



Peak Oil Booklet - Chapter 4: What Should We Do Now?

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This is a draft of Chapter 4 of my proposed book. The link to previous chapters is http://www.theoil drum.com/tag/tverberg_book.

We know that peak oil will be here soon, and we feel like we should be doing something. But what? It is frustrating to know where to start. In this chapter, we will discuss a few ideas about what we as individuals can do.

1. What will the first few years after peak oil be like?

It is hard to know for certain, but a reasonable guess is that the impact will be like a major recession or depression. Many people will be laid off from work. Gasoline is likely to be very expensive (\$10 a gallon or more) and may not be available, except in limited quantities after waiting in line for a long time. Fewer goods of all types will be available in stores. Imports from third-world countries are likely to be especially unavailable, because of the impact of the oil shortage on their economies.

Money may not have the same value as previously--opinion is divided as to whether deflation or rampant inflation will be a problem. Investments, even those previously considered safe, are likely to lose value. Things we take for granted--like bottled water, fast food restaurants, and dry cleaners--may disappear fairly quickly. Electricity may become less reliable, with more frequent outages. Airplane tickets are likely to be extremely expensive, or only available with a special permit based on need.

2. If a scenario like this is coming, what can a person do now?

Here are a few ideas:

- Visit family and friends now, especially those at a distance. This may be more difficult to do in the future.
- Learn to know your neighbors. It is likely that you will need each other's help more in the future.
- If you live by yourself, consider moving in with friends or relatives. In tough times, it is better to have others to rely on. It is also likely to be a lot cheaper.

- Buy a bicycle that you can use as alternate transportation, if the need arises.
- Start walking or jogging for exercise. Get yourself in good enough physical condition that you could walk a few miles if you needed to.
- Take care of your physical health. If you need dental work or new glasses, get them. Don't put off immunizations and other preventive medicine. These may be more difficult to get, or more expensive, later.
- Move to a [walkable neighborhood](#). If it seems likely that you will be able to keep your job, move closer to your job.
- Trade in your car for one with better mileage. If you have a SUV, you can probably sell it at a better price now than in the future.
- If you have two cars powered by gasoline, consider trading one for a diesel-powered vehicle. That way, if gasoline (or diesel) is not available, you will still have one car you can drive.
- Make sure that you have at least a two-week supply of food and water, if there is some sort of supply disruption. It is always good to have some extra for an emergency--the likelihood of one arising is greater now.
- Keep reasonable supplies of things you may need in an emergency--good walking shoes, boots, coats, rain wear, blankets, flashlights and batteries (or wind-up flashlights).
- Take up hobbies that you will be able to continue in a low energy world, such as gardening, knitting, playing a musical instrument, bird watching, or playing cards with neighbors.
- Join a local sustainability group or "permaculture" group and start learning about sustainable gardening methods.

3. Do I need to do more than these things?

It really depends on how much worse things get, and how quickly. If major services like electricity and water remain in place for many years, and if gasoline and diesel remain reasonably available, then relatively simple steps will go a a long way.

Some steps that might be helpful to add once the crunch comes include:

- Join a carpool for work, or make arrangements to work at home. If public transportation is available, use it.
- Cut out unnecessary trips. Eat meals at home. Take your lunch to work. Walk or jog in your neighborhood rather than driving to the gym. Order from the internet or buy from stores you can walk to, rather than driving alone to stores.
- If you live a distance from shopping, consider forming a neighborhood carpool for grocery and other shopping. Do this for other trips as well, such as attending church. If closer alternatives are available, consider them instead.
- Plant a garden in your yard. Put in fruit or nut trees. Make a compost pile, and use it in your garden. Put to use what you learned in sustainability or permaculture groups.

- Meat, particularly beef, is likely to be very expensive. Learn to prepare meals using less meat. Make casseroles like your grandmother's, making a small amount of meat go a long way. Or make soup using a little meat plus vegetables or beans.
- Use hand-me-down clothing for younger children. Or have a neighborhood garage sale, and trade clothing with others near you.

4. Should families continue to have two, three, or four children, as they often do today?

With the uncertainties ahead, it would be much better if families were very small--one child, or none at all. The world's population has grown rapidly in the last 100 years. Part of the reason for growth is the fact that with oil and natural gas, it was possible to grow much more food than in the past. As we lose the use of these fossil fuels, it is likely that we will not be able to [produce as much food](#) as in the past, because of reduced ability to irrigate crops, and reduced availability of fertilizers, insecticides, and herbicides. In addition, manufactured goods of all types, including clothing and toys, are likely to be less available, with declining fossil fuel supply. Having smaller families will help fit the population to the available resources.

If couples have completed their families, it would probably be worthwhile for them to consider a permanent method of contraception, since birth control may be less available or more expensive.

5. Are there any reasons why steps such as those outlined in Question 3 might be too little to handle the problem?

Besides the decline in oil production, there are a number of other areas of concern. Hopefully, most of these will never happen, or if they do happen, will not occur for several years. If they do happen, greater measures than those outlined in Question 3 are likely to be needed.

- [Collapse of the financial system](#). Our financial system needs growth to sustain it, so that loans can be paid back with interest. Once peak oil hits, growth will be gone. Economic growth may even be replaced with economic decline. It is not clear our financial system can handle this.
- [Collapse of foreign trade](#). Many factors may come into play: The cost of transportation will be higher. Airline transport may not be available at all. Fewer goods are likely to be produced by the poorer countries of the world, because of power outages related to high oil prices. Rapid inflation/deflation may make monetary transactions more difficult.
- [Rapid climate change](#). Recently, scientists have discovered that climate change can take place over a very short period of time--as little as a decade or two. Temperature and precipitation changes may cause crop failures, and may make some areas no longer arable. Sea levels may also rise.
- [Failure of the electrical grid](#). The grid tends to be vulnerable to many kinds of problems--including deterioration due to poor maintenance, damage during storms, and attacks in times of civil unrest. Maintenance is currently very poor (grade of D) according to the "[Report Card on America's Infrastructure](#)" by the American Society of Civil Engineers. If we cannot maintain the grid, and upgrade it for the new wind and solar capacity being added, we will all be in the dark.
- [Water shortages](#). There are several issues--We are drawing down some aquifers at unsustainable rates, and these may be depleted. Climate change may reduce the amount of water available, by melting ice caps and changing storm patterns. City water and sewer systems require

considerable energy inputs to continue functioning. If these are not provided, the systems will stop. Finally, systems must also be adequately maintained--something that [is neglected](#) currently.

- [Road deterioration](#). If we don't have roads, it doesn't matter whether we have cars. In the future, asphalt (a petroleum product) is expected to become more and more expensive and less available. It is not clear whether recycling asphalt from lesser-used roads will overcome this difficulty.
- [Decline in North American natural gas production](#). Natural gas is especially used for home heating, making plastics and making fertilizer. It is also used in electrical generation, particularly for extra load capacity when demand is high. Conventional natural gas [is declining](#), and it is not clear that supply from other sources can make up the gap.
- [Inadequate mineral supplies](#). A number of minerals are becoming less available, including [copper](#) (used in electric wiring), [platinum](#) (used in catalytic converters), [phosphorous](#) (used in fertilizer).
- [Fighting over available supplies](#). This could happen at any level. Individuals with inadequate food or gasoline may begin using violence. Or there may be fighting among groups within a nation, or between nations.

6. Are there any reasons for optimism?

Yes. We know that people throughout the ages have gotten along successfully with far fewer resources than we have now, and with much less foreign trade. Financial systems have gotten into trouble in the past, and eventually new systems have replaced them. If nothing else, barter works.

We know that among the countries of the world, the United States, Canada, and Russia have reasonably good resource endowments in relation to their populations. They have fairly large amounts of land for crops, moderate rainfall, reasonable amounts of fossil fuels remaining, and populations that are not excessively large.

We also know that Cuba successfully made a transition from high oil usage to much lower oil usage, through the development of local gardens, increased public transit, and bicycles. A [movie](#) has been made about the Cuban experience.

7. What should we do, if we want to do more than described in Question 3?

Some web sites (such as [Life After the Oil Crash](#) and [wtdwtshtf.com](#)) advocate moving to a farming area, buying land and hand tools, and learning to farm without fossil fuels. Typically, an individual purchases an existing farmhouse and adds solar panels or a windmill. The web sites generally recommend storing up large supplies of food, clothing, medicine, tools, guns, and ammunition, and learning a wide range of skills. These sites also suggest storing some things (liquor, razor blades, aspirin, etc.) for purposes of barter.

This approach may work for a few people, but it has its drawbacks. Making such a big move is likely to be expensive, and will most likely involve leaving one's job. The individual will be alone, so security may be a problem. The individual may be dependent on his or her own resources for most things, especially if the farm is in a remote location. If the weather is bad, crops may fail. Living on the edge of a small town may prevent some problems, but such a move would still be a

major undertaking.

8. How about [Ecovillages](#)? What are they?

These are communities dedicated to the idea of sustainable living. These communities were set up in response to many issues facing the world, including global warming, resource depletion, and lifestyles that are not fulfilling. They were generally not formed with peak oil in mind.

Each ecovillage is different. Organizers often buy a large plot of land and lay out a plan for it. Individuals buy into the organization. Homes may be made from sustainable materials, such as bales of straw. Gardening is generally done using "permaculture"- a sustainable organic approach. Individuals may have assigned roles in the community.

The few ecovillages I investigated did not seem to truly be sustainable--they bought much of their food and clothing from outside, and made money by selling tours of their facilities. The ecovillage approach could theoretically be expanded to provide self-sustaining post-peak oil communities, but would require some work. Some adventuresome readers may want to try this approach.

9. Is there a middle ground? What should be people be doing now, if they want to do more than outlined in Questions 2 and 3, but aren't ready to immerse themselves in a new lifestyle?

As a middle ground, people need to start thinking seriously about how to maintain their own food and water security, and start taking steps in that direction.

Food security. We certainly hope our current system of agriculture will continue without interruption, but there is no guarantee of this. Our current method is very productive, but uses huge amounts of energy. If we can keep our current system going, its productivity would likely be higher than that of a large number of individual gardens. The concern is that eventually the current system may break down due to reduced oil supply and need to be supplemented. Vulnerabilities include:

- Making hybrid seed, and transporting it to farmers
- Getting diesel fuel to the farmers who need it
- Transporting food to processing centers by truck
- Creating processed food in energy-intensive factories
- Making boxes and other containers for food
- Transporting processed food to market

If diesel fuel is allocated by high price alone, farmers may not be able to afford fuel, and may drop out. Or truck drivers may not be able to get what they need.

It is in our best interest to have a back-up plan. The one most often suggested is growing gardens in our yards--even front yards. Another choice is encouraging [local farms](#), so that transportation is less of an issue. It takes several years to get everything working well (new skills learned, fruit trees to reach maturity), so we need to start early.

One type of crop that is particularly important is grain, since grain provides a lot of calories and stores well. In some parts of the country, potatoes might be a good substitute. It would be good if people started planting grain in gardens in their yards. There is a lot to learn in order to do this, including learning which grains grow well, how much moisture and nutrients the grains need, and

how to process them. If the grain that grows well is unfamiliar, like [amaranth](#), there is also a need to learn how to use it in cooking.

Individuals (or local farms) should also begin growing other foods that grow well in their areas, including fruits and nuts, greens of various types, and other more traditional garden crops, including beans. For all types of gardening, non-hybrids seeds (sometimes called [heirloom seeds](#)) are probably best for several reasons:

- It makes storing seeds after harvest possible, and reduces dependence on hybrid seeds.
- There is less uniformity, so the harvest is spread over a longer period.
- The reduced uniformity also helps prevent crop failure in years with drought or excessive rain. Some seeds will not grow, but others will. (Hybrids are all or nothing.)

Imported foods are likely to shrink in supply more quickly than other foods. If you live in a country that is dependent on imported foods, you may want to consider moving elsewhere.

Water Security. Here, the largest issue is whether there is likely to be sufficient supply in your area. Another issue is whether there will be sufficient water for your garden, at appropriate times. A third issue is whether there will be disruptions in general, because of poor maintenance or because the process of treating fresh water (and sewage) is energy-intensive.

With respect to sufficient water in your area, if it looks like there is a problem (desert Southwest, for example), relocating now rather than later is probably a good idea. Transporting water is energy intensive, and new efforts at developing energy (like shale oil or more ethanol) are likely to make the water supply situation even worse.

With respect to water for gardening, consider a [rainwater catchment system](#) for your roof. Runoff water is saved in barrels, and can be used for irrigation in dry periods.

General disruptions of water supply are more difficult. Keep some bottled water on hand. You may also want to consider a tank for greater storage supply. Rainwater catchment can be used for drinking water, with the correct type of roofing (not asphalt shingles!) and proper treatment, but this is not generally legal in the United States.

10. What kind of investments should I be making?

A person's first priority should be buying at least a little protection for a rainy day - some extra food and water, comfortable clothing, blankets and flashlights. I suggested two weeks worth in Question 2. If you have money and space, you may want to buy more.

Paying down debt is probably a good idea, if only for the peace of mind it brings. There are some possible scenarios where debt is not a problem (hyper-inflation but you keep your existing job and get a raise). In many other scenarios (deflation; job lay-offs; rising food and energy prices) debt is likely to be even harder to pay off than it is now.

Land for a garden is probably a good investment, as well as garden tools. You will want to invest in gardening equipment, some books on permaculture, and perhaps some heirloom seeds. You may also want to consider a [rainwater catchment system](#), to collect water from your roof.

You may also want to invest in solar panels for your home. If you want round-the-clock solar energy, you will also need back-up batteries. Buying these is questionable--they tend to be very

There is a possibility that the financial system will run into difficulty in the not-too-distant future. Some ideas for investments that may protect against this are

- [Treasury Inflation-Protected Securities \(TIPS\)](#)
- Bank accounts protected by the FDIC
- Gold coins
- Silver coins

If you want to invest in the stock market, we know that there will be more and more drilling done for oil and gas done in the next few years, so companies making drilling equipment are likely to do well. Small independent oil and gas companies may also do well, doing "work-over" business. We know that there are likely to be shortages in some metals in the years ahead (copper, platinum, uranium), so shares in companies mining these types of metals may do well.

Investments in biofuels should be considered with caution. Most ethanol from corn appears to be heavily dependent on subsidies. If it should ever have to compete with other fuels on a level playing ground, it is likely to do poorly.

I would be cautious about buying insurance policies, except for short-term needs such as automobile coverage, homeowners coverage, and term life insurance. If we encounter a period of significant deflation, insurance companies are likely to fail, because bondholders cannot pay their debt. If we run into a period of rapid inflation, the life insurance or long term care coverage you buy may have very little real value when you come to use it.

11. Should I move to a different location?

There are many reasons you might want to consider moving to a different location:

- To find something less expensive. If times are going to be difficult, you do not want to be paying most of your income on a mortgage or rent.
- To be closer to friends or family, in the difficult times ahead.
- To share a house or apartment with friends or family.
- To be closer to work or public transportation.
- To be closer to a type of employment that you believe will have a better chance of continuing in the future.
- To have better fresh water supplies.
- To join a community with similar interests in sustainability.
- To leave a community that you feel may be prone to violence, in time of shortage.

There are disadvantages as well as advantages to moving to a new location. If many others are trying to move at the same time, you may not be welcome in the new community. You will likely not have friends and the support group you would have had in your prior location. Because of these issues, it is probably better to move sooner, rather than later, if you are going to move. If you balance the pluses and the minuses, it may be better to stay where you are.

12. We hear a lot about various things we can do to be "green", like buying fluorescent light bulbs. Do these save oil?

Most of the "green" ideas you read about save energy of some kind, but not necessarily oil. Even so, they are still a good idea. If there is a shortage of one type of energy, it tends to affect other types of energy as well. Doing "green" things is also helpful from a global warming perspective.

Here are some green ideas besides using fluorescent light bulbs:

- Move to a smaller house or apartment.
- Insulate your house, and have it [professionally sealed](#) to keep out drafts.
- If any rooms are unused, do not heat and cool them.
- Keep your house warmer in summer, and cooler in winter.
- If you no longer need a big refrigerator, buy a smaller one. Be sure it is an ["Energy Star"](#) refrigerator.
- If you have more than one refrigerator, get rid of the extra(s). Refrigerators are a big source of energy use. For parties, use ice in a tub.
- Separate freezers are also big energy users. Consider doing without.
- Eat less meat. Also avoid highly processed foods and bottled water. All of these require large amounts of energy for production.
- Get power strips and turn off appliances that drain energy when not in use.
- Turn off lights that are not needed.
- Rewire lights into smaller "banks", so you do not need to light up the whole basement when all you want is light in a small corner.
- Get a clothes line, so you do not need to use your clothes dryer.
- When cooking, use the microwave whenever possible.
- Reduce air travel to a minimum. Air travel results in a *huge* number of miles of travel with corresponding fuel use.
- Recycle whenever you can.
- Eliminate disposables as much as possible (coffee cups, napkins, plastic bags, etc.)

13. Should we be talking to our local government officials about these problems?

Yes! At the local level, there are many changes that would be helpful:

- Laws permitting people to put up clothes lines in their yards.
- Laws encouraging gardens to be grown, even in the front yards of homes.

- Laws permitting multiple occupancy of houses by unrelated individuals.
- New local public transportation plans, particularly ones that do not require large outlay of funds. For example, a plan that is more like a glorified car pool might work.
- Allocation of funds to study the best crops to be grown in the area, and the best cultivation methods, if energy supplies are much lower in the future.

It would also be helpful to make changes at higher levels of government, but these are beyond the scope of the discussion in this chapter.

14. What other resources might we look at to get ideas about what is ahead what we might do now?

[The Community Solution](#) is an organization that puts on an annual [sustainability conference](#) and issues [reports](#) on energy-related solutions.

Global Public Media has a number of talks on [relocalization](#).

[Closing the Collapse Gap](#) is a humorous talk by Dmitry Orlov. The Soviet Union collapsed in 1990, and its oil production dropped about that time. Dmitry compares the US situation to that of the USSR.

Rolling Stone has a short [summary](#) of The Long Emergency, a book by James Howard Kunstler.

Links by Question:

Q2: Calculate a "walk score" for any neighborhood - Learn about walkable neighborhoods
<http://www.walkscore.com/get-score.shtml?street=500+7th+street%2C+arcata...>

Q4: Eating Fossil Fuels: Oil, Food, and the Coming Crisis in Agriculture by David Allen Pfeiffer, New Society Publishers, 2006
<http://www.amazon.com/Eating-Fossil-Fuels-Coming-Agriculture/dp/08657156...>

Q5-1: Rapid Climate Change, American Institute of Physics
<http://www.aip.org/history/climate/rapid.htm>

Q5-2: Report Card for America's Infrastructure by American Society of Civil Engineers
<http://www.asce.org/reportcard/2005/page.cfm?id=92>

Q5-3: Earth Policy Institute, Lester Brown President
<http://www.earth-policy.org/>

Q5-4: Report Card for America's Infrastructure by American Society of Civil Engineers
<http://www.asce.org/reportcard/2005/page.cfm?id=92>

Q5-5: National Petroleum Council - Hard Truths about America's Energy Supply, 2007
http://downloads.connectlive.com/events/npc071807/pdf-downloads/Facing_H...

Q5-6: Measure of Metal Supply Finds Future Shortage, David Biello, Scientific American, January 17, 2006.
<http://www.sciam.com/article.cfm?articleID=000CEA15-3272-13C8-9BFE83414B...>

Q5-7: Carmakers Gear Up for the Next Shortage-Platinum, The Mining News, July 6, 2005

<http://www.theminingnews.org/news.cfm?newsID=800>

Q5-8: Peak Phosphorus by Patrick Dery and Bart Anderson, August 13, 2007

<http://www.energybulletin.net/33164.html>

Q6: The Power Community: How Cuba Survived Peak Oil, Movie Directed by Faith Morgan, The Community Solution

Q7-1: Life After the Oil Crash

<http://www.lifeaftertheoilcrash.net/>

Q7-2: What to Do When the Shit Hits the Fan

<http://wtdwtshtf.com/>

Q8: Global Ecovillage Network

<http://gen.ecovillage.org/>

Q9-1: Local Harvest directory of local food sources

<http://www.localharvest.org/about.jsp>

Q9-2: Amaranth, Wikipedia

<http://en.wikipedia.org/wiki/Amaranth>

Q9-3: Heirloom Seeds

<http://www.heirloomseeds.com/>

Q9-4: American Rainwater Catchment Systems Association

<http://www.arcsa-usa.org/>

Q10-1: American Rainwater Catchment Systems Association

<http://www.arcsa-usa.org/>

Q10-2: Treasury Securities, Wikipedia

http://en.wikipedia.org/wiki/Treasury_security

Q12-1: Southface: Responsible Solutions for Environmental Living

<http://www.southface.org/>

Q12-2: Energy Star by US Environmental Protection Agency and US Department of Energy

<http://www.energystar.gov/>

Q14-1: The Community Solution Home Page

<http://www.communitysolution.org/index.html>

Q14-2: The Community Solution Conference, October 26-28, 2007 Yellow Springs, Ohio

<http://www.communitysolution.org/conference.html>

Q14-3: The Community Solution Reports

<http://www.communitysolution.org/nsreports.html>

Q14-4: Closing the Collapse Gap: The Soviet Union Was Better Prepared for Collapse than the US, by Dmitry Orlov, December 4, 2006

<http://energybulletin.net/23259.html>

Q14-5: Summary of The Long Emergency by James Howard Kunstler, March 24, 2005

http://www.rollingstone.com/news/story/7203633/the_long_emergency

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