

BOOK REVIEW – JANUARY 2009

**A Review of "HOT, FLAT AND CROWDED" by Thomas L Friedman,
Allen Lane (Penguin Books), London, UK, 2008 ISBN 978-1-86414-129-4 pp 438**

The Swirling Debate Over Climate Change

Seventeen years after the birth of the UN Framework Convention on Climate Change at the 1992 Rio Earth Summit, the threat of dangerous climate change is a topic around which international and domestic debate continues to swirl. Policymakers everywhere are struggling to come up with regulatory solutions to the problem; countries remain deeply divided over what sacrifices they need to make; investors lack reliable guidance, both as to how they can manage climate risks and as to what climate-related solutions they can invest in; and communities everywhere remain confused about what steps need to be taken.

Somewhat belatedly, some might think, The New York Times foreign affairs columnist and three-time Pulitzer Prize-winner Thomas Friedman has weighed into this swirling and confused debate with a bold and provocative book. Friedman sees the world entering a new era, the Energy-Climate Era, and he singles out the energy industry as being both at the heart of the problem and at the heart of the solution. Fair enough too.

A Central Place for the Preservation of Biodiversity

Friedman's sincerity is not in doubt. He is an avowed supporter of conservation. In considering how to respond to the challenge of climate change, he makes a compelling case that central place be afforded to the preservation of biodiversity, which he defines as "the sum total of life on Earth". His advocacy for the work of the US non-profit organization Conservation International is powerful and of great merit.

A Call for US Leadership

This book is principally a call for the United States to reclaim world leadership by leading the international race to develop clean energy systems. This is indeed a noble and patriotic cause for Americans. However, one senses that the author might have allowed himself to become a little side-tracked by a heart-on-the-sleeve concern over America's massive transfer of wealth to what he calls "Petrodictators" from Russia and the Middle East.

The author has drawn attention to the major strategic issues that affect America and other major energy-consuming countries in this climate-concerned and climate-confused age. However, beyond very strongly pushing the case for renewable energy or what he calls "green electrons", he does not delve too far into specific solutions, how they might interrelate or, crucially, what they might cost.

The Vital Importance of Innovation But How Can It Be Mobilised?

Friedman is nonetheless right on the button in forcefully emphasising the vital importance of technological innovation:

"If you take only one thing away from this book, please take this: We are not going to regulate ourselves out of the problems of the Energy-Climate Era. We can only innovate our way out, and the only way to do that is to mobilize the most effective and prolific system for transformational information and commercialisation of new products ever created on the face of the earth – the US marketplace."

Innovation looks indeed to be the vital avenue by which climate change will be successfully addressed but Friedman begs the question with this emphatic proposition.

Friedman cautions that his faith in the US marketplace is subject to the proviso that policymakers and regulators must provide the right price signals. He calls for a coordinated set of US policies, tax incentives and disincentives (possibly including a carbon tax or a cap-and-trade system) as well as regulations to stimulate the marketplace and provide the price signals.

This is where the reader will find that very few dots are connected. There is little doubt that tax incentives are the key to facilitation of innovation but the broader implications of regulatory intervention in the market are not addressed. The reader is left hanging about issues of cost, equity, efficiency, practicality, time scales and causal effects.

In particular, the correlation between price signals in a legislatively-contrived carbon market and the pace of innovation in energy technologies is not explained. Nor is any mention made of the conclusion of the UK's Stern Report that a carbon market will not be enough by itself to stimulate innovation.

The Deficiencies of a Journalistic Approach

Friedman's style of writing is that of the professional journalist: researching a story, seeking out and interviewing people who have something to say about it and assembling a melange of his and their conclusions. Journalists often refer to their style of writing as an "inverted pyramid" and this book certainly includes lots of inverted pyramids. The approach is fine for newspaper columns, features and opinion pieces but it does not work particularly well in a book with the serious aim of addressing "why the world needs a green revolution – and how we [in the United States of America] can renew our global future."

The deficiency of this approach is that it is flukey.

Friedman is also quite naïve about the energy industry; he fails to pick up many relevant angles and points of view that do not come from his immediate network of contacts. For instance, although he refers to the UN Framework Convention on Climate Change and some of the work of the International Energy Agency, there is no reference to the progress of the IEA's scenario work on new energy technologies (on either the supply or demand sides of energy markets), there is no reference to the conclusions of the UK's Stern Report or of Australia's Garnaut Review, there is no acknowledgment of the progress of the projects of the Asia-Pacific Partnership on Clean Development and Climate, there is no mention of the World Energy Council's 2007 Report on Energy and Climate Policy and there is no mention of the work of the US Electric Power Research Institute. These are major omissions.

Picking the Winning Technologies

Throughout the book, Friedman comes back time and again to push for America to make massive investments in renewable energy technologies as the key energy technologies of the future. The aspiration is laudable. He also acknowledges the value of nuclear power, subject to the safety concerns that accompany it.

Friedman particularly pushes for America to become the first country to develop a "smart grid" to carry "green electrons" across the country to power factories, homes and automobiles. He already drives a hybrid automobile himself and looks forward to the time when he can plug his electrically-powered car of the future into the

overnight charger in his home garage, energised by green electrons.

Friedman is not sure how the massive additional volume of electrons required by the smart grid will be generated so long as they do not involve fossil fuels. He might usefully have looked at the extensive work of the US National Energy Technology Laboratory and the US Electric Power Research Institute on this topic, which is well up with the sources quoted in his book.

Of course, no technology can be a winner if it is not economically feasible. Throughout the book, readers are left up in the air about costs.

LNG: Friedman's Inexcusable Omission

Friedman completely fails to appreciate, (assuming he is aware of it) that the oil and gas industry came up over 30 years ago with a huge technological breakthrough, now developed to the stage where it offers enormous potential gains in global emissions reduction. The oil and gas industry is now endeavouring to implement these potential gains without the need for further R and D, without government subsidies and without carbon price signals. But liquefied natural gas or LNG does not rank a single mention in Friedman's 438 page manifesto. This omission is inexcusable in a serious book on energy and climate change.

Displacement of Coal by Natural Gas Would Halve the Greenhouse Gas Emissions from Electricity Generation

Friedman seems to have assumed that all fossil fuels are the same, which they most certainly are not. Certainly, he fails to appreciate that, if natural gas were to displace coal as a fuel for base load electricity generation, greenhouse gases from electricity generation would, almost overnight, be cut in half.

LNG also offers international trade advantages. Although the production of LNG itself generates certain emissions, a recent independent study in Australia indicates that the emission of one tonne of greenhouse gases from LNG production in Australia would save 9.5 tonnes globally if LNG were to displace coal for power generation in China.

Not all countries have surplus indigenous reserves of natural gas. However, the greater deployment of LNG technology to spread this key source of primary energy around could make early inroads into the global climate change problem. LNG technology enables natural gas to be condensed by refrigerating it to a liquid state that is 1/600th of its gaseous volume. This enables natural gas to be transported to energy-hungry countries by special LNG tankers emanating from places such as Australia, Indonesia, Malaysia and the Russian Far East, as well as

from the Middle East and Africa. This is why LNG has recently been seized on as an important alternative fuel source by China, India and Europe.

Apart from the greenhouse emissions value of natural gas, LNG also offers a major energy security advantage to any country that wishes to reduce its dependence on “Petrodictators”. LNG has for many years been a key plank in Japan's energy security policy. LNG can also be a more versatile and reliable source of supply of natural gas than supply by pipelines, as exemplified by the stranglehold that transit countries such as the Ukraine hold over pipeline traffic from Russia to Europe.

Although the US has itself installed several LNG import terminals on the Atlantic Coast and in the Gulf, there are none so far on the US West Coast.

Yet Friedman blithely refers to all fossil fuels as “fuels of the devil”. The fundamental reality is that solar and wind cannot operate alone as consumers need power when the sun isn't shining and the wind isn't blowing.

The smartest grid of all will be one that keeps all of its energy supply options open, especially the supply of natural gas. Both commercial and domestic consumers of electric power must have the convenience of supply on demand, otherwise there is little point in having a grid at all.

Keeping an Open Mind

Friedman recently invited readers to send in their own views to help him write an additional chapter in an expanded edition. Keeping an open mind about the solutions is essential. After all, the challenge posed by climate change is unprecedented and its potential global and domestic ramifications are not yet well or widely understood. As well, there are wide areas and degrees of disagreement about most of the issues involved. This is largely because there are so many angles to the subject: scientific, environmental, economic, political, social, ethical, moral and legal.

Although there are many aspects of the causes of climate change where there is potential for consensus, the solutions have much less potential, particularly when it comes to the costs of projects and how, when and by whom they will be implemented.

The Most Difficult Climate Change Question of All

Regrettably, as Friedman acknowledges, there is no real agreement on the most difficult climate change question of all: why should any country or community make significant sacrifice if others don't do likewise?

There is a compelling moral argument for early climate action by countries and communities that can best afford it. However, the degree of concern in mature economies over the high levels of unabated emissions in growing economies is effectively stalling timely mitigation measures in the former. As Friedman acknowledges very early in the piece, there is no great gain by America cutting back on energy usage if its energy savings are simply “gobbled up” elsewhere in the world.

Friedman shrugs off this concern and incites America to ignore what anyone else is doing, or failing to do, and get on with its own green revolution.

The Need for Global Consensus

Friedman has written a provocative book on climate change and what America should do about it. He has provided a valuable reminder of the central importance of biodiversity; he has reminded us of the key place of the energy industry; he has forcefully emphasised the vital importance of innovation in bringing forward technological responses; and he has made a patriotic call for US leadership in the green revolution.

For all that, the book remains fluke. Friedman succeeds in raising as many questions about his solutions as he does answers, and there are some important omissions.

The climate debate will continue to swirl and many who read this book will be as confused as ever. This underscores the fact that, with a truly global and unprecedented challenge, such as how to control the climate, we are dealing with great uncertainties. In addressing these uncertainties and approaching the universally-shared goal of sustainable development, the priority need is to build global consensus rather than going it alone and pushing barrows.

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Energy companies need to urgently examine the risks that climate change policy will have on their future viability. Should you wish to know more about climate change and the impact on the global energy industry and the outlook for your particular company, please contact the author Robert Pritchard on +612 9252 8900.