

The 21st Century Energy Initiative

Book Excerpt: Available at www.energy2025.com

The Future

There are two areas when thinking about the future: [1] Very long-term energy scenarios (no matter what we do) and [2] the decisions we make and actions we take.

Long-term energy scenario

There are far too many energy scenarios to explore, so this book only looks at the one, most probable scenario. *That is, what will the future of powering our society look like?* Clearly, no one has the answer, but if one thinks about what the future may hold, society may well advance beyond ever worrying about energy again. With the principles, decisions and actions laid out in the book, I see a future where a single solution powers both our transportation needs and “grid” needs (homes, building, industry, etc.)

I see a solution where our vehicles *are* our energy sources: powering themselves as well as satisfying grid energy needs. These will likely be fuel-cell vehicles. Probably Hydrogen. However, this scenario is not likely in the short term, due to the purity of Hydrogen required and therefore the costs of distributing it nationwide. As a result, this solution may well be 60 to 100 years away.

What will be the solution before that? Most likely, electric vehicles. Energy-shifting from oil to electricity is – as this book has identified – a grand challenge. A huge undertaking that will require nothing short of a concerted national effort by (federal and state) Governments and businesses – *working together!* As partners instead of adversaries.

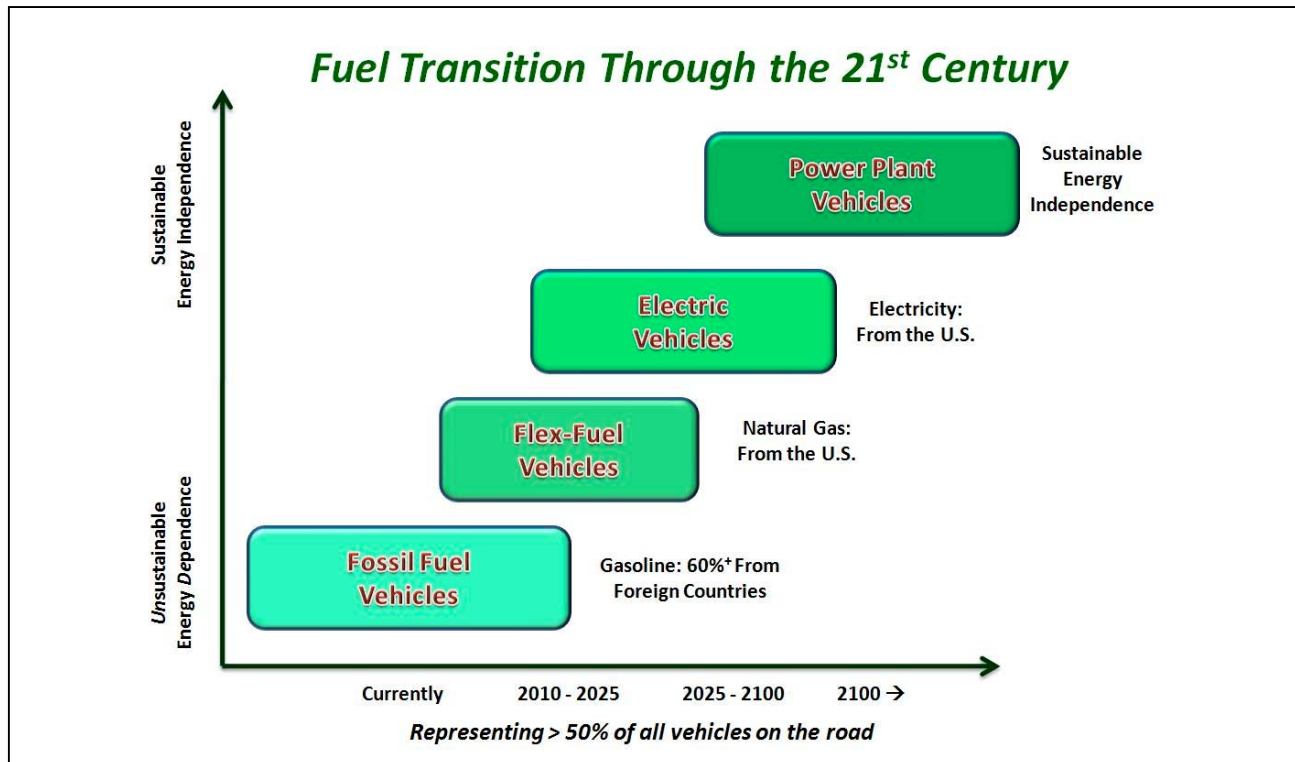
With “Peak Oil”, increasing demand from developing countries, solving the real problem should be our focus: Not punishing oil producers or traders. This is like polishing the handrails on the Titanic as it slips away.

Before electric vehicles may be flex-fuel cars. This is great for making a serious dent in oil imports, but shifting to natural gas is not a long-term solution. It still requires “burning stuff” and natural gas is not unlimited. Americans for American Energy boasts that there is enough natural gas to power 60 million homes for 120 years. This decreases dramatically if we are burning it for transportation fuel. Coupled with the fact that there are twice that many homes, plus significantly higher energy needs of commercial buildings, the 120 years decreases to a point where this is not a single long-term solution at all. It is a short term solution, though – and should be treated as such.

Before flex-fuel cars is what we have today: Mainly burning (mostly foreign) oil.

The different phases of the future of energy can be thought of in the graphic, below.

A 21st Century solution needs to take the long-term view into account, to ensure that the decisions we make now support a future where energy is no longer an issue.



Decisions & Actions

By looking in the past, and with a glimpse into human behavior, we might be able to paint different pictures of the future. Each potential future as determined by choices we... and others make.

The Positive Future

Imagine the Presidential Speech provided in a previous chapter represents real actions of hard-working men and women. And that

these actions take hold, and enable the United States to become a net-exporter of renewable energy and renewable energy technologies. What would be the situation, then?

- Complete energy independence.
- The United States is a net-exporter of renewable and sustainable energy.
- The dollar strengthens.
- High-wage job creation: through business innovation.
- More tax revenues as a result of higher wages.

- The price of gasoline is driven to a dollar or two per gallon.
- The U.S. regains its long-held global leadership: through economic strength.
- National debt is paid down, budgets are balanced.
- Lower interest & tax *rates*.
- Growing / thriving economy.
- Ability to pay for social security & other social programs.
- No wars instigated by us, due to our need for natural energy resources.

This could happen: If we followed this path:

[1] Recognize the *real* problems: Or no progress will be made. Until we recognize where the real root-causes are, Americans will continue to be polarized into two camps, and therefore be paralyzed - in finding solutions. Until the problems are clearly defined, accepted and embraced by both parties - and that bipartisan solutions are required, no solutions will be developed.

[2] Make a decision: Is the status quo acceptable? If no decision is made to solve our energy problems, we are destined for an even worse situation of rising oil prices, international terrorism, anti-Americanism, inflation (and worse: stagflation), negative environmental impacts, and business decline (due to increasing costs).

[3] Take personal responsibility: In order to get ourselves out of this mess, we need to do the hard work: we need to understand that *innovation* in alternative fuel is sorely needed, and we need to pay the price now - for cleaner and even more cost-effective fuel, later.

[4] Become a “net-exporter” of clean, renewable energy: Great fortunes are being and will continue to be exchanged between countries. Currently, the United States is maintaining its lifestyle as a net-importer of most commodities, finished products, and mostly - energy (oil). Our nation will continue to decline until and unless we can put our country back on the path to becoming a net-exporter.

[5] Administration Leadership: Through policies that *create an environment where business can successfully help us out of this situation*, the administration must lead our nation to energy independence. For the sake of future generations, now is the time for our administration to take bold, non-partisan action!

[6] Strategic Energy Plan: Develop and fund an energy-independence policy: that which is outlined in this book.

[7] Tackle “25% issues: Energy efficiency, energy storage and distributed energy solutions need to be addressed. Should we, as a nation, decide to become a net-exporter of clean, renewable energy, there will undoubtedly be 15 to 25 years of “transition turmoil.” During this transition, we must do more to reduce our reliance on energy, as well as become more resilient to terrorists’ attacks. These two areas have the added benefits of [1] reducing costs (through efficiency / storage for level-loading), as well as [2] developing an impervious energy “channel” (through distributed generation solutions). Saving energy, where practical, is needed to help us through the transition period.

[8] Build awareness: The American people need to be educated about the true

costs of our addiction to cheap oil. Fear of change is the biggest issue to changing our ways. We misunderstand fundamental supply and demand relationships. Depending on whether we are left, or right-leaning, we like to blame someone else for our problems. The more educated we are on a problem, the more we can accept a solution.

[9] Support a multi-party system: The two party system, developed and supported by Americans, is crippling our ability to solve ever-increasingly complex problems.

A more in-depth description for these recommendations can be found here: www.energy2025.com/H2_Research.pdf.

A Negative Future

What if we are unable to recognize the *real* problems / root-causes, make the right decisions, take responsibility, and have no true leadership, with no strategic energy initiative? What would we have and what would the future hold?

Unfortunately, this perfectly describes the current situation. I fear this means the following may happen:

[1] Due to high oil prices, economic output declines. Countries go into recession. Mortgage / banking crises will decrease inflation pressures. As a result...

[2] Oil prices may drop. Without an energy strategy, we will not focus on making the tough decisions to move toward an energy-independent future. Especially when there is no ("current" economic need to solve this "non"

problem). This would be the exact same (lack of) decisions we made after oil prices dropped in the mid-1980s. As a result...

[3] We will continue without energy-strategy leadership, we will *not* recognize the real root-causes, nor will we make the best long-term decisions. We will not take personal, nor organizational responsibility. As a result...

[4] Current efforts to develop renewable energy will decrease, and we - as a country - will go back to sleep, with regard to solving this problem.

At this point, two alternate scenarios will take place. Either declining economies will morph into depression or the normal business cycle will pick up the world economy once again.

Scenario one: If the world goes into depression, the need for oil will likely bring the price down under \$50 a barrel, and perhaps as low as it was for a while: less than \$20 per barrel. If it happens, the "peak oil" phenomenon would probably be delayed 10 or 20 years. (But it is still a known future-reality.) This is an extreme situation, with a low probability, but it is still possible.

Scenario two: More likely, the U.S. Government will intervene in the economy - not with long-term business / innovation support, but through more bail-outs and anti-capitalist policies and regulations, creating inflationary pressures. As a result...

Economic activity will pick up (as it always does). This will put significant upward prices on oil (recall that a large

percentage of the oil price increase is due to the falling dollar). There will likely be some major event, as a few rogue nations continue to seek or develop nuclear capabilities, destabilizing oil-producing nations. In this scenario, oil may well get cut off, leading to \$500 / barrel oil. A five-times increase shouldn't be that far out of our realm of thinking... just recently, oil was at \$30 a barrel and within three years shot up five times to \$150.

Bottom line

In the "Positive Future", we have marshaled our resources, made the right decisions, and moved forward in a bi-partisan way. Life is good.

In both "Negative Futures", we will have *not* solved our energy-dependence problems, and these problems will be far worse than they are today; and our ability to solve them will be much-reduced. In both negative futures, the decline of the American way of life is a real possibility.

My question is:

What can we each do – to make sure a positive future happens.

About the Author:

Mark has led small to public companies in interim executive roles, and has consulted with hundreds of small to mid-sized companies. He has successfully brought advanced technology to market over the past 30 years. He held senior executive positions at a Northrop Corporation, where he built a 250-person, \$50 million international technology business unit in 2 years. Mark had full P&L responsibility for this business unit. He is an Executive-in-Residence at Oregon's Technology Business Incubator, published *The Entrepreneur's Survival Guide*; and *How to Attract Significantly More Customers*; has a degree in Physics (U.C.I.), a patent and is passionate about enabling the United States to be a net-exporter of renewable energy / technologies. He is President & CEO of NXergy, Inc. – a Renewable Energy Technology Accelerator.

Signed 1st edition copy, by the author:

To order your signed limited-edition copy of this book, go to:
www.energy2025.com/signedcopy.html

After ordering, please email Cedar Mill Publishing (independence@energy2025.com) and include your mailing address and to whom you would like the autograph to be made.

This book excerpt is © 2008, Mark Paul. All rights are reserved.

The electronic version of the book is available at www.energy2025.com. (via PayPal).

No part of this may be copied without attribution nor can any part be edited or modified in any way, per international copyright laws.