

# New Solutions



*Community, a solution for saving the environment and conserving resources with equity for all.*

## Community Resurgence and Oil Depletion

*This first issue of New Solutions marks a major change in the strategy of Community Service, Inc. We recently began directing our energies towards the study of "Peak Oil," which led us to a heightened understanding of the need – not just the desire – for living in small, sustainable communities.*

*In this issue we chronicle our path to this new awareness. We think you'll agree – small local communities are a vital part of the solution to what lies ahead.*

In 2002, Community Service, Inc. began the development of [smallcommunity.org](http://smallcommunity.org), a new web site which would contain significant educational material, including The Community course designed by Arthur Morgan. As we entered into this major undertaking, our attitude was somewhat resigned. As long time advocates of small local communities, we believed (and still do) that this is the preferred way to live, particularly in contrast to the increasing urbanization and globalization tendencies of the worldwide "free market."

We stand opposed to this world direction and regret what sometimes appears to be a juggernaut rolling over all resistance. Small community is what we are committed to and we intend to persevere regardless of how many farmers in the third world are moved into the ghettos of third world megalopolis or how many small farmers in the U.S. give up their way of life and move to a factory job.

But something changed our perspective. We began to hear about something called "peak oil" or "peak oil production." When we inquired, we learned that peak oil is the term which marks the point in time at which a nation's oil production reaches its maximum and then begins to decline. We found nothing complex about that concept and wondered about the probability of that occurring.

We were surprised to hear that "peak oil" occurred in the United States in 1970! It seemed important to us, and we were surprised that the event had escaped our notice as well as the notice of everyone else we talked to. Then Don Hollister, who seems to be able to find a book in our library about nearly anything, brought forth a copy of a book called *The Coming Oil Crisis* written by Colin Campbell in 1997 and published by Multiscience Publishing Company and Petroconsultants S.A. in Essex, England.

We discovered that Colin Campbell was fairly well known in the oil industry, having been an oil-hunting geologist for 30 or so years. We next discovered that

### What is Peak Oil?

- Peak Oil is the year in which oil production reaches its maximum.
- Peak oil is the point in time at which half the oil in the world will have been burned.
- After that year there will be a continuous decrease in production until all oil has been consumed.
- Peak oil does not mean "running out of oil," but rather a steadily decreasing supply, increasing costs and major changes to the lifestyle to which we have become accustomed.



Colin Campbell's 1997 book, *The Coming Oil Crisis*, re-ignited concern over Peak Oil.

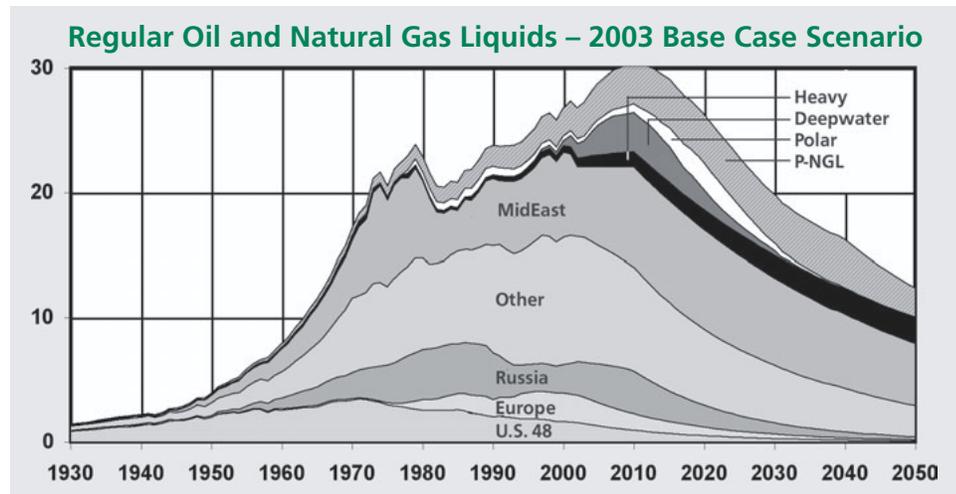
the entire March, 1998 issue of *Scientific American* magazine had been devoted to oil and the topic of peak oil and included an article by Colin Campbell. In parallel we were receiving advance chapters of another book called *The Party's Over – Oil, War and the Fate of Industrial Societies*. This book, by Richard Heinberg, was published in April 2003. We found another important book on the subject of peak oil, *Hubbert's Peak*, written by Ken Deffeyes, another retired oil geologist.

We learned that the concept of "peak oil" had been proposed by M. King Hubbert, a geologist who worked for Shell Oil. King Hubbert's theory was straightforward. At the time of his introduction of the peak oil concept in 1954, he wrote that the world had been searching for, locating and developing oil for more than 75 years. He said that based on the data available from these decades of exploration, it was possible to determine how much oil had existed in a given area, such as the lower 48 states of the U.S., and to predict when it would be half gone. He further said that at the point the oil in a reservoir was half gone, that production would begin to decline and

continue to decline until the reservoir was empty.

This latter theory seemed strange. Why would the oil production slow down just because half of it was gone? Couldn't more wells be drilled or pumps speeded up? As we investigated this, we learned that oil doesn't sit in underground pools with wells acting as straws entering the liquid and sucking it up. Rather, oil is distributed in particles in oil-bearing rock and when a well is drilled, pressure pushes these particles into the bore hole where they pool at the bottom and can then be pumped to the surface. As we came to understand it, the basic idea is that when one half of the oil has been pumped from an area, then the rate of production begins to decline steadily until that particular oil reservoir is no longer capable of producing oil.

As we studied further, we learned that in 1954 King Hubbert had predicted that the date when oil production would peak in the lower 48 U.S. states would be approximately 1970. This astounded us – that a man in 1954 could accurately predict the date of such an event 16 years later. At the time, in 1954, others were not only astounded at the prediction but considered it to be ridiculous. However, to the world's surprise, oil production in the lower 48 U.S. states did peak in 1970,



Since the 1930s, massive amounts of petroleum products have been produced – and consumed. The decline, however, is inevitable.

and the rate of production has been declining steadily ever since.

Predicting the peak of oil production for an area was not a particularly popular pastime, since it brought to the forefront

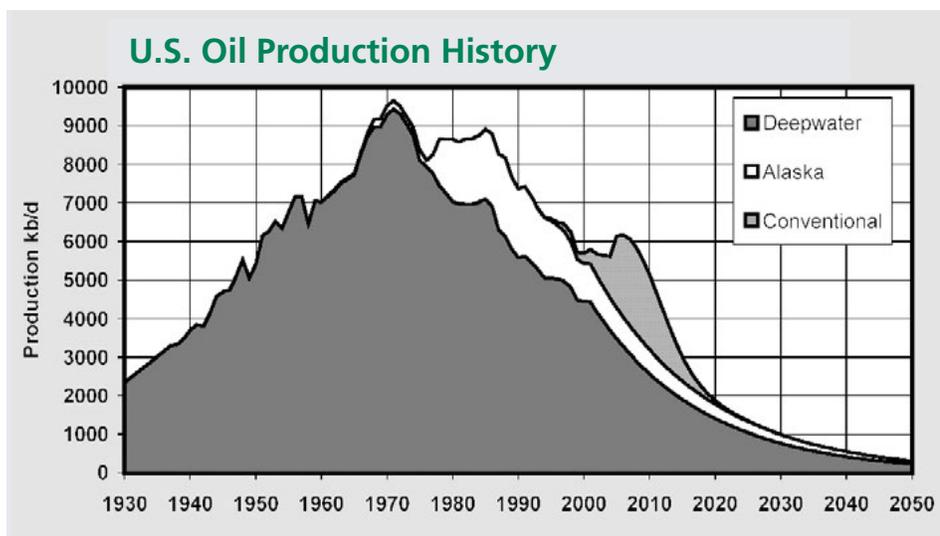
**...oil production did peak in the lower 48 U.S. states in 1970, and the rate of production has been declining steadily ever since.**

the fact that oil is a finite resource. This was an unpleasant reminder that someday there would be no more oil and that possibility was discouraging to anyone who thought about it. In fact, King Hubbert

was heavily criticized from the time of his prediction until the date it was validated. So there have been few predictions in the ensuing years. However, King Hubbert did make a prediction of world peak oil to be somewhere around the year 2000, but he died long before that date arrived.

So matters rested until 1997 when Colin Campbell published his book. Since that time, more and more articles have been appearing. The reason for this renewed interest is that many oil specialists are now predicting that peak oil for the world will occur sometime this decade. And like Hubbert, they are being reviled and criticized. However, in this case the evidence is much stronger. Hubbert was predicting an event 16 years away. The latest predictions are for world peak oil to be in the next 2-6 years. The evidence is stronger because area after area of the world has now reached peak oil production. It is now projected that world oil production outside the Middle East will peak in the next year or two or may possibly have already peaked.

Since Hubbert's prediction of 1954, an enormous amount of data has been gathered. And the major oil companies, such as Exxon Mobil, have shown that world oil discovery has been declining since 1970. The question is no longer if world oil will peak – the question is when.



The U.S. was the first major oil producer to peak. The graph of oil production follows the pattern of a bell-shaped curve. Today's production is about one-third of the peak production.

## The Oil Depletion/ Community Connection

So what does all this information about peak oil have to do with community and CSI? Arthur Morgan founded CSI in 1940. Oil was becoming more broadly used, but it was not until after the Second World War that its use became widespread and the volume used began growing exponentially. At the same time, the rate of urbanization began to increase and the great migration from farm to city began, as well as the growth of suburbs.

Farms changed with the advent of fertilizers, pesticides, and tractors – all of which were based on the plentiful quantities of oil that had become available. The growth of cities and decline of rural areas is a pattern that has continued world wide. Almost half the people in the world now live in metropolitan areas – many of them in huge slums. In the U.S. the population is now divided 81 percent urban and 19 percent rural.

**It is now projected that world oil production outside the Middle East will peak in the next year or two or may possibly have already peaked.**

Of course it is almost inconceivable that this situation would reverse. Our belief in progress, technology and material gain have been the dominant paradigms and values for the society for over half a century. We ignore the fact that people lived mostly in small communities ever since the dawn of time – for thousands of years. Our perspective is that these were the dark ages or at least the ages of primitive (implied ignorant) people, and now the modern world represents the zenith of these thousands of years.

Yet we forget just how limited this industrial age is in scope. For Americans, it is a steady stream of progress, particularly with innovative machines. For four-fifths of the world, life has not changed significantly. Of the more than six billion people in the world, only one billion have TV. Some 350,000,000 have computers and 450,000,000 have cell phones. The majority are living in ways little different than their parents and grandparents.

At Community Service, this period of industrial growth is viewed more as a dark age than an enlightened era. That is because we view the optimum development of man to be in small communities. We see the alienation, loneliness, and unhappiness of people living in urban

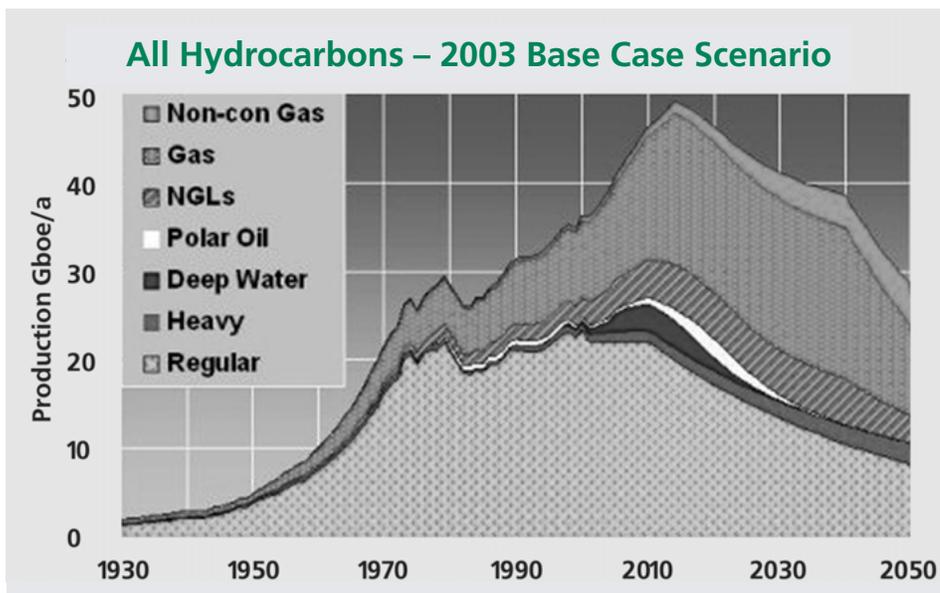
## Oil Depletion Summary

- Most people accept the obvious – oil is finite.
- U.S. energy use almost doubled in 50 years.
- Oil and gas production is flattening.
- Stated oil/gas reserves are misleading and inaccurate.
- Depletion threatens the capitalist theory of continuous growth.
- Most of the world thinks “Iraq is about oil.”
- Oil/gas decline will begin soon (5-20 years).
- Solar/wind/geothermal energy is less than 1 percent.
- Major renewables are wood and waste.
- Government is pushing nuclear power

areas and their associated slums. Opinion surveys show a longing for a smaller town where one can know one’s neighbors, where face-to-face encounters with people, sharing common interests, take place on a daily basis.

So we looked at the issue of peak oil and what was projected to follow and wondered if this represented the trigger event that will reverse urbanization and globalization and spur the beginning of decades of decentralism, reflecting the decades of urban growth and rural depredations that preceded it. A few decades are not very long in the scheme of things. We wondered what the world would look like in another 63 years – this number representing the time that CSI has been in existence. Will we all live in huge towers in cities covered by glass domes? Or will we be living more in small towns with less dependence on fossil fuels?

Our executive committee met last fall to consider this question. We wondered if an oil crisis would reverse the long-term decline of small communities. We wondered if we could shift from the gentle position of holding on to a faded dream (humored by others with a tolerant smile



Conventional oil, which is referred to as cheap oil because it is the easiest to extract, is at a plateau. More costly oil products will reduce the impact of declining cheap oil; however, soon all such oil will also decline.

and the phrase “you can’t go home again”), and move from “keeper of the past” to “visionary of the future.”

We decided to treat this seriously. Our first step was to devote a significant part of our web site to a discussion of oil depletion and the estimated dates of peak oil. Next we prepared a presentation called “Depletion-Driven Decentralism” and presented that at our annual conference in November, 2002. We did further analysis during the year and at our conference in October 2003 presented a paper titled “Oil Depletion and Community Resurgence.”

## A.S.P.O. – We Become Part of a Larger Community

As our own efforts progressed, we continued to monitor the progress of those who had begun expressing their concerns only a few years ago. We found the Association for the Study of Peak Oil (ASPO), a group of oil geologists and university scientists. We learned that Colin Campbell founded this organization in Europe in early 2001 with the initial membership consisting of education and research institutes from Germany, Norway, Sweden, Ireland and the United Kingdom.

Membership and interest grew and the first conference was held in Uppsala, Sweden in May 2002. Sixty delegates attended from Australia, Byelorussia,



ASPO leadership, representing most European nations, gathers after the meeting in Paris in 2003.

Denmark, Finland, France, German, Iran, Ireland, Norway, Portugal, Russia, Sweden, the United Kingdom and the United States.

A few months later we reviewed the presentations from the conference, and one immediately caught our attention. It was a description of the decentralization process of a medium-size city over several decades. The author, Folke Gunther, described the process of redistributing sections of the city to the surrounding countryside. His plan was predicated on maintaining a steady-state environment with few resources needed from outside the existing area.

Having been working on decentralization (which may be necessary when fossil fuel resources became limited) for years, we were delighted to see a model of

decentralizing from the very group most familiar with the issue of oil depletion.

We sent two of our staff to the second ASPO conference held in May 2003 at the Institute for French Petroleum (IFP) in a suburb of Paris. They found themselves with 150 other delegates from around the world. Only 12 of the attendees were American, with the rest from 19 different countries. Everyone there had a strong interest in the subject, and most had been working in some way in the energy field.

About two-thirds of the attendees held Ph.D.s, and the level of the papers was quite high. There were 24 different papers presented, interspersed with lunch and dinner meetings as well as informal discussion throughout the conference.

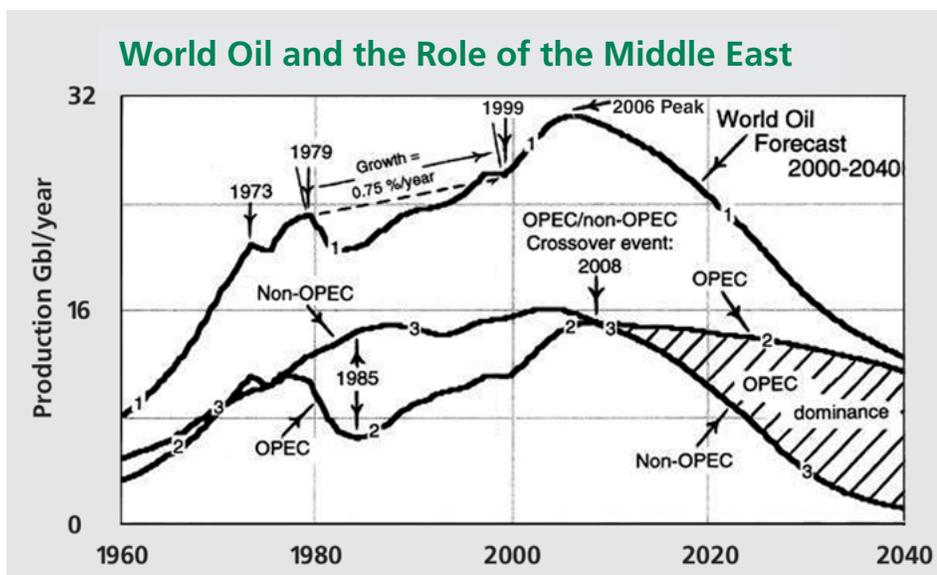
Some topics were:

- French assessment of oil supplies
- Analysis of Bush’s May 2001 Energy Plan
- British documentary on Middle East oil scarcity
- History of North Sea peak oil and gas
- Analysis of Canada’s oil shale production
- Off-shore oil drilling and discovery
- Alternative energies development
- Alternative fuels and automobiles
- Survey and comparison of 60 different predictions for total oil in the earth

Many of these papers were highly technical in terms of oil or economics. Yet they were well presented and we had no problem understanding their significance because of the work we had done in the past year.

There were two papers we felt were extremely significant:

1. Was 2000 the peak year? A presentation by Ken Deffeyes, author of *Hubbert’s Peak*. Dr. Deffeyes pointed out that oil production in 2001 and 2002 was almost the same as the year 2000. He then noted the type of social problems and upheavals that would occur as these resources



By 2008, OPEC will clearly dominate oil production, as non-OPEC oil production declines rapidly.

## Three Obstacles to Overcome

- The belief that the “good life” can only be attained by consumption
- Harmful economic doctrines:
  - Man as master of “his” environment
  - Living on a planet of infinite resources
- Unreliable data and reporting on oil resources

diminish, and pointed out that the bombing of the World Trade Center, the collapse of the stock market, the war in Afghanistan and the invasion of Iraq fit the model of resource depletion and the associated difficulties.

2. Dr. Michael Slesser, consultant in natural capital accounting and energy systems, drew the connection between oil and capitalism and noted the fact that oil was not one of several commodities but was the sole basis on which capitalism was possible. This brought forth the question of what economic system might arise in a time of diminished resources.

## Community – A Key Piece of the Discussion

We had been somewhat concerned about our role in a conference filled with scientists, government officials and economists. Our organization in Yellow Springs appeared small when compared to the major universities, large corporations and government institutions that were present. However, we felt strongly that our message was a vital one since the alternatives to a decline in energy consumption were few and far between.

We drew heavily on our work at our last year’s conference in preparing our conversations. We made reference to the book *Bowling Alone*, by Robert Putnam, a measure of community in the United States and we noted how the social statistics show a general decline across a wide range of human activities. We spoke

of Arthur Morgan, E. F. Schumacher, Wendell Berry and the Fellowship for Intentional Community, pointing out that our traditional focus on small community was multi-generational.

Our studies of oil gave us the capacity to enter the discussions and we did so with enthusiasm. A few days prior to the conference, we had created a new web site “fuelcellfolly.org” and had this printed on our business cards. Our ability to address the questionable value of yet more technological solutions brought forth both humor and curiosity.

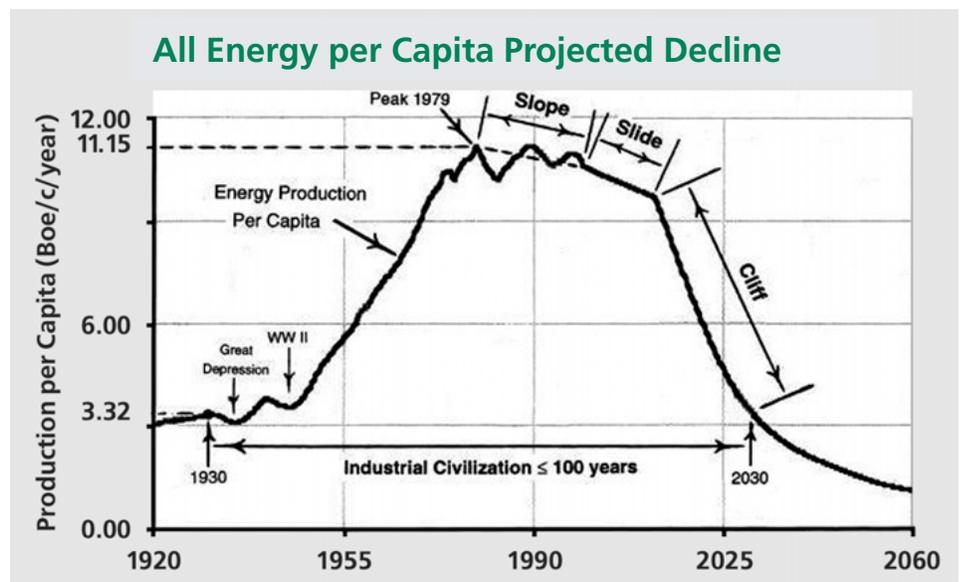
**We emphasized that we were not against technical solutions but that social solutions were as important if not more important to the future of the planet.**

We discussed with people what they really felt about the coming change facing

and were intrigued that we could articulate clearly an alternative vision.

One evening we had the good fortune to be seated at a table with three journalists. One, a Norwegian living in France, was in the process of preparing a documentary on the work of Colin Campbell. A second was beginning a documentary called *The End of Suburbia: Oil Depletion and the Collapse of The American Dream* for the New Urbanism movement. The third was a Swedish journalist with a strong interest in resource depletion.

Initially, they were a bit incredulous when they heard our views about decentralization. But after talking with us they began to understand our point of view. They realized that we were the one group present that was not assuming technology would somehow save mankind, and in fact we had cogent arguments about why that was not only unlikely but also undesirable.

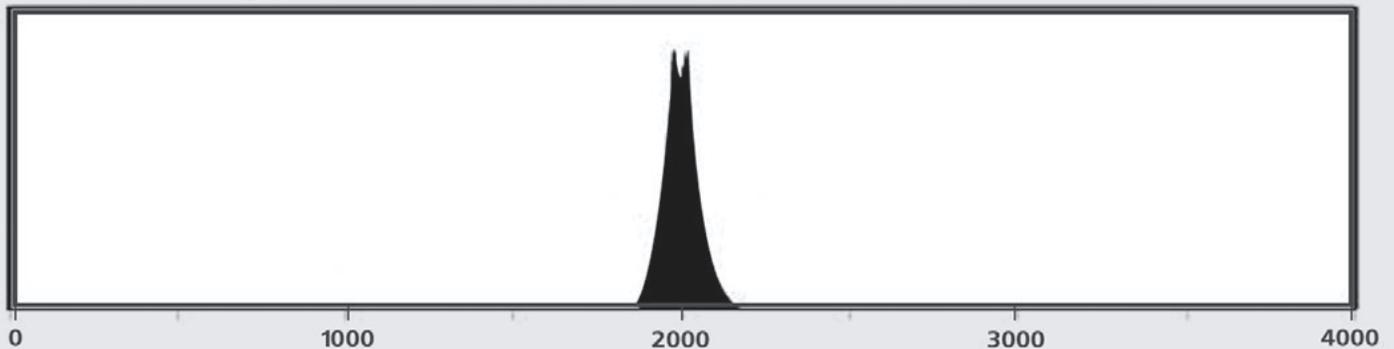


Energy production began its steep upward climb in the 1930s. By 2030, production will have declined to the 1930 level – our industrial civilization will last about one century.

an industrial economy that had been growing for over a century, and asked if they really thought the mirrors, PV cells, windmills and other technologies could replace the billion-year legacy which we have thoughtlessly squandered. Many admitted that they had no faith in the technological solutions being proposed

At our 2002 conference we had summarized some of the statistics from the book *Bowling Alone*, which showed the decline in the popular measures of “community” or, as the author termed it, “social capital.” We were able to make the point that if a highly industrial society which provided amazing amounts of

## The Energy Curve of History?



For thousands of years, mankind lived a sustainable lifestyle. For two centuries mankind drew down the fossil fuel resources that took millions of years to create. He will soon begin living in a sustainable manner again.

convenience and novelty, all of which was associated with declining health, increased chances of war, and the corresponding increased levels of inequity and general social decline, then what was the point? As Ivan Illich pointed out in his classic essay (written during the last oil crisis of the 1970s) entitled *Energy and Equity*, high levels of energy consumption lead to high levels of inequity and decreasing social involvement and satisfaction.

On the morning after the ASPO conference, we went to our hotel breakfast room and found individuals from Switzerland, Iran, Denmark, France, Germany and Italy. The eight of us had a spirited *ad hoc* discussion about the implications of oil depletion as well as the position of the United States in the world, now viewed as focused on controlling the oil that remains.

Once more we could talk about our views of decentralism and small community. Most of these people, and most of the attendees at the conference, were professionals with excellent credentials in science. Yet our social position made sense to them. We emphasized that we were not against technical solutions but that social solutions were as important if not more important to the future of the planet. We felt that they were touched by our views and our commitment to community.

## The Community Solution – A New Vision for Community Service

We returned home from the ASPO conference concerned and excited. Our concern came from meeting a large group of scientists who have studied the depletion problem in detail and who have verified the arguments that predict peak oil. Our excitement came from discovering that our hypothesis of small community as an alternative was accepted as a valid one from the perspective of those attending. The fact that Community Service, Inc. had been in existence for sixty years and that we had our own body of sociological knowledge, not just from Arthur Morgan, but also from other “communitarians,” impressed our listeners. We invited them to review our

“Ride Share” proposal showing how transportation costs could be reduced 75 percent in a few years with a little bit of technology and a lot of “community spirit.”

As we go forward with our new vision we foresee resurgence both in community and in Community Service’s role. We see the organization moving from a historical position of “keeping the flame alive” to one of key leadership in the years to come.

We are expanding our activities and our influence. Recently we traveled to Cuba to study the sudden loss of guaranteed oil imposed on that country by the collapse of the Soviet Union. We found that Cuba had rapidly decentralized and converted to organic gardening, bicycles (to replace cars) and had developed community forums for local self governance. We learned there is a way to live happily and healthily without consuming large amounts of petroleum.

We hope this gives both new readers and long-time members an idea of our activities and our future direction. We will be providing Reports like this on a frequent basis and welcome your support of our work. ■

### What Is the Ultimate Solution?

- A change of values through community
- Ending the competitive hydrocarbon lifestyle
- Beginning of a cooperative sustainable lifestyle
- Energy curtailment
- Organic farming and gardening

From the Director

## A Few Comments on Oil "Reserves"

As we talk with people about oil depletion, we frequently are told something like "Don't worry, there is enough (oil, gas, uranium, coal) to last (50, 100, hundreds) of years." We sometimes inquire about their sources and typically they respond with a reference to a newspaper, magazine article or a TV show. Having read and heard many of these casual comments about sufficiency of oil reserves for the future, we know that people rarely question these optimistic numbers.

In January 2004, the energy industry was rocked by a scandal. Shell Oil, one of the four major oil companies in the world, lowered their "Proved Reserves." In the book *The Hype About Hydrogen* by Joseph Romm, completed in 2003 and printed in early 2004 (before Shell Oil's above announcement), there is a sentence which begins with the phrase, "The Royal Dutch/Shell Group, probably the most successful predictor in the global oil business...."

Yet it turns out that this most "successful predictor" found itself not only reducing its "Proved Reserves" by 20 percent but also greatly embarrassed when it was discovered that the chairman and chief exploration officer had deliberately misled the world about the status of their reserves. This may very well be the tip of a very large iceberg.

Obviously "Proved Reserves" are not proved at all. Using the term is simply a way to disguise the fact that oil-experts guess at what is available.

"Proved Reserves" also has a political context, however. In the 1980s most of the OPEC countries suddenly increased their Proved Reserves by two to three times what they had been. With a little investigation one discovers that the amount of oil OPEC countries can produce, and ship, is tied to a certain percentage of their Proved Reserves. If their Proved Reserves increase, then their production can go up as well. So, one enterprising country suddenly increased their Proved Reserves.

Within a short time the other OPEC countries increased their Proved Reserves accordingly. This "marketing move" was never rescinded so most OPEC reserves are highly suspect.

Another factor became apparent. As low oil prices stayed stagnant for several years, there was pressure to cut costs. Many mergers and layoffs occurred in the oil industry. As part of the cost-reduction effort, the use of appraisal wells was reduced. Appraisal wells are drilled after new "wildcat" wells, the wells first drilled in an untested area with high oil potential, have been proven to contain oil. These appraisal wells typically result in lower reserve estimates than the original wildcat wells. From 1998 to 2003 the number of appraisal wells was reduced by almost one half. As a result the original estimates were never verified, leading to cost savings in exploring but less accurate data on "reserves."

"Proved Reserves" are basically poor estimates and have little value in estimating the rate of future production. Poor estimates serve a political and financial purpose as well and to date there has been little interest in seeking accuracy. There is also the factor of the oil that must be "left behind," since the original estimates are typically higher than the oil that is ultimately recovered. This adds another level of inaccuracy to the oil data.

**A legitimate estimate [of oil reserves] must be based on the amount of oil being discovered and the amount of oil being produced and used. In 2003 the ratio was 1 to 6, which is one barrel of new oil discovered for each six barrels of oil consumed.**

Finally, statements about improvements in technology are often used to counter concerns about oil depletion. But technology neither finds nor creates new oil. Neither does it extract significantly greater amounts from a reservoir. What technology can do is accelerate the production of oil from a reservoir, making it, unfortunately, easier and cheaper to produce



Matthew Simmons has proposed a more accurate method of determining reserves than is currently in use.

the oil, thus depleting it faster.

As happened in the case of Shell Oil, "Proved Reserves" can fade with a stroke of the pen. A legitimate estimate must be based on the amount of oil being discovered and the amount of oil being produced and used. In 2003 the ratio was 1 to 6, which is one barrel of new oil discovered for each six barrels of oil consumed.

Furthermore, it is possible to make a much better prediction about the amount of oil in a reservoir if one has all the data. Matthew Simmons has proposed 13 measurement values which, if provided for every producing well, can be used to create a much more accurate estimate than is usually sought. Unfortunately, such data is held in confidence by oil companies and oil-producing countries.

Until these companies are required to provide all of the data for exploration and production, we will continue to receive optimistic and misleading information about this serious issue. Until then, "Proved Reserves" simply becomes another excuse to delay making the lifestyle changes which will be necessary to reach a sustainable society. ■

**This and additional publications and resources are available online at [www.communitysolution.org](http://www.communitysolution.org).**

## New Solutions

is published by Community Service, Inc. under its program, The Community Solution. Community Service, Inc., a non-profit organization, has been studying and promoting small local community for more than 60 years.

**To receive New Solutions on a regular basis**, please send your tax-deductible contribution of \$25 (or more) to P.O. Box 243, Yellow Springs, OH 45387. Your contributions will help us continue this work.

**To receive regular email communications**, send us an email at [join@communitysolution.org](mailto:join@communitysolution.org).

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## Resources

### Books on Peak Oil

**The Coming Oil Crisis**, Colin Campbell, 1997

**The Essence of Oil and Gas Depletion**, Colin Campbell, 2003

**Hubbert's Peak**, Kenneth Deffeyes, 2001

**The Party's Over**, Richard Heinberg, 2003

**PowerDown**, Richard Heinberg, summer 2004

**Saudi Arabia Oil Review**, Matthew Simmons, summer 2004

**Out of Gas – The End of the Age of Oil**, David Goodstein, 2004

### On the Web

**Speeches by Matthew Simmons:**  
[www.simmonsco-intl.com/research.aspx?Type=msspeeches](http://www.simmonsco-intl.com/research.aspx?Type=msspeeches)

**Museletter**, Richard Heinberg:  
[www.museletter.com](http://www.museletter.com)

**The End of Suburbia, a DVD:**  
[www.endofsuburbia.com](http://www.endofsuburbia.com)

**Sustainability through Local Self Sufficiency**, Folke Gunther:  
[www.feasta.org/documents/wells/contents.html?sitemap.html](http://www.feasta.org/documents/wells/contents.html?sitemap.html)

**Association for the Study of Peak Oil (ASPO):** [www.peakoil.net](http://www.peakoil.net)

### Books and Resources on Community

**The Small Community**, Arthur Morgan, 1942 (available from CSI)

**The Long Road**, Arthur Morgan, 1936 (available from CSI)

Books by Wendell Berry are recommended.

**The Land Report**, A publication of The Land Institute, [www.LandInstitute.org](http://www.LandInstitute.org)

**Communities Directory, Guide to Cooperative Living**; compiled and published by the Fellowship for Intentional Communities, (FIC), (816) 883-5545

**Communities Magazine, Journal of Cooperative Living**, published by FIC

You may also contact us through our websites: [www.communitysolution.org](http://www.communitysolution.org) and [www.smallcommunity.org](http://www.smallcommunity.org).



A program of Community Service, Inc.

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