

Why The Coming Oil Crunch Will Shock The World

eResearch Corporation is pleased to provide an article written by Dr. Chris Martenson, founder of **PeakProsperity**, entitled “Why The Coming Oil Crunch Will Shock The World”; and why we need a new energy strategy -- fast

Dr. Martenson’s article, which is extensive but well worth the read, begins on the next page. You can also access it directly at [PeakProsperity](#) at the link below. Use <CTRL-CLICK>.

[The Coming Oil Crunch](#)

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Why The Coming Oil Crunch Will Shock The World

And why we need a new energy strategy -- fast

JULY 6, 2018

By Chris Martenson

My years working in corporate strategy taught me that every strategic framework, no matter how complex (some I worked on were hundreds of pages long), boils down to just two things:

1. Where do you want to go? (Vision)
2. How are you going to get there? (Resources)

Vision is the easier one by far. You just dream up a grand idea about where you want the company to be at some target future date. Yes, there is work in assuring that everybody on the management team truly shares and believes in the vision, but that is a pretty straight-forward sales job for the CEO.

By the way, this same process applies at the individual level, too, for anyone who wants to achieve a major goal by some point in the future. The easy part of the strategy is deciding you want to be thinner, healthier, richer, or more famous.

The much harder part, for companies and individuals alike, is figuring out 'How to get there'. There are always fewer resources than one would prefer.

Corporate strategists always wish for more employees to implement the vision, with better training and with better skills. Budgets and useful data are always scarcer than desired, as well. Similar constraints apply to us individuals. Who could not use more motivation, time, and money to pursue their goals?

Put together, the right Vision coupled to a reasonably mapped set of Resources can deliver amazing results. Think of the Apollo Moon missions. You have to know where you are going and how you are going to get there to succeed. That is pretty straight-forward, right?

So, it should be little surprise that the opposite, a lack of Vision and/or Resources, leads to under-performance -- and, eventually, decline. Think Kodak or Xerox. Or third-generation family wealth that has dwindled away to nothing. In a changing world, refusing to change with it is a losing strategy.

A great strategy aligns people's interests and motivations with the available resources. More importantly, it provides a meaningful framework for action, one that gives a sense of purpose that will motivate everyone through difficult or trying times.

The grand goal of defeating the Nazis provided sufficient motivation for people to buy war bonds, scrimp on consumption, plant victory gardens, and go without nylon. A large part of our national resources were dedicated to the larger strategy of winning the war. Because of the strategy

everyone shared, practically nobody complained of this repurposing as a 'time of sacrifice' or as an imposed burden.

Given the right framework and the means to achieve it, people will literally crawl through mud in freezing temperatures -- and find it deeply satisfying. But given zero context or insufficient resources, people quickly become demoralized or rebellious (just observe how quickly most folks get royally pissed off at having to sit on the tarmac for a few extra minutes before their airplane takes off.)

Strategy matters. A lot.

A Nation Adrift, A World In Denial

Here is why I am harping so much on strategy: *the USA is operating without a viable one.*

We neither have a compelling Vision of where we want to go, nor any sense of the Resources required to change the many transitions underway around us. The current 'strategy' (if we can be so generous as to call it that), is nothing more than "business-as-usual" (BAU).

The USA is assuming it is always going to have more cars and trucks on the road this year than last year, more goods sold, a larger economy, more jobs, and the world's most powerful military. That is the BAU model. And it has largely worked for the past century. But it cannot work going forward, and the longer we pursue it, the more of our future prosperity we ruin. Why? Because the future of *everything* is dependent on **energy**. More specifically: **net energy**.

Having a powerful military consumes a tremendous annual quantity of energy. The U.S. military eats up 100 million barrels of oil each year. By itself, America's Department of Defense [is the 34th largest consumer](#) of oil in the world. In total, the USA consumes [over 7 billion barrels](#) of oil each year, and that represents only 37% of the [nearly 100 quadrillion](#) of BTUs of America's annual energy consumption (the rest coming from natural gas, coal, and other sources). For comparison, the rest of the world consumes [another 450 quadrillion](#) BTUs.

World energy demand just keeps on insatiably growing year over year. The (notoriously conservative) EIA predicts it will [jump by 28%](#) over the next two decades. Will our energy production be able to keep up? As I have been [warning for years](#), it will be very challenged to do so - or, to do so at prices anywhere near as low as today's.

Putting Our Plight Into Concrete Terms

Putting those staggering figures aside for a moment, let us focus on one -- just one! -- of the crises ahead of us when it comes to our future energy needs.

The nations of the world have made the truly regrettable decision to build so much of their infrastructure using concrete reinforced with steel (re-bar, mesh, etc.). As I have [explained in detail](#) in previous articles, because the steel rusts over time, the concrete is busy being destroyed from the inside out -- something we can detect easily enough by the cracks and spalling (sheets flaking off) so readily apparent on every bridge that is more than a couple of decades old.

This has created a ticking time bomb. The world's crumbling concrete buildings, bridges, and roadways will have to be entirely replaced in just 40 to 100 years of their original construction dates. Where will all of the energy come from for that?

Also, note that China has poured more steel-reinforced concrete over just the past few years than the USA did in the entire 20th century(!). All of this, too, will need to be replaced later this century.

Given that the sand required for all of the world's "current" concrete projects is [now in very short supply](#), where will all the sand come from for all that future concrete and cement work? Who ever thought we could run out of *sand*?

But such are the unpleasant surprises that crop up during the late stages when running an exponential economic paradigm (i.e., "Growth forever!").

Fooling Oursevles

It certainly does not help that we are remaining willfully blind to our situation. It is probably safe to say that the majority of the population in the USA is confident that the "shale revolution" has assured America's energy security for a long time to come. Heck, the governor of Texas recently tweeted this to the world:



This is wrong on so many levels.

Yes, Texas produces oil and natural gas. But the USA is still a net oil importer to the tune of about 3 million barrels per day. The USA is not independent with respect to oil, and it will not be until it produces another 3 million barrels per day (and that is making the generous assumption that consumption remains flat).

Further, to claim that the USA will NEVER AGAIN depend on foreign oil is beyond bizarre. As I have been [explaining for years](#), shale fields deplete and decline ferociously. Even the hyper-bullish EIA thinks that the shale fields will peak out in 2025 (I think earlier) and then go into permanent decline.

In my world, NEVER AGAIN is a lot farther out into the future than 2025. But Mr. Abbott has apparently ingested one too many petroleum sales pitches and received a terribly inaccurate impression about the true state of the USA's energy predicament.

Much more likely is that U.S. shale production does not EVER exceed U.S. consumption before peaking out. So, it would be more accurate to tweet the USA is now and will ALWAYS AND FOREVER be dependent on foreign oil.

Finally, even if the USA were a net oil exporter (highly unlikely), we would still be tied to the world price for oil. Should foreign cartels decide to limit production and spike the price, that would still effect the USA. So we still would not be "independent" of their influence.

But, sadly, Mr. Abbott speaks for the nation in that tweet. We are "swimming in energy" and need not have any worries. The drum of our chest-thumping will scare them away. In other words, there is no strategy beyond BAU.

There is no acknowledgement of the challenges we face in the coming decades, of declining net energy per capita, and of greater competition between the developed and developing nations for the remaining BTUs.

There is no compelling Vision to marshal the public towards that what fits the realities of the future. We could, and should, be working on solutions for entering a "post-growth" era with grace or, at a minimum, aggressively using today's Resources to create a new energy infrastructure that plans for the inevitable decline of fossil fuels. We could be doing so much better than this.

Getting Our Priorities Straight

What if we started by embracing these three facts?

1. **Fossil fuels have provided a supernova of surplus energy.** One that has enabled literally everything and everyone you see around you to spring into existence.
2. **Fossil fuels are a very recent discovery for humans** (barely 150 years-old). Half of our consumption of them has happened in just the last 25 years alone (due to exponentially increasing use).
3. **Fossil fuels will not last forever.** They are finite and will someday peak and then decline, representing a once-in-a-species bonanza never to be repeated.

It is beyond dispute that fossil fuels are 4/5ths of the current total global energy mix, that our use and dependence on them has grown exponentially over time, and that they are a non-renewable resource.

Among the fossil fuels, oil is, by far, the most critically-important to sustaining both our current level of technology and the human population. It is how we move virtually everything from point A to point B and it is a critical element for food production and distribution. It also remains absolutely essential to the manufacture and installation of alt-energy systems, like wind and solar.

Given the three facts above, it only makes sense that a responsible global society should have a credible and very publicly-stated energy strategy providing a road map for weaning itself from fossil fuels before they become prohibitively expensive/scarce.

But since we do not have one, the alternative path we are taking is to sleepwalk into the future with no plan for feeding 9 billion people or re-building a crumbled global infrastructure -- let alone facing the additional challenges of running out of critical minerals, dealing with destroyed ecosystems, and being unable to field the necessary fuel and economic complexity to install a brand-new energy infrastructure measuring in the hundreds of quadrillions of BTUs.

This BAU path will be marked by the three Ds: despair, demoralization, and death. (Is it any wonder that young people are not as inspired by BAU as their parents' generation?)

So, if instead we want a future that is prosperous, regenerative, and abundant, then we have to begin doing things very differently from BAU. And fast. (The best time to have started on this was decades ago.) For example, if we decide we want electric transportation powered by wind and solar to be anything more than a meaningless tiny percentage of the total BTU mix, then we are going to have to use a lot of fossil fuels to make that happen. It takes an enormous amount of fossil fuels to manufacture, install, maintain, and repair/replace every single alt-energy component.

The question then becomes: *Where do we want to be when that future arrives?* If we want to have livable cities and towns with nearby greenbelts and an alt-energy infrastructure delivering clean energy sustainably forever into the future, then an enormous amount of planning and building is going to be required to get anywhere near close to that. It all comes back to strategy. We need a compelling Vision of this future to inspire society, and then dedicate the appropriate Resources to make it happen. With an appropriate energy strategy that matches reality, we can engineer a reasonably bright future. Without one, we will just pursue BAU until it literally destroys us as well as the ecosystems we depend on.

An New Energy Strategy

So, here is how to go about doing that.

First, identify all the energy demands that absolutely have to happen just to maintain systemic integrity. The DoD has needs, the current fleets of emergency vehicles and school busses have needs, as does maintaining the existing stock of bridges, roads, and buildings. This exercise will reveal to all that simply maintaining “the way things are” is extraordinarily energy-expensive. But it has to be done if we want to avoid economic collapse and massive joblessness. It also bears mentioning that the energy required to *keep things going* is energy that cannot be dedicated to building the new future. It is a sunk cost of prior decisions.

Second, make a credible list of energy needs for building the future we want. How many solar panels will that be? How many wind farms? How many miles of electrified train track? How many fully-electric vehicles will have to be built? How many charging stations will the nationwide road system need? What sorts of improvements and modifications to existing cities and towns will have to be made? This is the Vision. It answers the question *Where are we going?* Of course, these sorts of new activities and building projects will be *very energy expensive*. If we want them to happen, then we have to budget consciously an appropriate amount of energy to accomplish the Vision.

Third, develop the very best possible estimate of total economically recoverable fossil fuels. Do this by finally measuring the full-cycle energy returned on energy invested ([EROEI](#)) for the remaining deposits. After all, we are going to build out the future with the *surplus* energy extracted, not the gross (surplus = Total BTUs extracted - BTUs expended during extraction). This estimate will represent the total principal balance of our national energy bank account.

Fourth, and last, calculate if there will be any energy left over. If so, save it for future generations. They will have their own sets of needs and desires that we cannot possibly know today. (Sadly, I am willing to wager that there will not be any excess fossil energy to pass along).

A Sample Scenario

By way of example, suppose that the USA undergoes a thorough, exhaustive, peer-reviewed, and thoroughly-debated examination of all known remaining fossil fuel resources – coal, natural gas, and oil – using the very best and well-funded EROEI methodologies (yet to be developed, by the way). If we arbitrarily say that there are “100 units” of net energy left, we might discover this:

- 25 units will be required to simply maintain the economic system so it does not crash and can support the build-out of the new Vision for the future.
- 60 units will be required to build that future out.
- 15 units are not yet assigned. We might decide to leave those to future generations because that would be conscientious and prudent. Or perhaps we discover that they should not be burned because of the environmental impact.

Results such as these yield important insights.

First, we would understand that if we accidentally burned through, say, 45 units blindly pursuing BAU, that would steal 20 units from building out the future we want.

Next, we would realize better that our chances of manifesting the Vision are improved by limiting the amount we spend on maintenance. That insight would help to spur better decisions around conservation and efficiencies -- such as not driving 6,000 pound private SUV/Truck vehicles to transport a single passenger to a desk job, or building homes with inadequate insulation to save a few thousand dollars on the front end of a 100-year capital investment.

Finally, we would appreciate how our energy resources are finite and limited, and that how we choose to utilize them is quite possibly the single most important decision society can possibly make. Leaving the fate of our precious energy resources to the short-term interests of the markets and politicians would suddenly look too risky and nonsensical. We would agitate for greater stewardship of them.

Were I in charge, the most well-funded institution in the land would be the Energy Institute. Our very best and brightest minds would be heavily incentivized to work there, applying their considerable gifts at science and mathematics towards matching our energy resources with our shared national goals. Gone would be the days of our top talent working for Wall Street and private money funds to move electronic abstractions of wealth hither and yon, skimming money while creating absolutely nothing of lasting value for their country or the world.

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However, we both know that no such strategic energy plan is forthcoming. There is no strategy in the USA (or Japan or Europe or China, or anywhere) that aligns finite resources with a well-defined, sustainable vision of the future. BAU rules the roost.

It is so powerfully embedded that Ford Motor Company [recently decided to scrap selling sedans and small cars in America](#). It will only manufacture SUVs, trucks, and commercial vehicles. You know when Ford will no longer make cars, they have got to have really chugged the shale oil Kool-Aid to make *that* decision.

Concrete is still poured with steel rebar every day. New homes and commercial buildings are built with expected lifetimes of only several decades and little attention to insulation. And the Federal Reserve focuses with manic precision on assuring that the credit markets continue to grow exponentially.

Each of these and a million other activities consumes finite, irreplaceable energy at the expense of a sustainable future. At some point, perhaps already past us, that goal becomes no longer possible. My point is we don't know where that line in the sand is. We haven't done the work, made the plans, and performed the necessary visioning to know one way or the other.

But what we can be sure of is that BAU is headed in the wrong direction and it has no long-term future. One way or the other, endless growth on a finite planet will run its course and end. The only remaining question left to answer is: *How painful will the reckoning be?*

None of us knows what will finally break the largest and most destructive credit cycle ever unleashed on the world (thanks central banks!) but we all know that [The Everything Bubble](#) has a bitter end. All self-destructive delusions do. Our analysis concludes that the hard-stop for this credit bubble is resource-based, and I predict it will be a sudden spike in the price of oil that will be the pin that the central bank-enabled bubbles absolutely cannot grow beyond. They will encounter this pin and burst.

There will be plenty of time for tears and regrets then. But right now? You need to get ready.

In [Part 2: How The Coming Oil Shock Will Impact Absolutely Everything](#) we go deep into the data showing why a global oil supply shortfall is unavoidable by or before 2020. That is less than two years away.

If gas prices at today's \$70/barrel price bother you, you ain't seen nothin' yet. The spike in oil's price that will result from the coming crunch will shock the world.

As an increase in the price of oil feeds into the cost of everything, it acts like an interest rate increase in terms of depressing economic growth. If we have not already entered one yet, this coming shock will absolutely throw the global economy into recession. And if we are already in one when it hits, heaven help us.

[Click here to read Part 2](#) of this report (*free executive summary, [enrollment](#) required for full access*)

BW: [Part 2: How The Coming Oil Shock Will Impact Absolutely Everything](#) is available only to enrolled members of Peak Prosperity. You can do this at the Link provided above.

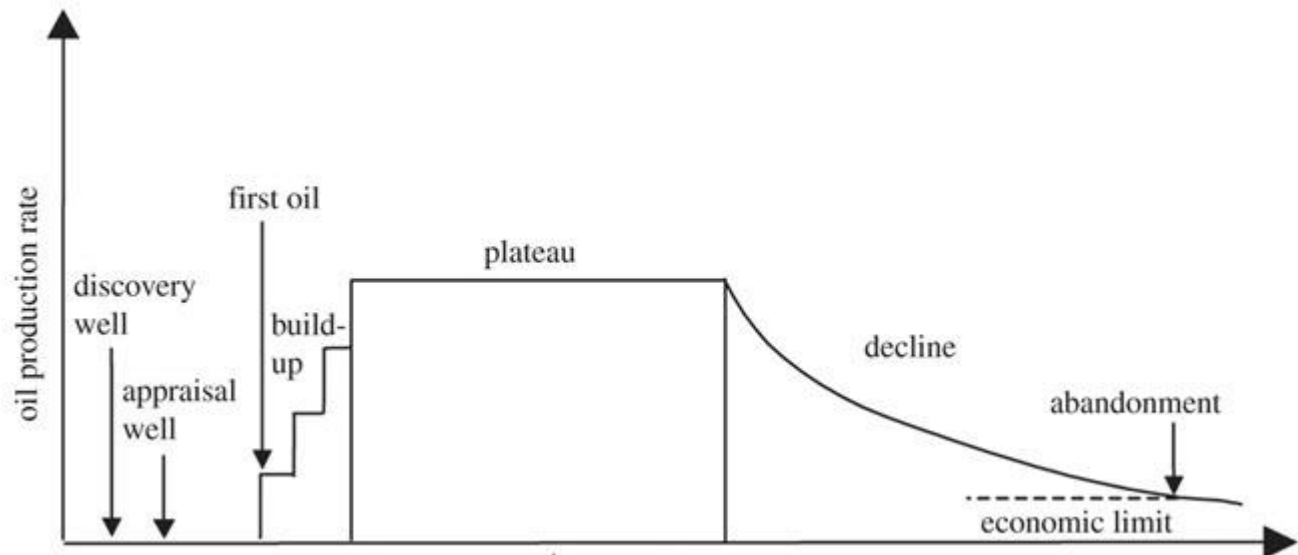
The introduction to part 2 is set out on the next page.

Part 2**How The Coming Oil Shock Will Impact Absolutely Everything**

Price spikes, supply crunches, and recession everywhere

[As I've written extensively in the past](#), there are four entire years of missing upstream oil and gas investment (2014—2017) that will lead to an equivalent period of missing oil and gas supply sometime in the future. With the usual 5-7-year lag between discovery and production, my time frame for that was somewhere between the end of 2018 and 2022.

When -- not if -- that supply shock hits, there is no amount of fresh investment money that can rapidly bring new supply on line. Doing so just takes time -- measured in quarters or years:



As we enter into the second half of 2018, the supply/demand balance has already tipped into a slight deficit. I am clearly predicting that:

1. this supply imbalance will only get worse, and that
2. oil prices will have to rise to compensate.

The only development that could possibly prevent this from happening would be a rip-roaring recession, as only economic decline has proven to be able to reduce demand by as much as will be needed to avoid this supply crunch.



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ABOUT THE AUTHOR



Chris Martenson is an independent economist and author of a popular website, PeakProsperity.com.

Dr. Martenson's *Crash Course* video series explores the intertwining significance of the “three E’s”—the economy, energy, and environment and offers articulate, dynamic insight into the workings of the monetary system.

Chris earned a PhD in neurotoxicology from Duke University, and an MBA from Cornell University. A fellow of the Post Carbon Institute, Chris's work has appeared on PBS and been cited by the *Washington Post*. He is a contributor to *SeekingAlpha.com*.

Chris is an accomplished presenter who has offered the *Crash Course* seminar all over the United States. The online course has been translated into several languages, and been viewed over 1.5 million times.

His website (see below) offers both daily free content as well as a newsletter service for enrolled members. His goal is to help as many people understand that we are in the midst of a profound economic shift, and that equally profound risks and opportunities lie in our future. For those that can see them coming, tremendous advantages exist.

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