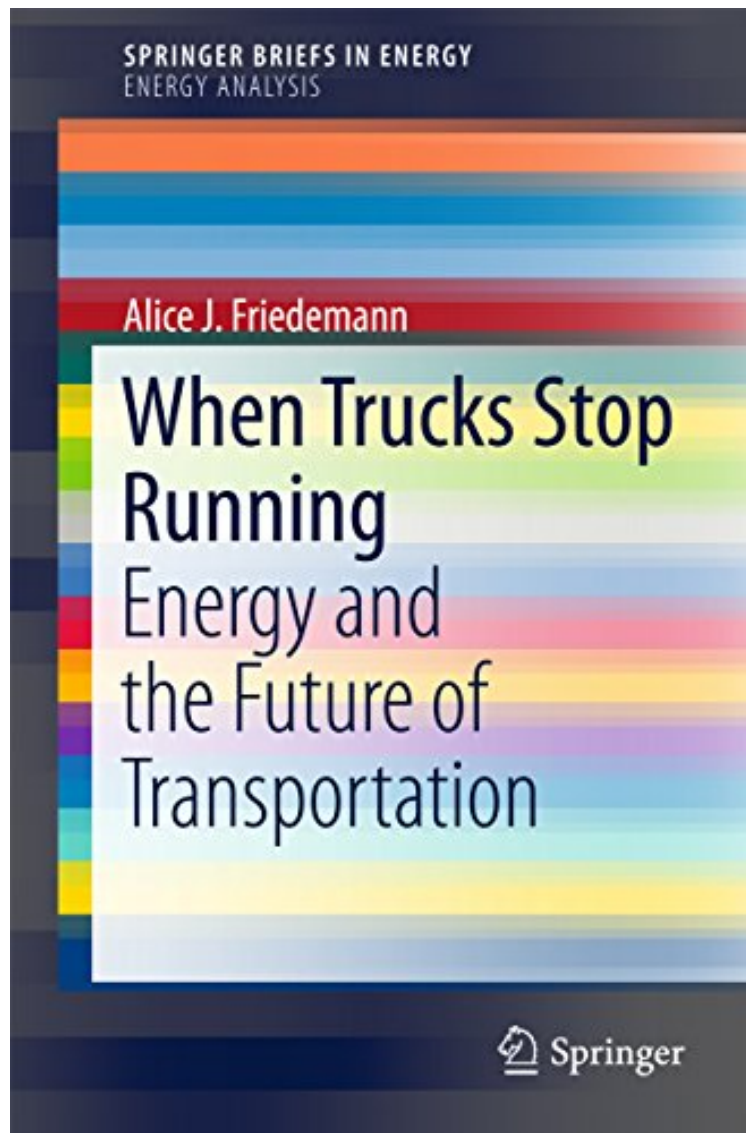


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When Trucks Stop Running: Energy and the Future of Transportation (SpringerBriefs in Energy)

A.J. Friedemann

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A.J. Friedemann : When Trucks Stop Running: Energy and the Future of Transportation (SpringerBriefs in Energy) before purchasing it in order to gage whether or not it would be worth my time, and all praised When Trucks Stop Running: Energy and the Future of Transportation (SpringerBriefs in Energy):

10 of 11 people found the following review helpful. Energy Book of the YearBy Hugh OwensIf you read just one

book this year, *When the Trucks stop running* by Alice Friedeman should be that book. This book's primary focus is the overweening importance of transportation energy which is 95% petroleum based to the country that uses the most oil and is the most dependent upon that oil. Her first chapter is entitled "When the trucks stop running, America stops" and she lays out a scenario in a 7 day period exactly what it would be like in the US on each of those seven days if the trucks stopped. Friedeman states in exceedingly clear and graphic detail the danger of the United States' over reliance on a finite resource, petroleum being the *raison d'etre* of our industrial civilization. Her conclusion is that we are at or near peak oil which is the point where 50% of the world's oil has been extracted and where supplies have entered terminal decline. She points out correctly that it doesn't mean we are running out of oil because the world will never run out of oil. For example in 2030 we will have as much available oil as we had in 1980 but it does mean that what oil we have left should be used in the most efficient manner possible and not wasted. We should use the time and the oil we have left to prepare for a energy constrained future when we might obtain the energy to drive our industrial civilization on other sources which of course would include renewable sources of energy. She states in exquisite detail with a well annotated source list exactly how and where we use energy and how much work is done by the end user. She states that trucks and trains and ships use the least amount of petroleum to do the most amount of work. For example she lists the amount of freight moved per ton mile and reveals some astounding facts. Take FedEx or UPS air freight. They use 600 times the energy to move a ton of freight as a ship and vastly more energy than their own trucks. Rail is 2-6 times more efficient than trucks. Helicopters use 1000 times the energy of that container ship. 66% of our transportation fuel is used by cars, light trucks and SUVs generating huge emissions and inefficiencies along 4 million miles of US roads and along the 47000 mile Interstate Highway network. She points out that even though we have been using oil in this country since 1859 and have burned though half of the world's oil, the other half is still there to be extracted. Right? Well not exactly. It turns out that we have extracted the easy to get half, the cheap oil, and now what is left is the expensive to extract hard to get oil, the oil in deep water, the arctic, and from rock of low porosity. Many of the dominant oil exporters are politically unstable countries who cannot be relied upon. So Alice looks at alternative sources of oil energy. She examines in exquisite detail what these alternative energy sources could offer, what drawbacks exist to their adoption and whether they can be a replacement for cheap oil. She looks at various drop in fuels such as making transportation fuels from coal, from Natural gas, from biofuels as well as from unlikely sources such as algae and hydrogen fuel cells. She examines in great detail how electricity might be a source of transportation energy and whether we could switch from fossil fuels generating 75% of our electrical energy to renewable sources such as wind, solar, tides, and geothermal among others. She spends a large section of the book laying out the anatomy and physiology of the US electrical grid and what the consequences of adding wind and solar input to the grid and how the grid might be balanced with these diurnal and seasonal inputs. In order to utilize these new sources a reliable way to store the energy to balance out the peaks and valleys of electrical demand would have to be found and she explores again in great detail what that technology is and might be available in the future including pumped hydro as is used in Denmark, compressed air, utility scale batteries among other storage options. If oil declines before natural gas could the country move to natural gas as a "bridge" to the future not only generate the electricity but to move freight and to continue to provide the feedstock for plastics, petrochemicals and fertilizer production? The strength of Friedeman's writing is her clarity, her parsimonious use of words and at times her humor and wit which shines through her arguments. I found it amazing that she could cover such a complex subject in such detail in just 131 pages. She draws most of her facts from official sources such as the IEA, EIA, and IPCC and government testimony before the House and Senate. Her detailed bibliography and annotation is stunning and she is to be commended for this magnificent work. As an amateur energy analyst I have a few criticisms of her effort. My strongest criticism is that this work is not likely to ever see the light of day and achieve the widespread dissemination it deserves. It was published as one of the many dozens of pamphlets issued by a remarkable academic publisher called The Springer Briefs in Energy started by the eminent academic Charles Hall. Her book is a paperback book of 131 pages and costs a mind boggling \$54.99 from . I have yet to see a review of this book anywhere. This book should have been published by a respected environmental house such as New Society Publishers or even by some of the big US publishers like Doubleday, Scribners or Penguin. I think it would have been better to be issued as a self Published work. Unfortunately it is likely to be a gem buried forever unless someone can dig it up and give it the attention it deserves. My other criticism is that Alice Friedeman does not explain the relation of energy to our Industrial Civilization and to the world of economics and how energy is the lodestone of societal wealth and standard of living in the world. And why cheap fossil energy is responsible at least in part for the enormous explosion of new technology, inventions and innovations and wealth but also of pollution, global climate change and an unsustainable population explosion which has likely exceeded the carrying capacity of the planet. Readers who would like to read more from this remarkable woman are urged to go to her excellent blog: energysceptic.com. *When Trucks Stop Running: Energy and the Future of Transportation* (SpringerBriefs in Energy) 5 of 5 people found the following review helpful. it is an excellent read, providing informative analyses and projections concerning the ...By MRG Regarding the price of the book and the earlier negative review, yes the publisher is gouging a bit. Nonetheless, it is an excellent read, providing informative analyses and projections concerning the future of a seemingly narrow cross section of the

energy economy: transportation, specifically freight, and, in particular, trucking. The author compellingly demonstrates that much of what we take for granted, from essentials such as clean water and medical supplies, to frivolities such as speedy delivery of online purchases, depends on freight trucking. Cessation of freight trucking, even for a few days, would cause enormous disruption. This leads to a discussion of what has made all this freight shipping possible: petroleum. The author convincingly argues that, while renewable energy might pick up the slack for fixed applications such as lighting and heating of buildings, the high energy density and portability requirements of fuels for freight shipping at present exclude all alternatives to petroleum. If you're a skeptic or outright disbeliever of cautionary outlooks on energy policy, then this book is unlikely to change your mind. If, on the other hand, you are concerned with the looming changes to our energy landscape, then the specific but crucially important topic examined in this book is well worth your time.

4 of 4 people found the following review helpful. I enjoyed the book because of its scientific approach and the ...

By Keith Renick
This author covers the most important issues in regards to Oil, energy and our transportation systems here in the USA. I enjoyed the book because of its scientific approach and the authors math and measurement abilities. I am glad she left politics out. The author understands that math doesn't lie. I do not agree with her climate change topic but that is another issue. More important, my best estimates find that legal and illegal immigration will add another 100 to 115 million people to the population of the USA by the year 2044. I believe the per capita availability of net energy will decline in the USA. We have entered a period of declining EROEI that can't be reversed. Overall "When Trucks Stop Running" is an excellent book. Keith Renick, Retired, Saudi Aramco Oil

In lively and engaging language, this book describes our dependence on freight transport and its vulnerability to diminishing supplies and high prices of oil. Ships, trucks, and trains are the backbone of civilization, hauling the goods that fulfill our every need and desire. Their powerful, highly-efficient diesel combustion engines are exquisitely fine-tuned to burn petroleum-based diesel fuel. These engines and the fuels that fire them have been among the most transformative yet disruptive technologies on the planet. Although this transportation revolution has allowed many of us to fill our homes with global goods even a past emperor would envy, our era of abundance, and the freight transport system in particular, is predicated on the affordability and high energy density of a single fuel, oil. This book explores alternatives to this finite resource including other liquid fuels, truck and locomotive batteries and utility-scale energy storage technology, and various forms of renewable electricity to support electrified transport. Transportation also must adapt to other challenges: Threats from climate change, financial busts, supply-chain failure, and transportation infrastructure decay. Robert Hirsch, who wrote the "Peaking of World Oil Production" report for the U.S. Department of Energy in 2005, said that planning for peak world production must start at least 10, if not 20 years ahead of time. What little planning exists focuses mainly on how to accommodate 30 percent more economic growth while averting climate change, ignoring the possibility that we are at, or near, the end of growth. Taken for granted, the modern transportation system will not endure forever. The time is now to take a realistic and critical look at the choices ahead, and how the future of transportation may unfold.

About the Author
A.J. Friedemann is the creator of <http://energyskeptic.com/>. Ms. Friedemann is perhaps best known for "Peak Soil", which David Pimentel at Cornell, Tad Patzek at U.C. Berkeley, and Walter Youngquist (author of "Geodesinies") edited.