

Thinking The Unthinkable

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"Down one road lies disaster, down the other utter catastrophe. Let us hope we have the wisdom to choose wisely." - Woody Allen

Introduction

Oil depletion is just the first of a series of resource crisis humanity is about to face because there are just too many of us! This century we will face peak resources, period.

There are many fascinating and exciting renewable energy developments. Wind turbines, solar energy, geothermal, biomass, wave and tidal power schemes which are all important energy sources for the future - and could at least help keep the electricity grid going to some degree!

The popular assumption is that these renewable energy sources, perhaps also including uranium, plutonium and just possibly nuclear, which seems to be coming back on the agenda, will smoothly replace fossil fuels as these become scarce, thanks to our inherited technological expertise. However, although these all produce electricity they are not liquid fuels.

Unfortunately, these popular assumptions could hardly be more wrong.

The energy budget must be positive. Output must exceed input. Too much tends to be expected of renewable energy generators today, because the contribution of fossil fuels to the input side is poorly understood.

For example, a wind turbine is not successful as a renewable generator unless another similar one can be constructed from its raw materials using only the energy that the first one generates in its lifetime, and still shows a worthwhile budget surplus.

Or, if corn is grown to produce bioethanol, the energy input to ploughing, sowing, fertilizing, weeding, harvesting and processing the crop must come from the previous year's bioethanol production. Input must also include, proportionately, mining and processing the raw materials and building the machines that do the work, as well as supporting their human operators.

There is nothing that can replace cheap oil for price, ease of storage, ease of transportation and sheer volumes in the timeframe we need.

There is continuing debate over whether a suitable energy alternative might be found to replace the energy from oil as it runs out, but there is certainly no compelling evidence that a comparable substitute will be found.

It is difficult to think about 'how things will play out' when an oil-based global economy loses its cheap energy source. It has never happened before. It will never happen again.

Many of the solutions to Peak Oil that are discussed revolve broadly round 'sustainability' and 'sustainable development', including replacement technologies and finding an alternate source of 'sustainable energy'.

What is Sustainable Development?

A Definition of Sustainable Development: Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.

There are tremendous shortcomings in this definition as there is no requirement to conserve specific resources. It does not matter what mineral resources (e.g. fossil fuels, minerals) are depleted so long as something is found to replace them.

>From an economic perspective, all that matters is market value, cost per unit, and economic output.

Any attempt by one generation to leave the world as it found it is unlikely and infeasible. Instead, all that is required to comply with this definition is that non-renewable resources that are used up must be replaced with something else.

When one resource is depleted or destroyed, just find a different way of doing things, or do something else. Everything is expendable, everything is replaceable. All that matters is economic output and economic efficiency.

Another way to put all of this is that any group of beings (human or nonhuman, plant or animal) who take more from their surroundings than they give back will, obviously, deplete their surroundings, after which they will either have to move, or their population will crash.

The Future Mirrored in the Past

The farther backward you can look the farther forward you are likely to see.

(Churchill)

'Collapse' is the language of the apocalypse and we find such issues difficult if not impossible to deal with.

The long-term consequence of Peak Oil will take decades to unfold as a series of rolling and interconnected crises, each one more difficult to cope with than the previous as resources become scarcer and as more and more systems break and infrastructure decays.

However, let us be clear: overshoot created by a lack of energy means the human population of the earth will have to shrink to a sustainable number.

Ecologists use a technical term, "die-off", to describe what happens when a population grows too big for the resources that sustain it.

People are always saying the world will end and it never does. Maybe it won't this time, either. But, frankly, it's not looking good.

Almost daily, new evidence is emerging that progress can no longer be taken for granted, that a new Dark Age is lying in wait for us and our children. By some estimates, 5 billion of the world's 6 billion population would never have been able to live without the blessed effects of fossil fuels, and oil in particular.

We also need to remember that when a civilization goes splat, the technologies that supported it tend to go with it. This is particularly true of systems that are based on highly interdependent technologies such as ours today.

Greer states in 'Facing the New Dark Age: A Grassroots Approach'.

'Finally population die-off begins as the wrecked industrial system no longer produces enough to meet even the most basic human needs. The process ends with impoverished survivors a century or so from now scratching out a meager living amid the crumbling ruins of a once-great civilisation.'

'This Die Off scenario makes a shocking contrast to the cozy fantasies of perpetual progress most people cherish.

Those who study history, on the other hand, will find it much more familiar. The same process has happened dozens of times before, and our present predicament can best be understood by paying attention to the past.'

Another crucial lesson is that the common notion of holing up in a cabin in the hills with stockpiled food and enough firearms to outfit a Panzer division. This is not a realistic response.

It takes time for a civilization to come apart, and the process is like rolling down a slope, not like falling off a cliff.

We face a future of shortages, economic crises, disintegrating infrastructure, and collapsing public health, probably stretched out over a period of decades.

A few years of stored food and an assortment of high-tech paramilitary gear are hopelessly inadequate preparations in the face of this reality.

Stockpiles of precious metals, another common hedge against collapse, are even more useless. All the gold in the world means nothing unless people value it enough to trade scarce resources for it.

Problems with Progress

How many people nowadays can't light a fire without matches or butane lighter from some distant factory?

The skills necessary to get by in a non-industrial society, skills that were still common knowledge a century ago, have been all but lost.

Knowledge is critical and currently, there is little knowledge of basic survival skills, and even less knowledge of the scope of the problems that are looming.

It's clear that whatever the future holds, it will hold many fewer people than today's world, and the road there won't be easy or pleasant.

If there are problems with holing up in a cabin in the hills what about self sufficiency?

Community survival during the coming energy decline

"Those who already enjoy a measure of self-sufficiency, such as ecovillages and other kinds of sustainable intentional communities will already have some of the skills and experience needed for re-localization."

In *Powerdown*, Richard Heinberg notes that small, self-sustaining communities may become cultural lifeboats in times to come.

He says, "Our society is going to change profoundly — those of us who understand this are in a position to steward that change. We are going to become popular, needed people in our communities."

But no matter how prepared an intentional community or organized neighborhood may be, it will be adversely impacted in some way.

But is Community Enough

Experts suggest several possible scenarios for the coming energy decline and any of these scenarios will present significant challenges for intentional communities.

Even in the "soft landing" scenario, there will still be massive structural changes in society and being in debt may be the undoing of many.

Common advice among many Peak Oil experts is to get out of debt!

Let's say for example, that a community is deeply in debt, and is still paying off its property purchase loans.

Let's say the community loses its financial resource base — if members lose their jobs or if a weak economy reduces the market for the goods and services the community produces — the group could default on its loan payments, and may have its property seized by the bank or other creditors.

A property-value crash may worsen the debt situation for intentional communities. If a community's property value falls below their equity in the property, they won't be able to save themselves from defaulting on loans by selling off their land, which is typically the last resort of farmers in debt.

All the shortages and systems failures that can affect mainstream culture can affect intentional communities as well.

A community may not have enough foresight, labor, tools, or funds to create alternatives to whatever their members use now for heating, lighting, cooking, refrigeration, water collection, water pumping, and disposal utilization of gray water and human waste.

Then there's the matter of community security — a subject many find "politically incorrect" to even consider. If the government fails; if the law and order system falls apart, there can be various kinds of dangerous consequences. Desperate, hungry people can loot and steal and take what they want from others.

Vigilante groups can form to either deal with the lawlessness, and/or take what they want themselves. Government may declare martial law, rescind constitutional liberties, and send in troops to restore order and/or take what they want from others. Having supportive neighbors and good networking in the greater community may help.

The social fabric has been unraveling for several decades, and the lack of solidarity or social cohesion is another one of the reasons there must be a collapse — after all, do you see community-spirit on

the rise and an actual transition underway to a sustainable and ecological society?

So would it be possible to rebuild Civilization after a collapse? Jason Godesky wrote in 'It will be Impossible to Rebuild Civilization',

"The current state of civilization is dependent on resources that are now so depleted, that they require an industrial infrastructure already in place to gather those resources. We can fetch this fossil fuel only because we have fossil fuels to put to the task."

He goes on to comment on metals.

- * That to maintain civilization, only some metals are useful.
- * They must be strong enough for agriculture or war.
- * They must keep an edge.
- * They must occur in economically feasible quantities.
- * They must have a melting point low enough to be worked.

Gold, silver, etc. immediately fail as the quantities are insufficient, and they are far too soft.

There are many other metals which are basically all alloys and would be all but unworkable in a post collapse society. The metal that probably deserves the most attention is iron.

He says that iron although problematic is not impossible and may well be the only metal that survivors will have access to.

(1) Ore,

Most near-surface iron deposits were exploited long ago. What remains is deep in the ground and is unlikely to be accessible without fossil fuels, except in rare exceptions.

(2) Scavenged iron.

Scavenged iron is, especially in the immediate aftermath of collapse likely to be the most abundant source although most of the sophisticated alloys we use now rely on the kind of high temperatures attainable only with fossil fuels.

This shouldn't matter too much as there's still enough that can be done with heated and reworked scavenged metals.

After a few decades the scavenged metals will become more and more rusted and even worn out and the metalworking will begin to diminish as it becomes harder and harder to make poorer and poorer metal weapons and tools.

(3) Bog Iron.

The final source is bog iron which is actually a renewable resource. About once each generation the same bog can be re-harvested but it may be up to a century before today's bog iron deposits are refilled; after that, it may enter the cycle of once-a-generation per bog.

We should be aware of this factor because of one other necessary resource that we have so far only touched on briefly: knowledge.

The knowledge of how to work iron and many other processes was accrued over centuries.

Those who know, no longer do; those who do, no longer know. This may well end applying to a lot of knowledge.

How much knowledge will manage to survive the post collapse period, for the time that comes after when it may become useful again?

If it is insufficient, we will be starting from scratch again. This will apply to all knowledge and knowledge is a powerful thing, difficult to relearn from seed, and easily lost.

How plausible would agriculture be after the collapse?

Civilization is only possible through agriculture, because only agriculture allows a society to increase its food supply — and thus its population— and thus its energy throughput — and thus its complexity — so arbitrarily."

Plants, like any other organism, take in nutrients, and excrete wastes. In nature, what one plant excretes as waste, another takes in as nutrients. They balance each other, and all of them thrive.

But monoculture — planting whole fields of just one crop — sets fields of the same plant, all bleeding out the same nutrients, all dumping back in the same wastes.

"The ecological effects of fossil-based food production have been catastrophic, particularly with respect to agriculture. As a result, the complex ecology of the living soil is being destroyed, leading to increased wind and water erosion.

In the near-term, most arable land has long been depleted, and is now utterly dependent on fertilizers made from fossil fuels. In the course of our civilization we have used up all of the surface and near-surface deposits of all the economically viable fossil fuels and minerals.

The lack of metals will continue to limit technological development after the collapse — and by limiting technological development, it will also limit all other forms of complexity.

We are therefore talking about a complete break with the end of our current civilization. Whole generations will pass before civilization becomes feasible again.

What, then, of the distant future?

The Distant Future

After the passage of millennia, the soil may well heal itself, and the necessary climate may return. In that scenario, agriculture may be possible in those same areas, and under the same conditions, that it first occurred.

With the passage of geological ages, though, this will pass. Fossil fuels will be replenished, and metal ores will rise to the surface.

Then, if there are still humans so far into the future — this is a matter of at least tens of millions of years, far longer than humans have so far survived — then there might be another opportunity to rebuild civilization.

So after the collapse, we may see a brief Iron Age, but it seems more likely to fade away within the next two centuries.

Living without oil, if we don't start to prepare for it, will not be like returning to the pre-industrial world, because we will have lost the infrastructure that made that life possible. We have also lost our basic survival skills.

Today, the UK population is about 62 million. In 1750, when the Industrial Revolution was beginning, it was about 6 million. It had never exceeded this figure, although during the Dark Ages and after the Black Death it fell to one or two million.

Most people lived and died in poverty. Pre-industrial farmers were pushed to the limit to feed so many. The population increased slightly in years with good harvests, but starvation and malnutrition cut it back to the 6 million norm when harvests were bad.

Food is energy. And it takes energy to get food. These two facts, taken together, have always established the biological limits to the human population and always will.

Conclusion

The topic of Peak Oil is at present enveloped by a great silence and the public seems unprepared for rational discussion

This reminds me of a comment made by Sherlock Holmes in A. Conan Doyle's story "Silver Blaze."

Inspector Gregory had asked, "Is there any point to which you would wish to draw my attention?"

To this Holmes responded:

"To the curious incident of the dog in the night time."

"The dog did nothing in the night time," said the Inspector.

"That was the curious incident," remarked Sherlock Holmes.

By asking himself what would repress the normal barking instinct of a watchdog, Holmes realized that it must be the dog's recognition of his master as the criminal trespasser.

In a similar way we should ask ourselves what repression keeps us from discussing something as important as survival long term after Peak Oil.

Curious, but understandable — for the foreseeable future I think that our survival demands that we govern our actions by the ethics of a lifeboat. Posterity will be ill served if we do not.

Those who attended Peak Speak 1 in London last year may remember the lifeboat analogy I mentioned.

Greer uses a similar point in his 'The Coming of Deindustrial Society'.

'Imagine that you're on an ocean liner that's headed straight for a well-marked shoal of rocks. Half the crew is dead drunk, and the other half has already responded to your attempts to alert them by telling you that you obviously don't know the first thing about navigation, and everything will be all right. At a certain point, you know, the ship will be so close to the rocks that its momentum will carry it onto them no matter what evasive actions the helmsman tries to make. You're not sure, but it looks as though that point is already well past.

What do you do? You can keep on pounding on the door to the bridge, trying to convince the crew of the approaching danger. You can join the prayer group down in the galley; they're convinced that if they pray fervently enough, God will save them from shipwreck. You can decide that everyone's doomed and go get roaring drunk. Or you can go around quietly to the other passengers, and encourage those people who have noticed the situation (or are willing to notice it) to break out the life jackets, assemble near the lifeboats, take care of people who need help, and otherwise deal with the approaching wreck in a way that will salvage as much as possible.

Although there is growing awareness of the problem, there is also widespread ignorance and denial, even by people who should know better.

Mankind has, it seems, an infinite capacity for denial. The evidence is overwhelming that we are in the "overshoot" phase of the industrial life cycle, yet most people and most organizations refuse even to discuss this matter, let alone acknowledge it. The world after the industrial age will be very different from the world of today. For most people on Earth (if mankind escapes extinction), it

will be similar to the world of the past millions of years — a primitive, natural environment (although perhaps less bountiful and beautiful than before).

Although most people will not survive the collapse of the industrial age, it will belong, in concept and structure, to those who prepare for the great change that is about to happen

The arrays of skills necessary for people to 'thrive' and not just 'survive' in a non-oil economy are many. Most people do not have the essential skills to reproduce (or even repair) the technology on which we depend today.

We seem to be in a state of delusional thinking and the only thing we're debating is how we're going to keep the cars running without oil.

What I have said above is not, as some one said after my talk last year, to get you all to wear brown underwear. It is to try to show you that, even at this late stage, if we all do not think seriously, realistically and logically about the consequences of our inaction then what I have suggested may well become fact.

We will be faced with the necessity to downscale, rescale and reorganize all the fundamental activities of our daily lives; the way we grow food, the way we conduct commerce, the way we manufacture things and school our children. We must learn to do this tomorrow . . . at the crack of dawn.

We should seriously think of breaking out the "Life Jackets" and "Manning" the lifeboats which is as I said last year at least one step before "deploying" the lifeboats.

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"Once the game is over, the king and the pawn go back in the same box."

-Italian Proverb

"To our grandfathers and grandchildren, the cavemen . . ."

(Rene Barjavel 1911 - 1985)

If you have any comments on this please contact me on the below:
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