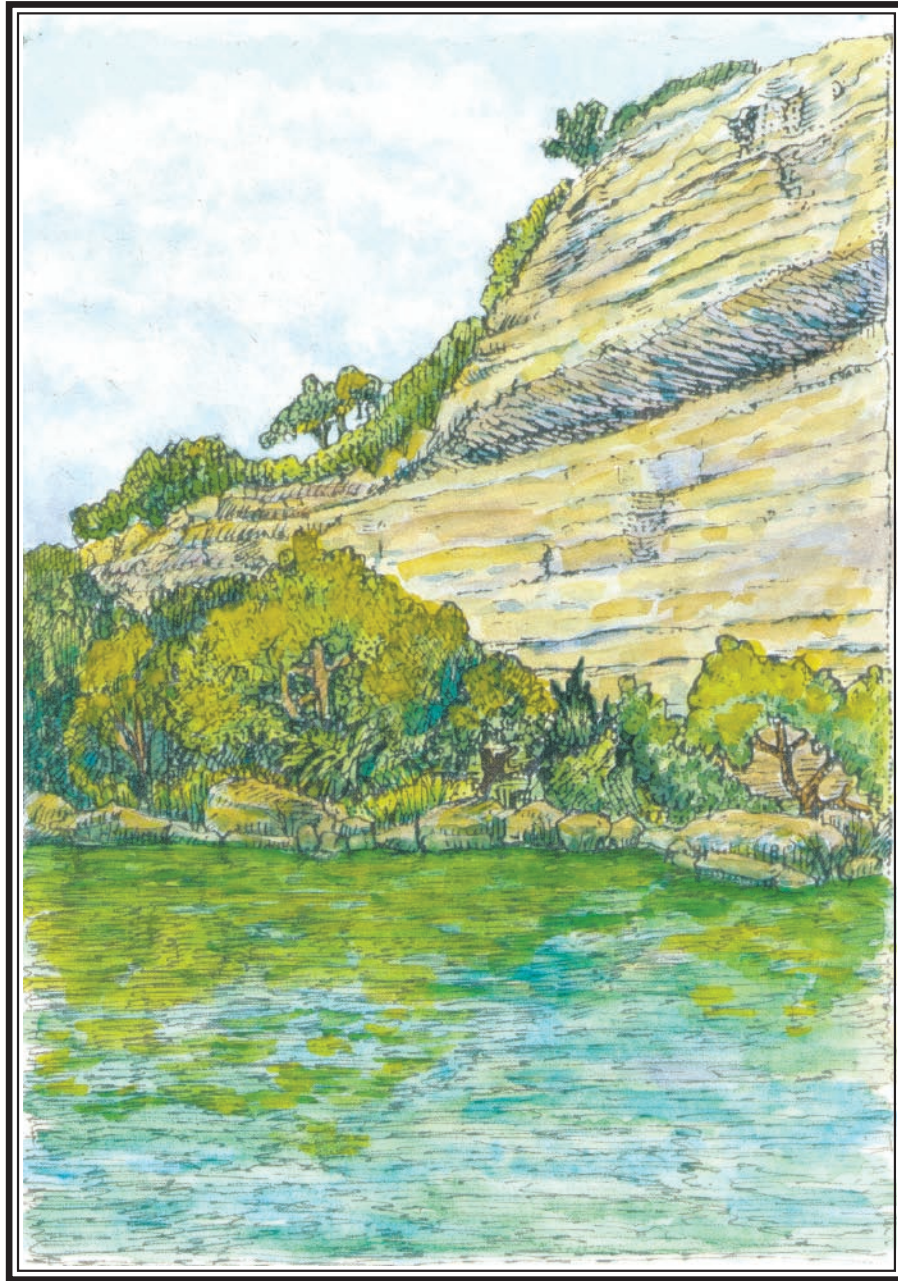


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The Austin Environmental Directory 2010

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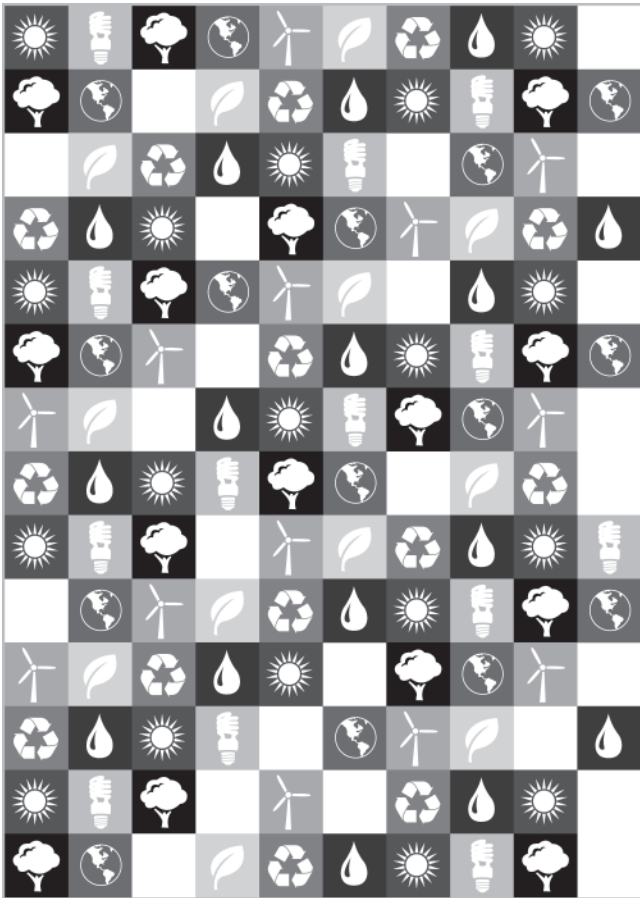
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INTRODUCTION

The *Austin Environmental Directory* is meant as a user-friendly guide to readers for learning about environmental issues, for identifying and purchasing environmental products, and for becoming involved in environmental organizations. The print version is distributed free to the Austin area. The *Directory* is also on the Internet at www.environmentaldirectory.info/.

The *Directory* is edited by Paul Robbins, a longtime environmental activist residing in Austin. He wrote about 60% of the issue, with government agencies and non-profit organizations producing sections relevant to their programs. These agencies and organizations received this space at greatly reduced cost.

Businesses in subjects that the book discusses and local environmental groups are given free listings. However, the book is supported through advertising and contributions from individuals and environmental groups.

This Year's Topics

This is the seventh issue of the *Directory* since 1995. The author has continued his theme from the 2006 *Directory* of what people will do when they run out of oil. The wrecking ball that was 2008 left lasting damage on the environment and economy. Long-term scarcities of energy, food, and materials, coupled with increased demand from a growing world population, threatens to hinder or prevent recovery.

This theme includes three stories. The first is *Synfuels and Redemption*. As high oil prices continue to threaten the transportation sector, industry and government are seriously planning alternatives fuels made from tar sands, coal, natural gas, oil shale, and biofuels. The world is facing two alarming and conflicting crises, Peak Oil and global warming. Peak Oil might demand that carbon-based synfuels be developed at a rapid pace to support the existing transportation infrastructure, while global warming would demand that even current fossil fuel use be abandoned.

A second story will discuss alternative vehicles and strategies that can be accessed by individuals now or in the near future to lower oil use and its environmental effects.

The third story is *The Zero Energy Suburb*. While this sounds like an oxymoron, technology does exist to convert the American Dream from running on fossil fuels to clean energy, with a cost that is not much higher.

Most of the information in these articles has never been reported by any other Austin publication. The new edition also includes an introduction to Austin's climate protection program, and updated or rewritten sections on recycling, green building, clean energy, regional parks, environmental groups, locally grown food, and water conservation.

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In Memory

While looking for artwork for the first Environmental Directory in 1994, I discovered a drawing of a live oak surviving on the bare edge of an escarpment. It said so much that I had to use it, and was awestruck to find that my friend Margaret Campbell Bamberger had drawn it. I had known her since the late 1970s when she was fighting lignite strip mines in Bastrop County.

*For seven issues of the *Directory*, the cover art has been drawn by her. With her passing in 2009, Central Texas lost a dedicated environmental leader and educator. She was an activist long before environmentalism was accepted by the mainstream.*

ENERGY & THE ENVIRONMENT



INTRODUCTION

The wrecking ball that was 2008 will probably be remembered in world and U.S. history as the time when multiple crises noticeably crashed into our society simultaneously. It's not like the environmental, societal, and economic circumstances that lead up to this year were any secret. But it was a time when they could no longer be ignored by even the most skillful and artful contrarians and denialists. It was also a time that caused a great deal of hardship, with forebodings that it could be even worse in the near future.

There were at least 10 dilemmas occurring simultaneously, with all of them reinforcing and worsening the destruction of the others.

- **Energy Costs** – Energy prices rocketed to record levels. Domestic oil prices averaged \$95 a barrel, 40% higher than the price only a year earlier, and about 7 times the price from 10 years earlier.**(1)** Oil soared to \$147 on the spot market!**(2)** Natural gas hit all-time high: 300% of the price in 1998.**(3)** Metallurgical coal prices also went off the charts, increasing 417% in the same time period.**(4)** These fuel prices shook the entire economy.

Energy prices cost Americans roughly \$1.2 trillion in direct costs in 2008.**(5)** Only ten years earlier, it was half a trillion when adjusted for inflation. This 130%, \$700 billion increase would:

- Buy all the food for 91% U.S. households;**(6)**
- Pay the mortgage of 29 million homes costing \$200,000 each (23% of all households in the U.S.);**(7)**
- Provide every unemployed person in America in October of 2009 with \$45,000 per year.**(8)**

There were several major reasons for this increase. They included: the increased cost for production of oil; the increased energy consumption due to industrialization in developing countries, most notably China and India; and a tight supply that allowed for a Seller's market.

- **The Greenhouse Effect** – Evidence and actual damage from man-made global warming continued to mount. Global surface temperatures, actually the lowest since the year 2000, were still among the top 10 warmest years since worldwide measurements began in 1880.**(9)** However, temperatures in 2009 “recovered,” as 2009 was tied for the second warmest year on record.**(10)** The warmest 10 years on record have all occurred between 1998-2009.**(11)** Summer sea ice was the second lowest on record, only exceeded in 2007.**(12)** Ice levels rose in 2009, but it still remained the third-lowest ice season on record.**(13)** Scientists predict that 10 or 20 years hence the Arctic will be navigable to merchant and military vessels in warm months.

2008 was also a record for tropical storms in the Atlantic, where for the first time, six consecutive tropical cyclones hit the U.S. mainland in a single season; four of these were hurricanes.**(14)**

Back at home, Central Texans continued to witness local history, as a chronic drought continued, which would set the new “drought of record” in 2009, when Lake Travis fell to only 40% of its capacity.

Fossil fuel emissions forcing this global warming leveled off in the United States due to high energy prices and problems with its economy. But they have increased globally, growing 30% between 1998-2008, with no sign of cessation.**(15)**

- **Debt Crisis** – The housing bubble that occurred earlier in the 2000 decade raised the average national price of a home 47% between 2000 and 2007.**(16)** Loans created in this time period boosted total mortgage debt in the U.S. by \$6 trillion, a 117% increase.**(17)** This was at a time when credit assessments to qualify people were all but nonexistent, and when more than half the money approved for mortgages was for refinances that often created short-term cash to owners premised on the (theoretically) increased value of the homes.

By the last quarter of 2008, 18% of all homes were “underwater,” with home values drowning below the current sales price.**(18)** This rose to 23% in by late 2009.**(19)** In specific markets in the Southwest U.S., Florida, and the Rust Belt, more than 50% of homes were underwater.**(20)** Homes lost \$6.1 trillion in value between their peak in 2006 and the end of 2008.**(21)** Sales of new homes dropped to their lowest level since 1982.**(22)** Sales of new homes per capita were at their lowest level since at least 1970.**(23)** New home sales for the first six months of 2009 were even lower.**(24)**

Foreclosures made up 20% of homes sold in 2008, and another 11% were short sales.**(25)** Foreclosures in 2008 skewed more than 1% of all mortgage holders, more

than double the rate two years earlier when homes sales peaked.(26) In the first quarter of 2009, foreclosures were almost triple the 2006 rate.(27)

While some of the increase in home prices was the result of higher construction costs, most of it rested on a bubble that was not sustainable. The way it was structured exacerbated the nation's energy problems. The high price of homes in cities drove people to look for alternatives in the suburbs and exurbs, and when gas prices rose, the cost of their commute became dearer. Moreover, the size of new houses is much larger than homes of past decades, meaning that as home utility rates went higher, there was a greater sized home to fuel.

While the general public was dealing with the economic nightmare of lax federal regulation of the banking industry, the federal government was itself leading by example. It was funding two shooting wars with deficit financing secured by tax cuts for the wealthy. Between 2000 and the end of 2009, the U.S. government increased the deficit by 123% to \$12.9 trillion, or \$107,000 for every household in the U.S. (without interest).(28) In 2008, 15% of the tax base funded the debt payments.(29) America is now the largest debtor nation on earth in terms of total amount owed.(30)

In retrospect, it can be seen that the U.S. economy in the middle part of the decade was buoyed by what was in effect two pyramid schemes of monumental proportion. As collateral damage, the massive debt has also weakened the U.S. dollar, so that the high cost of imported oil is greater in America than in countries with stronger currencies. Another unintended consequence is that China has purchased \$800 billion of the U.S. debt, possibly making it more difficult for the U.S. to extract concessions on fair trade and the environment.(31)

- Vacant Houses – While there may have been a housing boom in America in the middle of the decade, it was not, what you would say, evenly distributed. In old Rust Belt cities such as Detroit, MI, Youngstown, OH, and Pittsburgh, PA, manufacturing-based job exports caused both high unemployment and decreased population. Housing demolition of their decaying neighborhoods became a growth industry. Cities wanted to eliminate unmaintained vacant structures because they were magnets for varmints, vagrants, and crime. Youngstown in particular is piloting strategies for shrinking their service area so city services can support a smaller footprint, as its population is half of what it was 30 years ago.

On the other end of the spectrum were new suburbs in which large percentages of homes were vacant because of foreclosures and overbuilding. In the suburban markets of new Edge Cities that were once booming, vacant houses were also attracting vagrants and crime. In one suburb near Los Angeles freshly carved out of the wilderness, a family of bobcats even moved into the backyard of a vacant house to raise their young.

- Food Crisis – World food prices went up, due to both the

cost of energy used to produce it, and scarcity brought on by increased demand for more biofuels and grain-fed meat and dairy. Only 61% of world grain is consumed directly by people; 36% is animal feed, and 3% is now used for ethanol.(32)

Corn went up 72% between 2006 and 2008.(33) This was mitigated by much lower increases in other foods, so as a whole domestic food prices only went up 12%.(34) While this increase caused hardship in America, this was nothing compared to poorer countries that consume grain directly, without much or any processing. Food riots due to high prices and malnutrition made headlines in a number of developing nations.

- Balance of Payments – In 2008, net energy imports cost the U.S. \$419 billion.(35) This made up 50% of the net U.S. trade deficit in goods, which ironically caused oil to cost even more by weakening the dollar.

- Oil War – Defending our country's rights to export currency and jobs while warming the planet also came at a steep price. By the end of 2008, the Iraq War claimed 4,221 American lives, 317 lives of military from allied nations, and caused the untimely deaths of about 100,000 Iraqis.(36) In 2009, another 150 military deaths and over 4,600 civilian deaths occurred. It also cost about \$141 billion in 2008, the equivalent of a premium of \$163 per barrel of oil from the Mideast.(37) It would cost much more in interest, since the Iraq War has been paid for with deficit financing.

- Sovereign Wealth Funds (SWFs) – Perhaps out of gratitude for the jaw-dropping profits and military protection that the United States has afforded them, major oil states have returned the favor by buying shares of American business and industry, as well as making investments worldwide. There are at least 28 oil, gas, and mineral producing nations that have invested at least \$1.9-2.5 trillion in the world economy.(38) There are at least 13 other countries investing about \$1.2 trillion of financial assets and pension funds, including China.

In addition to owning bonds supporting U.S. national debt, SWFs from oil producing countries have bought shares of Apollo Management, Toll Brothers, Citigroup, Sunbelt Apartments, AMD, and the Carlyle Group. Interestingly, the SWF in Iraq has invested most of its \$8 billion in assets in U.S. debt.

While these investments are ostensibly apolitical, it is hard to imagine the owners of large companies not protecting their interests.

- Job Crisis – Domestic job losses reached frightening proportions. Between the end of 2007 and 2008, 3.6 million new people were added to unemployment.(39) By October 2009 it was 8.2 million. Added to those already without jobs, the country reached a 10.2% overall unemployment rate, the highest recorded rate since 1940.(40)

Over a quarter of these job losses were in manufacturing,

as the U.S. continued to hemorrhage industrial jobs. In 1998, there were 17.6 million jobs in this sector; in October of 2009, there were 11.7 million.(41) There were several reasons for this. They included product dumping by other countries, offshoring of American production to countries with cheap labor and poor worker protection and environmental laws, lack of domestic industrial modernization, and fair trade treaties that were nothing of the kind.

High energy costs in industries dependent on low prices were also a main reason for this decay.(42)

- The U.S. chemical industry lost 4% of its jobs since 2007 and 19% since 1998, while average salaries lost 3% of their buying power since 2007 and 9% since 1998.
- The U.S. primary metals industry lost 22% of its jobs since 2007 and 44% since 1998, while average salaries lost 8% of their buying power since 2007 and 12% since 1998.
- The U.S. paper industry lost 10% of its jobs since 2007 and 33% since 1998, while average salaries lost 3% of their buying power since 2007 and 9% since 1998.
- The U.S. auto industry is not a high-energy industry per se, but autos were responsible for about half of all the oil use in the country. One of the reasons the American auto industry lost shares in world market was that it did not manufacture energy-efficient vehicles. It lost 25% of its jobs since 2007 and 38% since 1998, while average salaries lost 1% of their buying power since 2007 and 2% since 1998.

• Cost of Commodities – The cost of construction and manufacturing materials, including construction metals, precious metals, and concrete began to soar in early 2003. Malthusian critics argued that this was an indication that the world had run out of supply and that there were too many people demanding too many resources. But much of this was caused, at least in the short term, by exceeding the limits of the world’s existing mining and industrial infrastructure. In main, China, India, and the developing world, were spending profits made in their polluting factories and sweatshops to build modern cities and power plants. In 2004, China constructed 151 square miles of government-funded building space.(43) In 2006, it brought the equivalent of a new 1,000 Megawatt coal plant online every 5 days.(44) In 2009, it produced 50% of the world’s cement and 47% of its steel.(45), (46)

And oil-producing nations were spending their profits from extorting petroleum to the incontinent developed world on skyscrapers, luxury hotels and resorts. In one case, an indoor ski-slope was built in a desert.

Between January of 2000 and mid-2008, the current-dollar cost of aluminum went up 83%; copper escalated 373%, iron ore went up 388%, and nickel went up 274%.(47) Even after this peak, combined real-dollar metal prices were still 273% higher in October of 2009 than they were at the beginning of the decade.

The theme for this issue of the *Directory* are again devoted to energy. With the exception of the massive debt problems the U.S., it is the largest economic threat the nation faces, and has profound implications for the environment. Even if we assume the will and discipline to get debt under control, the increasing cost of energy and its eventual lack of availability will continue to eat away at our economy. High energy costs may cripple whatever chance we have of a real economic recovery while destabilizing the climate literally past the ability to maintain life as we know it.

There are three stories in the theme section. The first is about a growing trend by fossil fuel industries to substitute new synthetic fuels for oil and gas. The world is facing two alarming and conflicting crises, Peak Oil and global warming. Peak Oil would mandate that carbon-based syn-fuels be developed at a rapid pace to support the existing transportation infrastructure, while global warming would demand that even current fossil fuel use be abandoned.

The second story is about alternative modes of transit. A lot of this article discusses the possibility for electric vehicles. If a large personal vehicle fleet can be maintained in a future threatened by Peak Oil and global warming (many doubt it can), electric and plug-in hybrid electric vehicles are the most likely platform in the near term that can provide an alternative. There are also resources and strategies discussed to limit or make more efficient use of personal vehicles.

A third story will discuss the concept of the “Zero Energy Suburb.” While many consider this an oxymoron, it is technologically possible to convert the suburban housing model to something far less damaging to the environment. In the near future, the economics of this will probably be favorable as well. Whether suburbs are socially desirable is another matter.

Whether alternatives can be implemented in the time period that Peak Oil and global warming demand is a scary question. Rational skeptics believe that conventional infrastructure takes decades to change, and we have not left ourselves enough time for conversion. Some students of history believe that societies only change in *response* to crisis. My hope is that both these predictions are wrong. But even if the worst happens, information about alternatives will hopefully mitigate the damage.

Paul Robbins
1/24/10

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