

Energy Crisis Newsletter

Issue #1 – May 12, 2008

If you are not interested in receiving this please feel free to email me and unsubscribe.

If you have any corrections, supplements, and information you want to share to be included in the next issue, please do advise, as I will synthesize all and include in issue #2. I chose to do this because I wanted to motivate myself to stay on top of the topic, to continue to digest media critically, and to streamline information productively so that we can all, no matter where we fall politically or emotionally on the spectrum of assessment of the Energy Crisis & Global Warming, can change our habits proactively, and immediately because only good can come for us out of education, and mindful, responsible living.

I committed myself to getting this done by May 1, and then before leaving town. I still don't feel ready to send it out...so many notes of information and topics and thoughts have not made it in here but they will the next issue. So please note this is a rough and incomplete start but it's a lot to digest even still, if you choose.

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Random FYI

Total # of Pages = 15

Please don't print – duh 🍌

I. Definitions & Basis:

Energy Crisis Related:

PEAK OIL

Also known as Hubbert's peak (named after the American geophysicist Marion King Hubbert), Peak Oil refers to the peak of the entire planet's oil production. After Peak Oil, where predictions range from now to 2025 (EndOil.org sites a range 2010 – 2037), the rate of available oil on Earth will enter a terminal decline every year. It signifies massive changes for our oil dependent societies. This theory was presented to the American Petroleum Institution in 1956 and predicted a US peak to be between 1965 – 1970; the actual peak was 1970 and a worldwide peak about 50 years after the theory's publication.

Some actual claims and text from the ICC Report itself:

OIL SUPPLY CHAIN:

EROEI: Energy returned on Energy Invested: This term is another way of addressing "net energy gain" when evaluating any energy source completely. Not all energy produced is equal. E.g.

- ⇒ Energy of a gallon of DIESEL FUEL = roughly 139,000 Btu
- ⇒ from a gallon of gasoline is 124,000 Btu
- ⇒ from a gallon of ethanol is about 80,000 Btu
- ⇒ (least Btu) Wood < Coal < Heating Oil (most Btu)

"BTU" = British Thermal Unit and is a unit for measuring energy.

The average EROEI of world oil production has been declining. Before 1950 the EROEI was more than 100:1; by 1970 it dropped to 30:1; by 2005 it averaged 10:1 as we go hunting for oil in increasingly difficult environments (deep ocean, open pit mining. EROEI continues to decline over time but is disputed or ignored by politicians, peak oil critics, and alternative energy advocates. (Source: www.oilcrash.com). Right now there are no standard definitions of how to determine EROEI (and it is not even discussed on the Department of Energy website), but if you read further, in the analysis of ALTERNATIVE ENERGY sources, you will see that there is a need to take the full cycle and consequence of an energy source into account, and some journalist and activists do this and some do not.

The following factors could be taken into account in evaluating energy sources:

- ➔ Energy production vs. consumption (analyzing the energy production process and yield)
- ➔ Energy supply chain models that calculate an estimate of energy used to research, develop, explore, produce, transport, distribute, and consume energy through the entire supply chain.
- ➔ Life Cycle EROEI model which would include co-generation, ancillary product production, waste, and impact on ecology... basically analyzing everything including LABOR and infrastructure compatibility, scaleability, reliability, safety, etc. Also WASTE byproducts should be factored in as well as the CAFE # (CAFE is defined below)
- ➔ And one should analyze the best use for an energy source – e.g. Is natural gas is good for electric power or to heat homes? If we cobble together a multi layered energy plan

utilizing sun, wind, biodiesel, crude oil, nuclear power, which is probably the best solution – it's best to evaluate as part of the whole energy policy / plan. (More in this next issue)

- See this link for an analysis of the limitations Hydrogen as an alternative energy source (addresses issues of being energy intensive – this link is to a scientific / engineering analysis: http://www.oilcrash.com/articles/h2_eco.htm)

CAFE # means What is CAFE? Corporate Average Fuel Economy (CAFE) is the sales weighted average fuel economy, expressed in miles per gallon (mpg), of a manufacturer's fleet of passenger cars or light trucks with a gross vehicle weight rating (GVWR) of 8,500 lbs. or less, manufactured for sale in the United States, for any given model year. Fuel economy is defined as the average mileage traveled by an automobile per gallon of gasoline (or equivalent amount of other fuel) consumed as measured in accordance with the testing and evaluation protocol set forth by the Environmental Protection Agency (EPA). The origin of CAFE: The "Energy Policy Conservation Act," enacted into law by Congress in 1975, added Title V, "Improving Automotive Efficiency," to the Motor Vehicle Information and Cost Savings Act and established CAFE standards for passenger cars and light trucks. The Act was passed in response to the 1973-74 Arab oil embargo. The near-term goal was to double new car fuel economy by model year 1985. <http://www.nhtsa.dot.gov/cars/rules/cafe/overview.htm>

II. Facts sheet related to Oil & Energy & Conclusions from Facts:

Source: New York Times April 20, 2008 unless otherwise indicated.

1. Current Oil Price are: \$124.50 per barrel (down from \$126 – probably down due to China's earthquake and markets being closed). Average price at the pump today is \$3.71 (for unleaded regular)(Source: MSN.com & <http://www.fuelgaugereport.com/>)
2. The U.S. burns about one quarter (25%) of the world's oil.
3. About one of the every nine barrels of the world oil goes into American gasoline tanks. [Imagine what will happen when China catches up to our level of industrialization and our standard of living).
4. The number of vehicles in China rose 7 times between 1990 and 2006 to 37 million. China has surpassed Germany and Japan to become the 2nd largest car market in the world.
5. An energy expert at the Carnegie Endowment for International Peace estimates that if the Chinese were using energy like the Americans, global energy use would double over night and 5 more Saudi Arabia's would be needed to meet the oil demand. And India is not far behind. By 2030 the two countries will import as much oil as the United States and Japan do today.
6. The United States is the only industrialized country to see its oil consumption surge since the oil shocks of the 1970s and 1980s. This is in part due to the US having some of the lowest gas prices in the world, the least fuel-efficient cars, and the lowest energy taxes (unlike Europe), and the longest commutes.
7. We all know S.U.V's get poor gas mileage (MPG = mile per gallon) but check out how regular fleets compare: Japan (46.0 MPG); European Union (43.0 MPG); China (36.0 MPG); US Cars (27.5 MPG).

8. American also drive much more annually than other populations. Japan and European Union residents drive about 7,000 + miles annually while the average American drives over 12,000 miles per year.
9. Rising prices and fears about security finally lead to Congress to approve the first increase in fuel efficiency standards in 30 years raising the average fleet-wide standards by 40% to 35 MPG by 2020. American carmakers resisted this push for years – we could have all just driven a Honda, a Mini, or a SMART car.
10. We produce about a quarter of the world's pollution (this is an old Global Warming stat).
11. America's current average per-capita share of global warming emissions is 133 pounds of CO2 per day. (TerraPass)
12. Oil companies are buying back their own stock (find source and details) *** (Benjamin Goldmann who read it in The Financial Times most likely – I'll look this up for next issue)
13. A global oil economist at UBS named Jan Stuart was quotes in the New York Times as saying "this is the market signaling a problem...there is growing difficulty to meet demand with new supplies."
14. The population of the planet is expected to grow fifty percent (50%) to nine billion (9,000,000,000) by the middle of the century. The number of cars and trucks is expected to double in the next 30 years to more than two billion (2,000,000,000) (as developing nations modernize rapidly e.g. China, India etc); and possibly more than 36,000 jetliners will be flying in the air in 20 years.
15. Hence global oil consumption will jump about 35% by 2020 according to the IEA (International Energy Agency), a leading global energy forecaster for the US and developing nations.
16. This means that oil producers will have to pump an additional 11 billion barrels of oil every year (in an industry that thinks by decades because finding and pumping and refining oil is a slow process)
17. The world's total energy demand (including all sources: coal, oil, natural gas, nuclear power as well as renewable sources such as wind, solar, and hydro power, is set to rise by 65% over the next 20 years, according to the IEA.
18. High prices are inevitable, and they will force people to conserve (e.g Europe's tax on gas leads to a conservatively consuming culture).
19. There may also be energy wars and massively escalating prices particularly because energy is used for everything and so even with massive conserving, high oil prices will drive up many other prices too ***
20. John Hess of Hess Corporation and Jeroen Van der Veer of Shell warned of a grim outlook ahead and that an oil crisis was looming..
21. Oil supplies are in decline. North Sea and Alaska are running out...Russia's surge is coming to an energy crisis
22. Because OPEC producers are seeing great revenues they are not dipping into supplies and boosting production.
23. Major oil companies such as Chevron, Exxon, BP, Mobil... are finding it hard to compete because national companies are competing. 14 of the top 20 companies are state-owned (Saudi Arabia, Russia)
24. Oil companies spent 100 billion on exploration last year, the five largest international oil companies found less oil last year than they pumped out of the ground.
25. Experts debate whether oil supplies have peaked already or will by the middle of this century. Exxon notes the resources around the globe but access being a challenge. In any case, price gets affected which affects our living standards. ***
26. BP estimates 1.2 trillion barrels of oil reserves waiting to be tapped but it is also estimate that 1 trillion of those will be used up in 30 years or less.

27. It takes 1.5 million barrels of oil just to make the plastic water bottles Americans use according to the Earth Policy Institute in Washington, plus countless barrels to transport and refrigerate. Bottled water has over taken coffee and milk sales. (NY Times August 12, 2007).

*** “The country has been living beyond its means... people don’t realize how dire the situation really is.” – Vaclav Smil, a prominent energy expert and professor.

So far it seems to me that while we have alternative energy possibilities (which I will address even more in the 2nd issue of this newsletter), none of them are scalable enough, and good enough and clean / safe enough to simply replace oil, even in combination. WE MUST CONSERVE and change our lifestyles immediately and collectively.

SOME MORE FACTS:

Source = EndOil.org

- ➔ U.S. Holds just 3% of the world’s oil reserves but consumes 25% of the world’s oil.
- ➔ What we really pay at the pump:
 - \$17.511 with the cost of defense
 - \$7.971 with subsidies (to oil companies) - **check **
 - \$3.37 average price @ the pump ** check latest**
- ➔ Oil is used in the following: fertilizer, pesticides, paint, clothing, rubber, plastics (i.e. your water bottles and other drinks), nylon, vinyl, acrylic – all these are derived from petrochemicals. For more info go to: www.endoil.org/fools_black_gold/usesofoil
- ➔ 45% of oil used in the US goes to gasoline

Regarding Alternative bio-fuel sources:

The New York Times – 9/24/2007

Corn Ethanol -> 0-3% greenhouse gas emission reduction Sugar Cane Ethanol -> 50-70% greenhouse gas emission reduction Cellulosic Ethanol -> 90+% reductions

BUT, the US subsidizes CORN

And TAXES sugar cane ethanol (from Brazil for example) at 53 cents per gallon.

Iowa is leading the nation in biodiesel production (with 42 ethanol and biodiesel refineries and 18 more plants under construction – according to the Renewable Fuel Association).

** But in 2006 Cargill biodiesel plant illegally disposed of liquid oil and gas which ran into the stream and killed fish. Even though the stuff is eatable by humans; oil and glycerin deplete oxygen upon contact with water very quickly – killing fish and birds

III. Quick Overview Regarding Global Warming:

Some Basics about Global Warming (see end of this issue for more detailed overview of countering research and claims and this will be better dealt with in the next issue – just ran out of time). Carbon dioxide and other gases warm the surface of the planet naturally by trapping solar heat in the atmosphere. This is a good thing because it keeps our planet habitable. However, by burning fossil fuels such as coal, gas and oil and clearing forests we have dramatically increased the amount of carbon dioxide in the Earth's atmosphere and temperatures are rising. We're already seeing changes. Glaciers are melting, plants and animals are being forced from their habitat, and the number of severe storms and droughts is increasing. Stats from the UN's IPCC Report (Intergovernmental Panel On Climate Change) – February 2007 [**I can send a PDF of the report to anyone who wants one**]. According to Newsweek article August 13, 2007) the report was written by more than 800 climate researchers and vetted by 2,500 scientists from 130 nations.

Some of the IPCC report's findings:

- 11 of the last 12 years rang among the hottest years since 1850
- Global temperatures have climbed 0.76 degrees since the latter half of the 19th Century and the rate of temperature increases for the last 50 years is twice that of the last 100 years.
- The global atmospheric concentration of CO₂ (carbon dioxide) -- one of the gases most responsible for the greenhouse effect – has jumped 35% since 1750, from 280 to 379 parts per million in 2005. The current value is well over the average of the last 650,000 years, as shown by ice cores drilled out of the world's glaciers. 78% of the rise can be pinned on the burning of fossil fuels, with the remaining 22% due to changes in land use.
- [It should be noted that methane and nitrous oxide (cow farts) also play a role in global warming, albeit a lesser one. Of course we could stop our steroidal beef industry.
- The number of Category 4 and 5 hurricanes has almost doubled in the last 30 years.
- The flow of ice from glaciers in Greenland has more than doubled over the past decade.
- Average temperature of the world's oceans have increased down to the depths of 3,000 meters (9,843 feet) --- the oceans have been absorbing up to 80% of the temperature increase, causing sea waters to expand and worsen sea level rise.
- Sea levels are rising at the rate of 3 millimeters per year since 1993 and rose 17 centimeters during the 20th century.
- Antarctica has seen unprecedented reduction in sea ice, dropping 8% since 1978; in summer it has dropped 22%

- At least 279 species of plants and animals are already responding to global warming, moving closer to the poles. [the complex effect on species is a topic onto itself for next time]

**It should be noted that there are scientists and politicians who contest the findings and conclusions of the IPCC report and much of the media. There is a debate about the degree of Global Warming that is happening and will happen, about the degree that humans are responsible, and about the degree of negative effects on our populations and planet as well as the costs or appropriateness of costs to address the issues. I will cover more on this topic either in any addendum or in the next issue. Below are just some highlights of what's to come. I will elaborate when I return and cite sources when not noted:

- Debate about Facts in Al Gore's Documentary An Inconvenient Truth – issue is degree of crisis, and degree to which it's generated by humans.
- Al Gore claimed that the IPCC said sea levels would rise 24 feet in the next 100 years but actually it will be 7 – 24 inches.
- Populations of Polar Bears were said to be in danger (Al Gore) but other orgs claim they doing very well.
- Re: CO2 levels and increase in temperature but actually temperature increases happened first and then CO2 levels.
- Re: Climate change: in the early 20th century there was an increase in temperature and there was a media frenzy about it. Greenland's temperature in 1920's rose 20 times faster then it is now.
- Temperature changes not necessarily bad. National Review (June 25, 2007) noted the following: Any time more CO2 is released in leads to a complicated set of effects, "some of which magnify greenhouse warming impact and others will tend to reduce it. Famously as the atmosphere heats up, polar ice caps tend to melt; this in turn causes further heating. On the other hand, more CO2 should lead to faster plant growth, this pulls CO2 out of the atmosphere and therefore reduces warming. This list of such potential effects is very long, and many of these feedback effects interact with one another. This is what makes forecasting climate a excruciatingly difficult problem". The article also notes the limitations of climate models, claims exaggerated politically motivated conclusions, far heavier costs on the economy by undergoing some of the recommended changes than are called for. More on this next time and I will also be culling from more current sources from both sides of the fence.

Re: IPCC – not all scientists and not all IPCC members agreed. Two NASA medal winning climate scientists (John Christy and Roy Spencer) did not agree that the warming of the earth was human caused had to sue to have their names removed from the IPCC report. Some scientists have been labeled "deniers" but strongly claim they are not getting money from business community. (It should be noted that "Green" is now its own industry too and that has motives). It is alleged that Bill Richardson (when Energy Secretary) has misrepresented information (I will add research in next issue – clearly I am working on assessing the sources of info – think tanks or online sites or videos paid for by Oil companies are suspect at best.

IV. Energy Some Basic Energy Conservation Tips—Reduce Your Carbon Footprint

Since at present there is no scalable alternative energy source and even a combo platter of the available “alternatives” will not yet meet the demands for energy in as efficient and affordable a way as we will need to function at the standard of living we are used to, and desire, as other people aspire... we had better start conserving and fast.

Here are some tips and their respective sources:

IN THE KITCHEN:

- Support your local farmer because then you are not supporting the energy needs of flying in and driving in produce from wherever. For Californians see www.cafaremersmarkets.com And I recommend reading Omnivores Dilemma – and you’ll also never set foot in a Whole Foods again. More on this next issue perhaps.
- Buy Fresh foods because frozen used 10 times more energy than frozen
- Avoid heavily packaged products (though in the next issue of this newsletter I may add a section about plastics packaging and a study that reportedly reveals its unique utility - I am waiting on my hubby to show me this article.
- Use a fabric bag at the market, not plastic or paper. Use fewer paper towels, in your own kitchen and in restaurants.
- Buy Organic (for your health) and also organic soils capture and store carbon dioxide at much higher
- Clean your refrigerator’s coils and give them some breathing room

IN THE HOME / OFFICE:

- Make sure your **home** is well insulated and **energy efficient**. Go to: www.energystar.gov for more info and also the local utility company can advise. Buy Energy Star labeled products: www.energystar.gov
- Turn off and unplug appliances when not in use – this can save thousands of pounds of CO₂.
- Adjust **thermostats** to save energy. Adjusting it just 2 degrees down in winter and 2 degrees up in summer could save about 2,000 pounds of CO₂.
- Switch to green power – to find out if **Green Power** is available near you go to: www.eere.energy.gov/greenpower
- Use **less hot water** by using a low flow showerhead (350 pounds of CO₂ saved) and washing clothes in warm or cold water (500 pounds of CO₂ saved per year).
- **Replace filters** on furnace or air conditioner
- For each light bulb you replace with a **compact fluorescent light bulb** you will save 150 pounds of Carbon Dioxide annually. If everyone in the US replaced just 5 bulbs we’d spare our air 1 trillion pounds of greenhouse gases.
- **Recycle**: You can save 2,400 pounds of carbon dioxide per year by recycling just ½ of your household waste. Buy Recycled.
- **Stop JUNK MAIL**: go to www.dmaconsumers.org/cgi/offmailinglist -- and there you can register with the Mail Preference Service to reduce the amount of junk

mail you get. Each year the average household receives about 1.5 trees' worth of junk mail. It costs a buck but it's worth it.

- **Don't take ATM receipts** (though if you bank at BofA you might not want to risk it ☺)
- **Stop the delivery of the PHONE BOOK.** Telephone books make up almost 10% of waste at dump sites.

ON THE ROAD / CAR & COMMUTING RELATED:

- Drive a car that at least has a high **MPG rate** (no SUVs for pete's sake) -- **** / drive an electric car if you can find one / drive a Hybrid / Use Biodiesel *** / Walk, bicycle, roller blade, and take public transportation when you can. / Work from home when possible / **Car pool.** You save 1 pound of carbon dioxide for every mile you don't drive.
- Replace filters
- Re: Tires: **properly inflated tires** improve gas mileage by up to 3%. The average American who drives about 12,000 miles annually could save about 16 gallons annually. Every gallon of gas saved takes 20 pounds of CO2 out of the atmosphere. Also keeping your car well maintained helps efficiency in energy use.
- **Don't wash your own car.** Commercial car washes use up to 100 less gallons of water to wash a car. They often recycle and reuse rinse water. If everyone who washed their own car chose to go to a professional car wash just once, up to 8.7 billion gallons of water could be saved and some 12 billion gallons of soapy, polluted water could be diverted from rivers, lakes and streams.

OTHER:

*** Plant a Tree: A single tree will absorb one ton of carbon dioxide over its lifetime.

*** Stop with the WATER BOTTLES – refill your Brita filter; carry a bottle that you refill.

*** Buy GREEN – e.g. Climate Change Chocolate – yummy! And for every chocolate bar purchased TERRAPASS will purchase 133 lbs of verified carbon offsets –

www.terrapass.com/chocolate

*** OVERALL if we reduced S.U.Vs in this country by 25%, and reduce the distance we drive by 25%, and switch 25% of the vehicles to operate on biodiesel fuel we could cut gasoline use by 30.5% (though we'd still exceed Japan and Europe in lagging in fuel efficiency) we'd save 42 billion gallons – which is significantly more than the biofuels production goal of 36 billion gallons in 2022 recently enacted by Congress. (NY Times April 20, 2008 – and NYT used Vaclav Smil's statistics re: gasoline savings and Census Bureau (commuters) stats, and Pew Center on Global Climate Change (re: mileage)

PUBLIC TRANSPORTATION:

http://environment.about.com/od/greenlivingdesign/a/public_transit.htm

Benefits of public transportation:

- **Energy independence**—According to Treehugger.com, if just one in 10 Americans used public transportation daily, U.S. reliance on foreign oil would decrease 40 percent.
- **Safety**—Riding a bus is 79 times safer than riding in an automobile, and riding a train or subway is even safer.
- **Health**—Studies have shown that people who use public transportation regularly tend to be healthier than people who don't, because of the exercise they get walking to and from bus stops, subway stations and their homes and offices.
- **Cost savings**—According to an APTA study, families that use public transportation can reduce their household expenses by \$6,200 annually, more than the average U.S. household spends on food every year.

Transportation accounts for more than 30 percent of U.S. carbon dioxide emissions. According to the American Public Transportation Association (APTA), public transportation in the United States saves approximately 1.4 billion gallons of gasoline and about 1.5 million tons of carbon dioxide annually.

Yet only 14 million Americans use public transportation daily while 88 percent of all trips in the United States are made by car—and many of those cars carry only one person.

V. Alternative Energy:

(SOURCE: WIRED MAGAZINE1)

Type of Alternative	Why it will work	Why it won't
Cellulosic Ethanol	Coverting sugar found in plant cell walls into fuel; US could reduce petroleum consumption by 30%	The enzyme required to concert cellulose biomass into sugar is still too expensive, and current pretreatment processes waste too much sugar.
Corn-based ethanol	Corn-based ethanol is cheaper to produce than gasoline, and new technologies are reducing the amount of fossil fuel required to make it.	Converting the entire US corn crop would provide just 12 percent of the nation's vehicle-fuel needs and emit only 13% less greenhouse gases.
Geothermal	An MIT report found that the US could produce 100 gigawatts of electricity by 2050 by tapping the heat found in subsurface rock.	It's hard to access that rock without inadvertently causing seismic activity. Solving the problem could cost \$1 billion.
Liquefied Coal	As the current production rate, US coal reserves will last for 200 years – and that's not counting potential reserves that we can't yet tap.	Turning that coal into liquid fuel requires vast amounts of water, an increasingly precious resource.
Nuclear	Zero-carbon-emitting next-gen reactors promise 7 to 17 percent higher efficiency than traditional plants, and they're much less likely to melt down. ** INSERT FRANCE INFO ***	Nukes are a political third rail; nobody wants a reactor in their backyard. And there's no fully safe place to put spent fuel. ** address Gore / Left vs France**
Solar	A coming silicon glut will drive down the price of photovoltaic cells. New, thin-film technology could make the method even cheaper.	Highly refined silicon panels may never be as inexpensive or productive as fossil fuels. Without continued government subsidies solar would die **Insert Carter vs Regan and other info regarding subsidies**
Tidal	Underwater generators can harness the power of a tidal motion, potential costing less than traditional dams and causing less ecological harm	Only 40 sites on earth offer tidal ranges greater than 16 feet, the minimum to make electricity. And those will work for only 10 hours a day.
Wind	Longer, lighter blades have helped double turbine efficiency. Wind at next-gen offshore installations is 90 percent more powerful than on land.	Where wind is, people aren't. No one has come up with economical transmission and storage solutions for this far-flung, intermittent power supply

VI. SPECIFIC STATS and DISCUSSIONS regarding ETHANOL and BIODIESEL as ALTERNATIVES:

Skepticism / Criticism & Defense of BioDiesel & Ethanol as alternative energy solutions:

It should be noted that when Bush called for 20% decrease in gasoline use over the next decade and to have ethanol blended into motor fuel, as much as 35 billion gallons by 2017 – some were warning of spiking food costs and serious economic consequences to having farm land reallocated to service fuel and not food, leaving consumers to pay more – whereas they believe that increased gas prices lead to market corrections (i.e. decline in consumption). (Arizona Star August 17, 2007)

More recently in Time Magazine's GREEN issue

Countering Time Magazine's position on BioDiesel etc..

The article was called The Clean Energy Scam by Michael Grunwald (March 27, 2008)

It addresses the destruction of Amazon (Brazil), increase in crop prices therefore increase in food prices (e.g. Pakistan and Mexico emergencies and which the UN world food program which asked for \$500 million and referred to this situation as a "global emergency". He also writes that BioDiesel is being used as a political tool, and he covers issues around government subsidies. The article also addresses negative ramifications to the environment (increase in Global Warming because of reduction of trees and grass, destruction of wetlands, forests, grasslands that store enormous amounts of carbon.) Additionally the article addresses problems in scale (energy efficiency total costs (based on the thinking addressed in the analysis at the beginning of this newsletter, and also the article covers biodiesel's emissions issues. I will cover much more on this top (various sides of the issue and various analyses next newsletter).

Link to article itself:

<http://www.time.com/time/magazine/article/0,9171,1725975,00.html>

And then the opposite p.o.v.

From the International Herald Tribune:

Bring on the right biofuels

By Roger Cohen International Herald Tribune

Wednesday, April 23, 2008

(I took notes in this and intended to summarize but I need to haul ass outta here so here is the article in full and next time I'll do a better job summing up.) →

"Fads come fast and furious in our viral age, and the reactions to them can be equally ferocious. That's what we're seeing right now with biofuels, which everyone loved until everyone decided they were the worst thing since the Black Death. Where fuel distilled from plant matter was once hailed as an answer to everything from global warming to the geostrategic power shift favoring repressive one-pipeline oil states, it's now a "scam" and "part of the problem," according to Time Magazine. Ethanol has turned awful. The supposed crimes of biofuels are manifold. They're behind soaring global commodity prices, the destruction of the Amazon rain forest,

increased rather than diminished greenhouse gases, food riots in Haiti, Indonesian deforestation and, no doubt, your mother-in-law's toothache. Most of this, to borrow a farm image, is hogwash and bilge. I'll grant that the fashion for biofuels led to excess, and that some farm-to-fuel-plant conversion, particularly in subsidized U.S. and European markets, makes no sense. But biofuels remain very much part of the solution. It just depends which biofuels. Before I get to that, some myths need dispelling. If Asian rice prices are soaring, along with the global prices of wheat and maize, it's not principally because John Doe in Iowa or Jean Dupont in Picardy has decided to turn yummy corn and beet into un-yummy ethanol feedstock. Much larger trends are at work that dwarf the still tiny biofuel industry (roughly a \$40 billion annual business, or the equivalent of Exxon Mobil's \$40.6 billion profits in 2007). I refer to the rise of more than one third of humanity in China and India, the disintegrating dollar and soaring oil prices. Hundreds of millions of people have moved from poverty into the global economy over the past decade in Asia. They're eating twice a day, instead of once, and propelling rapid urbanization. Their demand for food staples - and once unthinkable luxuries like meat - is pushing up prices. At the same time, the rising price of commodities over the past year has largely tracked the declining parity of the beleaguered dollar. Rice prices have shot up in dollar terms, far less against the euro. Countries like China are offloading depreciating dollar reserves to hoard stores of value, like commodities. Food price increases are also tied to \$120 oil. Fossil fuels are an important input in everything from fertilizer to diesel for tractors.

Another myth that needs nuking is that the Amazon rain forest is being destroyed to make way for Brazilian sugar-cane ethanol. Almost all viable cane-growing areas lie hundreds of miles from the rain forest. Brazil has enough savannah to multiply its 3.5 million hectares of cane-for-ethanol production by ten without going near the Amazon ecosystem. Brazilian rain forest is burning, as it long has, for a complex mix of economic reasons. Brazil's successful ethanol industry - 80 percent of new cars run on ethanol or gasoline and all gasoline comprises 25 percent biofuel - is not one of them. The danger in all this anti-biofuel hysteria is that we're going to throw out the baby with the bath water. Those hundreds of millions of Chinese and Indians who are now eating more will be driving cars within the next quarter-century. What that will do to oil prices is anybody's guess, but what's clear enough is that ethanol presents the only technically and economically viable alternative for large-scale substitution of petroleum fuels for transport in the next 15 to 20 years. It's not a panacea but it's a necessary bridge to the next technological breakthrough.

The question is: which ethanol?

Right now, the biofuel market is being grossly distorted by subsidies and trade barriers in the United States and the European Union. These make it rewarding to produce ethanol from corn or grains that are far less productive than sugarcane ethanol, divert land from food production (unlike sugarcane), and have environmental credentials that are dubious. What sense does it make to have a surplus of environmentally-friendly Brazilian sugar-based ethanol with a yield eight times higher than U.S.

corn ethanol and zero impact on food prices being kept from an American market by a tariff of 54 cents on a gallon while lowan corn ethanol gets a subsidy?

"It would make a lot more sense to drop the tariff, drop the subsidy, and allow Brazilian ethanol into the United States," said Philippe Reichstul, the chief executive of a biofuel company in So Paulo. "Pressure on U.S. land will be slashed." The United States and Europe should maintain their biofuel targets - a European plan for renewable fuels to supply a tenth of all vehicle fuel by 2020 is under pressure - while rethinking the policies that favor the wrong biofuels. The real scam lies in developed world protectionism and skewed subsidies, not the biofuel idea.

VII. Information Resources:

1. California State Assembly
2. California Climate Change Portal - www.climatechange.ca.gov
3. California Energy Commission: www.energy.ca.gov
4. U.S. Department of Energy: The U.S. Department of Energy Office and Renewable Energy Website has a great collection of resources on choosing and buying green power - Green Power www.eere.energy.gov/greenpower - Also see: www.powerscorecard.org
5. International Council for Local Environmental Initiative www.iclei.org
6. Al Gore's "An Inconvenient Truth" site: www.climatecrisis.net & <http://www.climatecrisis.net/thescience/>
7. The Green Book: The Everyday Guide to Saving the Planet One Simple Step at a Time - www.readthegreenbook.com
8. www.npr.org -- an ongoing resource for dialog and reporting on these issues
9. www.EndOil.org -- and also find EndOil on Facebook: <http://www.facebook.com/profile.php?id=506836633>
10. Flex Your Power www.fypower.org for SoCal residents.
11. www.green-e.org & www.recs.org -- Green Tags are renewable energy certificates and even when green power is not available, you can subsidize the development and production of renewable energy.
12. Make these topics a GOOGLE NEWS search.
13. [Www.fieldsofuel.com](http://www.fieldsofuel.com) -- the site related to the Sundance Selection documentary -- focuses on BioDiesel and Alternative Energy
14. <http://www.climatecrisis.net/thescience/>
15. www.oilcrash.com
16. www.heartland.org -- this site is loaded with arguments against the prevailing thoughts about Global Warming. Also National Review (www.nationalreview.com) is a well-written conservative monthly that publishes articles going against Al Gore and the Green movement's research / claims.

And I'll have more next time....

VIII. What's hopefully going to make it into the next issue:

1. A synthesis of all my corrections and updates on this issue and most of all updates, comments, criticisms and corrections from all of **you**
2. Some information about the Electric Car– regarding the ones that existed in California and that are controversial in Canada (see The Economist May 3, 2008 issue page 47 and the documentary Who Killed the Electric Car).
3. Summary of the study about plastic packaging that was referenced earlier (above)
4. Architectural and Design Energy Saving Tips from Dwell magazine that are very in depth for those building and/or remodeling their own homes.
5. Info from Cradle-to-Cradle
6. Eco-tecture
7. Cap n' Trade system – an analysis of what Finland and other countries are doing and does it work / make sense
8. Further analysis of ENERGY ALTERNATIVES (BioDiesel, Nuclear, Wind, Solar, etc)
9. Grease piracy from restaurants (for fuel / energy purposes)
10. Abu Dabi's emerging Carbon neutral city
11. Europeans' feelings about BioDiesel subsidies
12. More on Energy policy (Federal and California)
13. Indiana's experiment with repealing the gas tax (supported by Obama) – OR does not agree with this.
14. New drilling for oil in Los Angeles (SoCal being largest oil producing region in the US.)

IX. Random FYI b/c I cannot help myself:

- a. Renzo Piano (the Architect) has been working on a Greenifying (my term) the California Academy of Sciences in San Francisco that is allegedly going to be the world's largest eco-friendly public building and bucking for a platinum LEED green-building certification. Budget is \$484 million and relies on recycled materials, boasts a living roof, maximizes sun illumination and waster conservation (Wired Magazine, August 2007).
- b. Ecohangers: hangers that advertise Movies or TV (targeted marketing) – these are allegedly 100% recycled and recyclable and will help replace 3.5 billion wire hangers that end up in US landfills. www.hangernetwork.com

THE END

Energy Crisis Newsletter

Issue #2

August 3, 2008

Hello Greenatrons. This is Issue #2 of the Energy Crisis Newsletter. If you have not previously received / read Issue #1 please refer to www.NewAmericanVision.com and you can download Issue #1 which defined and summarized “Peak Oil”, some of the Climate Change / Global Warming topics and debate including the UN Report, Alternative Energy sources and debates; tips on reducing ones carbon footprint; and information and resource links. This issue addresses some topics that inform energy policy, e.g. Cap and Trade, Carbon Tax, etc so for issue #3 I will compare the candidates’ energy policy platforms and track records.

In #2, this issue:

- I. News about ‘Gang of Ten’ forging compromise energy bill before Senate recess
- II. A few random Tid Bits (Coco-Cola’s Hybrid fleet, Greenifying American hotels, Abu Dhabi’s Emission Free Zone)
- III. An overview and analysis of The Carbon Tax & Cap and Trade ideologies / discussions.
- IV. A little about Cradle-to-Cradle solutions
- V. A tad of what American Petroleum Industry lobby has to say

In the next issue (#3): About the “Electric Car”, an overview of the candidates platforms and more current debate status with respect to energy, global warming, and economic and demographic ramifications; more about Alternative Energy (addressed in issue #1) & the nuclear energy debate, more on Green Architecture & Design; Green college campuses.

I. NEWS:

A bipartisan group of Senators calling themselves the 'gang of 10' were finally able to package a compromise bill on Friday aimed at breaking the persistent deadlock in the Senate over energy issues. On one side are Republicans that have remained in lock-step with President Bush’s chiding Democratic opposition to lifting the ban on oil exploration and development offshore and in the Arctic National Wildlife Refuge (ANWR); while Democrats have resisted such measures, favoring instead that energy companies pursue oil development in areas for which they already hold federal leases, selling oil from the Strategic Petroleum Reserve, and providing more incentives for renewable energy.

The 'Gang of 10', headed by Democratic Senator Kent Conrad of North Dakota and Republican Senator Saxby Chambliss of Georgia introduced the legislation, just hours before Congress left town on their August recess, in hopes that it will break the stalemate and bring forth progress in federal energy policy.

The bill will require opening additional areas for development in the Gulf of Mexico and allow drilling off the coasts of Virginia, North Carolina, South Carolina, and Georgia, incumbent on approval from those states. Any drilling activity approved by the states would be done at least 50 miles from shore. A commission would also be created recommending areas for leasing in the future.

In compromise to the offshore drilling proposal, the bill provides billions of dollars of research and development money to assist US automakers in achieving the goal of transitioning 85% of all new vehicles to run on alternative, non-petroleum based fuels within 20 years. The Senators propose paying for the spending by eliminating \$30 billion in tax breaks for energy companies and requiring that the federal government get its cut of revenue from Gulf of Mexico oil leases. U.S. consumers will receive tax breaks up to \$7500 for buying vehicles that run on alternative fuels.

A very important element of the legislation is the extension of tax breaks for renewable energy development and energy efficiency to 2012, something congress has thus far been unable to do in this session. Allowing these tax incentives to expire at the end of the year will mean yet another setback for sustainable energy development so desperately needed.

As with any compromise, few are happy with all elements of the bill. Republican Mel Martinez wants the bill to address drilling in ANWR and oil shale production in the west. Florida Senators object to the proposal to open up more areas in the Gulf of Mexico without the state's input.

Nonetheless, the bill hammered out by the Gang of 10 likely represents this Congress' last, best attempt at breaking the intransigence before the November elections. Intransigence fostered, in my view, largely by polarization from the White House, like an impudent teenager not getting his way.

Senate Majority leader Harry Reid said he will support the bill, though he does not agree with all the of its proposals:

'I am hopeful this plan can begin to break the current legislative stalemate on the Senate floor.'

So are we.

The Senate will debate the legislation after they return from their five-week break.

II. Tid Bits:

Source: The Week (a weekly print & online aggregator of news, covering politics (left / right), literature, art, music, film, tech/gadgetry, real estate, etc) – August 8th Issue

- a. Coca-Cola this week rolled out 10 Hybrid trucks to cover delivery to routes in Florida. It's the first wave of what will eventually be a 142-truck fleet of hybrids. Compared to conventional trucks, the \$85,000 hybrids cut fuel consumption by 37% and emissions by 32 percent. (The Miami Herald)
- b. High gas prices are putting a damper on the music scene, as many bands have shortened or canceled their US tours. "All the money from your shows is just going to fill the gas tank," says Jason Reynolds, who mages British punk band Forward Russia. (Los

Angeles Times)

- c. Check out the new Sakku Traveler Bag – this messenger bag not only houses your BlackBerry, laptop, and other tech gear but sucks in solar power to keep gadgets “alive when you go off the grid”. Price \$459 – www.Sakkuus.com (Men’s Journal).
- d. Finally American hotels are imitating Europe’s energy saving key power switch system in hotels. E.g. The Jane Hotel in NYC has a master key switch that helps save energy b/c lights are automatically turned off when one is not in the room. Some hotels (such as the Starwood hotels which own Westin and Sheraton) are also greenifying a tad and installing dual-flush toilet which allows for lighter flushing modes for water savings and to inspire more Green mindfulness in hotel guests. (The New York Times, August 3, 2008)
- e. On April 22 Mayor Antonio Villaraigosa signed into law a new “green” building ordinance for the City of Los Angeles that requires all new construction and rehabilitation projects over 50,000 square feet to meet the criteria for basic LEED® certification. Administered by the U.S. Green Building Council, LEED (Leadership in Energy and Environmental Design) is an independent rating system for design, construction, and operation of energy-efficient buildings based on a scoring system. It should be noted that historic preservation is not considered to meet these criteria and thus the National Trust for Historic Preservation has been critical (however this aspect falls out of the scope of this newsletter) (Los Angeles Conservancy News – July/August 2008 issue).
- f. Abu Dhabi’s Emission Free Zone: MIT-Supported Energy Institute at Center of Abu Dhabi’s Dream City – July, 10, 2008

During the last academic year, the entire faculty of a brand new university has enrolled at MIT, immersing themselves in the institute’s culture, values, and way of doing research. They are the staff of the [Masdar Institute of Science and Technology](#) in Abu Dhabi, which will admit its first post-graduate students in 2009. The institute is just one of the components in the Arab emirate’s huge Masdar initiative, set up by the crown prince, Sheikh Mohammed Bin Zayed Al Nahyan, with \$15 billion in seed money. (The word “masdar” is Arabic for “the source.”)...The institute’s campus will be at the center of the new [Masdar City](#), a town planned for 50,000 inhabitants that is being built from scratch and where emissions of carbon oxide and other pollutants are to be kept as close to zero as possible. That means streets shadowed from the burning sunlight by photovoltaic panels, recycling of waste water, and new personal transport systems instead of cars. All power is to be produced from solar and wind energy... “The Abu Dhabi government wants to make the transition from a natural resource based economy to a knowledge based economy—but not get out of the energy market,” says professor Fred Moavenzadeh, who heads the MIT Technology Development Program. “They see some major shift in their economy where oil may become a liability, not an asset, due to carbon dioxide emissions. They want to be in the market for clean, sustainable energy.” The Masdar Institute will be a private, not a state, university for graduate students only, according to Moavenzadeh. Students will spend more than half of their time doing research. MIT is supporting the institute because of its commitment to science and technology education worldwide. Plans call for Masdar City to be ready for its first inhabitants next year—at the same time as the Masdar Institute opens its doors, in other words—and fully constructed by 2016. It is located inside a newly established [economic free zone](#) east of downtown Abu Dhabi (see Google Earth image above; click for a larger version), with an area of close to 1,500 acres. Another component of the initiative is the Masdar Clean Tech Fund, a \$250 million venture capital fund for investments in cleantech, financed both by the Abu Dhabi Future Energy Company, which is leading the Masdar City project, and foreign investors like Credit Suisse and Siemens.

III. AL GORE'S CARBON-FREE VISION, the CARBON TAX, and CAP AND TRADE analysis:

Al Gore's proposal is to abandon all carbon-based electricity in ten (10) years. He announced this in Washington D.C. at the end of last month. His vision is to do away with coal-fired plants that generate energy and instead for our country to run on Wind, Solar, and Geothermal sources.

Press Reaction: The Washington Post & The New York Times noted that only 3% of the nation's electricity is generated this way but as *The Washington Times* put it: "maybe it's because Americans would like their leaders to finally do something about the nation's energy crisis. For nearly eight years, Bush, Cheney, & Co. have thrown billions in subsidies to the oil industry, and proposed drilling more wells. All that's produced is \$4.25 gas. Voters say they hate gimmicks and they want bold solutions. Well Gore is testing that proposition."

National Review noted that it would take \$3 trillion dollars to see this take place and also that Gore did not account for the days when wind does not blow and sun does not shine (though I would think that technology would store energy but I need to look into that for next time). Toronto's *National Post* commented: "meanwhile Gore lives in a 10,000-square-foot Tennessee mansion that produces the carbon footprint 20 times that of the average American home." He and his retinue arrived for his speech in "two Lincoln Town Cars and a full size SUV."

OR Note: in issue #3 I will try to continue what we did in #2 and analyze economic and demographic impact and feasibility of alternative solution proposals as well as more complete environmental impact of reducing carbon emissions – I am presently gathering more current coverage. But to just give a sample, The Economist in June 2008 had an analysis of the Kyoto protocol's CDM scheme (Clean Development Mechanism) in which Western developed nations finance carbon capture initiatives in developing economies / countries (e.g. China & India) but how ultimately the systems in place and / or being debated for initiation will not sufficiently impede carbon emissions in the developing world, and in some ways financially punish it, and also that without properly managing the increasing carbon emissions in the developing nations, any curbing we do in the West will be futile in the face of that. There will be more on this in issues to come as I gather more and more current analysis and information.

AN ANALYSIS OF THE CARBON TAX and CAP & TRADE:

From: www.carbontax.org

Introduction

What's A Carbon Tax?

A carbon tax is a tax on the carbon content of fuels — effectively a tax on the carbon dioxide emissions from burning fossil fuels. Thus, **carbon tax** is shorthand for **carbon dioxide tax** or **CO₂ tax**.

Carbon atoms are present in every fossil fuel — coal, oil and gas. The bond between hydrogen and carbon atoms is the primary source of energy from fossil fuels and the primary source of the heat released in fuel combustion. Essentially all carbon atoms are converted to CO₂ when the fuel is burned. Carbon dioxide, an otherwise non-lethal and innocuous gas, rises in the atmosphere and remains resident there, trapping heat re-radiated from Earth's surface and

causing global warming and other harmful climate change. In contrast, non-combustion energy sources — wind, sunlight, falling water, atomic fission — do not convert carbon to carbon dioxide. Accordingly, a carbon tax (or CO₂ tax) is effectively a tax on the use of fossil fuels, and only fossil fuels.

The carbon content of every form of fossil fuel, from anthracite to lignite coal, from residual oil to natural gas, is precisely known. So is the amount of CO₂ released into the atmosphere when the fuel is burned. A carbon tax thus presents few if any problems of documentation or measurement. Administering a carbon tax should be simple (more details are available on the website); utilizing existing tax collection mechanisms, the tax would be paid far “upstream” (e.g., at the point where fuels are extracted from the Earth and put into the stream of commerce, or imported into the U.S.). Fuel suppliers and processors would pass along the cost of the tax to the extent that market conditions allow.

Per unit of energy (or Btu), natural gas emits the least CO₂ of any fossil fuel when burned, and coal the most, with petroleum (oil) products such as gasoline occupying the middle range. Generally, a Btu from coal produces 30% more carbon dioxide than a Btu from oil, and 80% more than from natural gas. A carbon tax would follow these proportions, taxing coal somewhat more heavily than petroleum products, and much more than natural gas.

To the extent carbon is included in a product such as plastic, but is not burned, that carbon will not be taxed. Similarly, to the extent the carbon used to produce energy is permanently sequestered rather than released into the atmosphere, that carbon will not be taxed or a tax credit will be provided.

Very little taxation of carbon is presently in place in the world (see [this page](#)). Nevertheless, a large and growing number of economists, policy-makers and concerned citizens regard stiff carbon taxes as essential for combating the climate crisis that gravely threatens humankind and other living things. For list of SUPPORTERS (Economist, Scientists, and Politicians) go to: <http://www.carbontax.org/who-supports/scientists-and-economists/>

Why A Carbon Tax?

The rationale for a carbon tax is simple: the levels of CO₂ already in the Earth’s atmosphere and being added daily are destabilizing established climate patterns and threatening the ecosystems on which we and other living beings depend. Very large and rapid reductions in the United States’ and other nations’ carbon emissions are essential to reverse runaway climate change and avert resulting severe weather events, inundation of coastal areas, spread of diseases, failure of agriculture and water supply, infrastructure destruction, forced migrations, political upheavals and international conflict.

A carbon tax must be the central mechanism for reducing carbon emissions. Currently, the prices of gasoline, electricity and fuels in general include none of the costs associated with devastating climate change. This omission suppresses incentives to develop and deploy carbon-reducing measures such as energy efficiency (e.g., high-mileage cars and high-efficiency heaters and air conditioners), renewable energy (e.g., wind turbines, solar panels), low-carbon fuels (e.g., biofuels from high-cellulose plants), and conservation-based behavior such as bicycling, recycling and overall mindfulness toward energy consumption. Conversely, taxing fuels according to their carbon content will infuse these incentives at every chain of decision and action — from individuals’ choices and uses of vehicles, appliances, and housing, to businesses’ choices of new product design, capital investment and facilities location, and

governments' choices in regulatory policy, land use and taxation.

A carbon tax won't stop global climate change by itself — other, synergistic actions are required as well. But without a carbon tax, even the most aggressive regulatory regime (e.g., high-mileage cars) and “enlightened” subsidies (e.g., tax credits for efficiency and renewables) will fall woefully short of the necessary reductions in carbon burning and emissions.

No Tax Increase? How?

A carbon tax should be revenue-neutral. Revenue-neutral means that little if any of the tax revenues raised by taxing carbon emissions would be retained by government. The vast majority of the revenues would be returned to the public, with, perhaps, a very small amount utilized to mitigate the otherwise negative impacts of carbon taxes on low-income energy users.

Two primary return approaches are being discussed. One would rebate the revenues directly through regular (e.g., monthly) equal dividends to all U.S. residents. In effect, every resident would receive equal, identical slices of the total revenue pie. [Just such a program has operated in Alaska](#) (← that was a link) three decades, providing residents with annual dividends from the state's North Slope oil revenues.

In the other method, each dollar of carbon tax revenue would trigger a dollar's worth of reduction in existing taxes such as the federal payroll tax or state sales taxes. As carbon-tax revenues are phased in (with the tax rates rising gradually but steadily, to allow a smooth transition), existing taxes will be phased out and, in some cases, eliminated. This “tax-shift” approach, while less direct than the dividend method, would also ensure that the carbon tax is revenue-neutral.

Each individual's receipt of dividends or tax-shifts would be independent of the taxes he or she pays. That is, no person's benefits would be tied to his or her energy consumption and carbon tax “bill.” This separation of benefits from payments preserves the incentives created by a carbon tax to reduce use of fossil fuels and emit less CO₂ into the atmosphere. Of course, it would be extraordinarily cumbersome to calculate an individual's full carbon tax bill since to some extent the carbon tax would be passed through as part of the costs of various goods and services.

Revenue-neutrality not only protects the poor (see next section), it's also politically savvy since it blunts the “No New Taxes” demand that has held sway in American politics for over a generation. Returning the carbon tax revenues to the public would also make it easier to raise the tax level over time, a point made nicely by McGill University professor Christopher Ragan in a [2008 Montreal Gazette op-ed](#).

Softening The Impact

A carbon tax, like any flat tax, is regressive — by itself. However, the regressivity of a carbon tax can be minimized, and perhaps eliminated altogether, by keeping the tax revenue-neutral in a way that protects the less affluent.

The operative fact is that wealthier households use more energy. They generally drive and fly more, have bigger (and sometimes multiple) houses, and buy more stuff that requires energy to manufacture and use. As a result, most carbon tax revenues will come from families of above-average means, along with corporations and government.

That is why the two “return” approaches discussed above — carbon dividends or tax-shifting — can turn the carbon tax into a progressive tax. Because income and energy consumption are strongly correlated, most poor households will get more back in carbon dividends than they will

pay in the carbon tax. The overall effect of a carbon tax-shift could be equitable and perhaps even “progressive” (benefiting lower-earning households).

Cap-and-Trade Problems

A tax on carbon emissions isn't the only way to “put a price on carbon” and thereby provide incentives to reduce use of high-carbon fuels. A **carbon cap-and-trade system** is an alternative approach supported by some prominent politicians, corporations and mainstream environmental groups.

CTC has no ideological animus against cap-and-trade systems. In fact, the U.S. *sulfur dioxide* cap-and-trade system instituted in the early 1990s deserves some of the credit for efficiently reducing acid rain emissions from power plants. However, the scale of a *carbon* trading system — it would be up to 100 times larger than that for sulfur — combined with the lack of readily available “technical fixes” for filtering or capturing CO₂, appear to rule out the sulfur cap-and-trade system as a model for carbon.

We regard a carbon tax as superior to a carbon cap-and-trade system, for five fundamental reasons:

Carbon taxes will lend predictability to energy prices, whereas cap-and-trade systems will do little to mitigate the price volatility that historically has discouraged investments in less carbon-intensive electricity generation, carbon-reducing energy efficiency and carbon-replacing renewable energy.

Carbon taxes can be implemented much sooner than complex cap-and-trade systems. Because of the urgency of the climate crisis, we do not have the luxury of waiting while the myriad details of a cap-and-trade system are resolved through lengthy negotiations.

Carbon taxes are transparent and easily understandable, making them more likely to elicit the necessary public support than an opaque and difficult to understand cap-and-trade system.

Carbon taxes can be implemented with far less opportunity for manipulation by special interests, while a cap-and-trade system's complexity opens it to exploitation by special interests and perverse incentives that can undermine public confidence and undercut its effectiveness.

Carbon tax revenues can be rebated to the public through dividends or tax-shifting, while the costs of cap-and-trade systems are likely to become a hidden tax as dollars flow to market participants, lawyers and consultants.

See [our Tax vs. Cap-and-Trade page](#) for more.

What About China?

The imminence of China's leap-frogging the U.S. as the World's #1 annual carbon emitter — it may happen as early as this year or next — is being cited to defend American inaction on carbon reductions. This stance ignores several central points.

For one thing, the U.S. will continue to be the world's biggest contributor to global climate change long after China, or even India, surpasses us in annual emissions. That's because carbon dioxide molecules, once emitted, remain “resident” in the atmosphere for approximately a century. Considering the many decades in which America's carbon emissions dwarfed everyone else's, of the CO₂ now warming Earth, more than three times as much is the product of American emissions as Chinese emissions. Based on present trends, the earliest that China will surpass the United States as the leading source of CO₂ is mid-century, i.e., around 2050.

(See Slideshow, slide #8.)

Second, the United States will continue to dump the most CO₂ into the atmosphere on a per capita basis for years to come. The average American is responsible for creating as much CO₂ in a day as do people in developing countries in an entire workweek.

Third, just as corporations here use China's inaction on carbon to justify U.S. inaction, so too are industry and government in China using our temporizing on carbon to rationalize theirs. The way out of this "alliance of denial," as [The New York Times](#) terms it, is to stop delaying and start acting. Breaking this cycle should be easier for the United States, insofar as our per capita use of energy (and emissions of carbon) is many times greater than China's, and given our well-developed political and administrative institutions.

Last, while it is true that only concerted action by all the world's nations and peoples can meet the climate crisis head-on, it is equally true that every action that reduces carbon emissions helps protect and stabilize climate. The injunction that the perfect must not become the enemy of the good has never been so apt as it is here and now, in Earth's climate emergency.

Debunking The Myths (eight misconceptions about carbon taxes put to rest; an excellent primer)

Myths

The entrenched power of the fossil-fuel industry and its political backers isn't the only thing standing in the way of climate-saving carbon taxes. Outmoded ideas and enduring myths about energy use and taxes are also a factor.

This page describes and dissects some of these misconceptions. Please [send us](#) your own favorite fallacies about carbon taxes. Ditto your suggestions or criticisms of ours.

Myth #1. New taxes on carbon emissions or energy will hurt the poor and middle class.

Who says? Some low-income advocates, some civil rights groups, some conservatives masking as populists.

Rebuttal: The wealthy use more energy by far. For example, for every gallon of gas used by the poorest quintile (20%) of households, the richest quintile use three to four gallons. (See [Slideshow](#), Slide #26.) The same holds for electricity, jet fuel, even diesel that fuels the trucks that deliver goods. Energy taxes can therefore be made progressive, i.e., beneficial to people of below-average means, by redistributing the tax revenues equally to all. As an alternative, the carbon tax revenues could be directed to "tax-shifting" -- reducing regressive taxes such as state sales taxes and federal social security check-offs. (See our Issues page, [Managing the Impacts](#).) Energy-efficiency measures can be targeted to subsets of the population that stand to be harmed, such as the rural poor who must drive long distances for work. What's *really* regressive is the ongoing *laissez-faire* rises in fuel prices, not a penny of which is rebated to the public. CTC is committed to ensuring that carbon taxing is progressive, not regressive.

Myth #2. Energy taxes won't change habits -- after all, high gas prices haven't cut usage.

Who says? An odd collection of groups and individuals, including former Sierra Club "CAFE" (car fuel-economy) lobbyist Dan Becker ("Even as gas prices have doubled and trebled over the past several years, we see little change in driving behavior," [Becker told the New York Times](#) in October, 2006.)

Rebuttal: Three points are key. First, until very recently, the rise in gasoline prices wasn't nearly

as steep as commonly believed. The U.S. average inflation-adjusted pump price in 2007 was only 54% higher than the 2003 price, not 100% or 200% higher. Second, much of the increase was masked by *price volatility*. As we showed [here](#), gas prices fell almost as often on a month-to-month basis as they rose during that period, masking the upward trend and convincing millions of Americans that prices would head south soon enough to make adjustments unnecessary. Third, use of gasoline and other energy is heavily driven by economic activity, and the U.S. economy expanded vigorously over those 4 years. Thus, the flattening in gasoline use during the recent expansion (up just 1.0% a year while GDP grew at 2.9% annually) demonstrates price elasticity. Price-responsiveness grows over longer periods, as households have opportunities to buy more fuel-efficient vehicles and appliances and society transitions to a more fuel-efficient infrastructure -- once we enact fuel or carbon taxes to send clear and strong price signals. (See our Issues page, [Carbon Tax Effectiveness](#), for more discussion.)

Myth #3. Taxes on carbon emissions aren't necessary. Vehicle efficiency standards and mandates or subsidies for wind, ethanol, hydrogen, nuclear power [pick one or more] will solve the problem.

Who says? Special interests, many environmental groups, many security advocates, technology buffs.

Rebuttal: Standards and subsidies are blunt instruments -- vehicle efficiency standards don't influence vehicle usage, for example -- and are often contested for years and then undermined by "gaming" (viz., the 20-year stasis in CAFE standards, or tax credits for hybrid SUV's). Moreover, fuel usage is ever-changing and diffuse (more than 55% of petroleum is *not* used in cars or light trucks, for example), while efficiency standards are by nature both usage-specific and frozen in time. As for supply, it is the rare energy subsidy that has actually brought forth meaningful amounts of new energy. Economic theory predicts, and hard experience confirms, that only taxes on fuels can create the clear, rapid, across-the-board incentives needed to propel a massive shift to clean alternatives.

Myth #4. Heavy fuel taxes will wreck the economy.

Who says? Traditional growth champions, [fossil fuel interests](#).

Rebuttal: What causes economic havoc isn't high energy prices or even rising prices, but price *volatility*. Even fairly steep price increases can be manageable so long as they're regular and predictable, particularly now that the share of economic activity occupied by the fossil fuels sector is at an historic low. And carbon taxes need not be draconian to accomplish their mission. Our program of recurring annual increases of \$37 per ton of emitted carbon equates to 5-10% increases in energy prices per annum (with the percentages shrinking as the "base" rises and as non-fossil energy assumes a larger share). By comparison, the average annual real increase in U.S. gasoline prices in 2003-07 was 11%, and this didn't stop the economy from growing at 3% a year. Needless to say, the true threat to the economy (and everything else) is unchecked climate change, as the [Stern Report](#) has shown.

Myth #5. Carbon taxes will provide more revenue for government to squander.

Who says? Anti-tax groups, some conservatives.

Rebuttal: Not if the new revenues are rebated or dedicated to shifting from current taxes (see Myth #1). Because higher taxes on fuels will create a strong "market pull" to clean energy, the revenues don't need to be earmarked for hybrid cars, mass transit, biofuels, etc. -- or to lawmakers' pet projects -- for carbon taxes to put a big dent in fossil fuel use and CO₂ emissions.

Myth #6. Heavy fuel taxes will price U.S. goods out of the marketplace.

Who says? Some business groups, some labor unions.

Rebuttal: This argument assumes a static economy, *sans* adaptation and innovation. In reality, increased energy taxes will shrink the trade deficit (by cutting both volumes and pre-tax prices of foreign oil), while reduced reliance on oil imports will make it harder to justify military expenditures and activities on grounds of protecting foreign supplies. The higher prices will also spark innovation in clean, efficient technologies better suited for world markets than, say, supersized automobiles. Finally, taxing energy will create parity with our traditional competitors - the EU and Japan -- while encouraging like-minded actions in the emerging powerhouses of India and China.

Myth #7. A carbon cap-and-trade system is as good as a carbon tax, and is far more politically feasible.

Who says? Some "Big Green" groups, business organizations and corporations seeking a less provocative way to put a price on a carbon.

Rebuttal: Click [here](#) for CTC's dissection of the differences between a carbon tax and carbon permit-trading (the differences aren't minor). As for political feasibility, the political landscape has changed radically in the year or two since a few prominent environmental lobby groups threw in their lot with cap-and-trade. Public concern over climate is at or close to critical mass, thanks to a host of phenomena from Hurricane Katrina to *An Inconvenient Truth*. And the Democrats control Congress, affording opportunities to consider carbon tax proposals seriously. Acceding to cap-and-trade may have seemed necessary 18 months ago, but it may now be a case of setting the bar too low.

Myth #8. Americans are too myopic and distrustful, and our politics too broken, for meaningful carbon taxation (or tax-shifting) to ever take root here.

Who says: Veterans of failed past efforts to take on entitlements; assorted skeptics and cynics -- including, sometimes, ourselves.

Rebuttal: This is the one myth even we at CTC can't dismiss out of hand. Witness the [failure of past fuel-tax efforts](#), the [resistance to fossil-fuel-displacing wind farms in some rural areas](#), and the persistence of costly tax entitlements like the deductibility of home mortgage interest payments from federal taxes -- each, in its own way, testament to the dictum that "[losers cry louder than winners sing](#)," in the words of University of Michigan tax policy expert Joel Slemrod.

Nevertheless, we're betting on a different outcome for carbon taxes. For one thing, [poll results](#) are encouraging, with growing numbers of Americans expressing willingness to be taxed or to otherwise pay higher energy prices to combat the climate crisis. And this is before anyone of national stature (with the notable exception of [Al Gore](#)) has come out for taxing carbon emissions, and before CTC and other groups have had an opportunity to advance carbon taxing as revenue-neutral *tax-shifting* rather than a tax *hike*. Moreover, because the non-climate benefits of carbon taxes are enormous, from reduced dependence on foreign oil to less traffic gridlock, there are many opportunities to broaden the constituency. Finally, unlike 1980 or 1993, when fuel-tax proposals went down to defeat, the stakes this time are high -- frighteningly so. Stiff carbon taxes can't rescue the climate by themselves, but without them a rescue is virtually inconceivable. We're confident the American people will rise to the challenge.

Last updated: June 12, 2008

FAQs (30 quick questions and answers about carbon taxes; another fine carbon tax primer)

Frequently Asked Questions and Answers about Carbon Taxes and the Carbon Tax Center

1. Who/what is the Carbon Tax Center?

The Carbon Tax Center ("CTC") was launched in January 2007 to give voice to Americans who believe that taxing emissions of carbon dioxide -- the primary greenhouse gas -- is imperative to reduce global warming. Co-founders [Charles Komanoff](#) and [Daniel Rosenblum](#) bring to CTC a combined six decades of experience in economics, law, public policy and social change. CTC's mission is to educate and inform policymakers, opinion leaders and the public, including grassroots organizations, about the benefits of and critical need for significant, rising and equitable taxes on carbon emissions from fossil fuels.

2. Why are carbon taxes essential?

Charging businesses and individuals a price to emit carbon dioxide (CO₂) is essential to reduce U.S. emissions quickly and steeply enough to prevent atmospheric concentrations of CO₂ from reaching an irreversible tipping point. The transformation of our fossil fuels-based energy system to reliance on energy efficiency, renewable energy and sustainable fuels won't happen without carbon taxes sending the appropriate price signals into every corner of the economy and every aspect of life.

3. How serious is the climate crisis?

We agree with [Al Gore](#) and scientists such as [Sir David King](#) and [James Hansen](#) that the continued buildup of greenhouse gases in Earth's atmosphere portends worldwide cataclysmic change in the very near future. Hotter summers are the least of what's in store for humanity. Destructive storms, inundation of coastal regions, decimation of food chains, spreading disease, economic devastation, warfare and massive migrations of humans and other species are all virtual certainties in the lifetimes of most people now living, unless the world makes sharp cuts in greenhouse gases.

4. How much of greenhouse gas emissions are from fossil fuel burning?

For the U.S., carbon dioxide released by burning oil, coal and natural gas makes up 82% of total greenhouse gas emissions (weighted by climate-change impact), according to the federal [Department of Energy](#). The remainder is methane (9%, from landfills, coal mines, oil and gas operations and agriculture); nitrous oxide (5%, from burning fossil fuels and from certain fertilizers); refrigerants and other "engineered" chemicals (2%); and carbon dioxide from other sources (2%).

5. What is the U.S. share of world greenhouse gas emissions from fossil fuel burning?

Based on [2004 data](#) (the latest available), the U.S. is responsible for 22% of the world's CO₂ emissions from fuel-burning. Because fewer than 5% of the world's people are Americans, per capita we emit 5 to 6 times as much CO₂ as the average non-American; historically, the disparity is even greater. (Carbon dioxide molecules persist in Earth's atmosphere for around a century, which means that our past emissions are causing climate change now and in the future.) On any moral calculus, the United States bears a heavy responsibility to cut emissions massively and rapidly.

6. Why does CTC advocate carbon tax *shifting*?

To avoid burdening the less affluent, carbon tax proceeds should be returned to Americans through an equal, pro rata rebate or dedicated to reducing the tax burden of regressive taxes such as the federal payroll tax or state sales taxes (depending upon whether the tax is imposed at the federal or state level). Shifting the tax burden to pollution and pollution-generating activities will create powerful incentives to use less energy and emit less CO₂ into the atmosphere while simultaneously promoting tax equity and minimizing the impact of the carbon tax on those with lower incomes.

7. Why does CTC advocate carbon taxes in addition to energy-efficiency standards?

Energy standards have improved energy performance by forcing product design changes in a few important sectors, principally major home appliances and U.S.-made automobiles. But standard-setting takes a long time, and standards alone tend to be static whereas energy use is ever-evolving. Carbon taxes combined with efficiency standards will achieve far more than the latter alone by encouraging manufacturers and builders to pro-actively maximize energy efficiency while giving consumers ongoing incentives to make cost-effective choices valuing efficiency in purchasing, traveling and daily behavior.

8. Why not just subsidize renewables instead?

Federal incentives that pay wind and solar generators for each kWh produced, and state "Renewable Portfolio (or Energy) Standards" that mandate increased use of renewable power, have been and will be instrumental in jump-starting these essential sectors. Ditto, going forward, for biofuels. Still, the cost hurdles for renewables remain high. Taxing fossil fuels for their damage to climate is the best way to help renewables grow from their 1-2% niche to a majority share of U.S. energy.

9. Why not just withdraw fossil fuel subsidies?

Good reasons abound for zeroing out tax breaks, lease loopholes and other giveaways to the fossil fuel industry. The impact on fossil fuel use, however, would barely be noticeable. Authoritative sources such as [EarthTrack](#) place the industry's tax and fiscal subsidies at around \$25 billion a year, a figure that pales beside the roughly \$1,000 billion (one trillion dollars) paid annually for coal, oil and natural gas burned in the U.S. Withdrawing those subsidies would lead to at most a 2-3 percent rise in the market prices of fossil fuels -- scant incentive to reduce their use and concomitant emissions of CO₂.

10. Why not just let market forces (like peak oil) lift fuel prices?

Market signals are too volatile in the short term and too weak in the long term to provide the effective incentives needed to rewire the U.S. for energy efficiency and renewables. Moreover, high prices alone, whether due to geological depletion or plain old gouging, would line the pockets of the energy industry and ravage the poor and middle class. They would also be counter-productive, since high prices, absent a carbon tax, would exacerbate global warming by unleashing production of costly and CO₂-intensive fuels from "unconventional" sources such as Canada's oil sands. Only carbon taxes can provide the right combination of market correctives and protection of American families and our environment.

11. Will a carbon tax lessen U.S. oil dependence?

You bet it will. Petroleum products account for 42% of U.S. CO₂ emissions from burning fuels (coal and natural gas are responsible for 36% and 22%, respectively), so a carbon tax stiff enough to cut down heavily on CO₂ will necessarily put a big dent in oil consumption.

12. Would taxing carbon be regressive?

Any flat tax is regressive, but the regressivity of the carbon tax could and should be minimized or eliminated by allocating the tax revenues to benefit the less affluent. The key fact is that wealthier households use more energy, on average -- they drive and fly more, have bigger (and sometimes multiple) houses, and buy more stuff that requires energy to manufacture and use. Most carbon tax revenues will come from families of above-average means, corporations and government, which creates a basis for progressive tax-shifting: transferring a portion of the tax burden from regressive taxes such as the payroll tax (at the federal level) and the sales tax (at the state level) onto pollution and pollution-generating activities. Another progressive approach is to rebate the carbon tax revenues equally to all U.S. residents -- a national version of the [Alaska Permanent Fund](#), which annually sends identical checks to all state residents from the state's North Slope oil royalties. Because income and energy consumption are strongly correlated, most poorer households would get more back in rebates or tax savings than they would pay in the carbon tax.

13. How can impacts on poor families be lessened?

Impacts of carbon taxes on poor families can be lessened by: 1) progressive tax-shifting as just described; 2) pro-rata distribution of the carbon tax revenues to every U.S. resident (also described above); and/or 3) to the extent necessary, funding programs designed to help poorer households use less energy driving and at home.

14. How much revenue will carbon taxes generate?

A lot, if the taxes are set high enough to have the needed impacts. A federal "starter" carbon tax equating to 10 cents a gallon of gasoline, but applied to all U.S. fossil fuel burning, will bring in roughly \$55 billion a year in revenue. This equates to around \$180 per U.S. resident, or \$720 for a family of four. (Thus, a family that paid less than \$720 a year under this starter tax would come out ahead if the carbon revenues were rebated equally.) Successive carbon tax installments adding the same 10¢/gallon equivalent would each add another \$50 billion or so to the aggregate annual revenue stream. By the end of the tenth year (assuming annual installments), the annual revenue would be on the order of \$500 billion.

15. How will carbon taxes be administered?

The tax will be levied in the wholesale branch of the fuel supply chain, as far upstream as practicable. For example, electric generators will pay the mandated carbon tax to their coal, oil or natural gas suppliers, who will forward the payment to the government; the generators will pass along the tax to the retail electric utility which in turn will charge it to customers -- to the extent that market conditions allow. Similarly for petroleum products (e.g., gasoline, jet fuel, heating oil), with government collecting the tax from refiners or importers of refined petroleum products, and the taxes passed on to oil wholesalers and eventually to retail customers. This approach will maximize accuracy and incentives and minimize paperwork and leakage.

16. How will carbon taxes handle carbon sequestration? Plastics? Petrochemicals?

Offsetting credit will be provided to the extent the carbon dioxide is subsequently sequestered, in order to eliminate any disincentive to sequestration. Releases of CO₂ from converting fossil fuels to plastics or petrochemicals in non-combustion processes will be taxed at the same level as CO₂ emitted in the production of energy or for transportation purposes.

17. Will a carbon tax apply to nuclear power?

A carbon tax will only be imposed on the use or combustion of carbon and the resulting emission of carbon dioxide. A carbon tax would not be imposed directly on the generation of nuclear power, but it would apply to any CO₂ released in mining, enriching and transporting uranium, in other uses ancillary to the generation of nuclear power (such as fuel used for back-up generation), and in storing radioactive wastes.

18. How high should carbon taxes go? How fast should they climb?

While carbon taxes will need to be very high to create the required price incentives, they will need to be phased in to give individuals and businesses the opportunity to adjust. There is no magic formula or right number, but a tax that grows at an annual rate equivalent to 5-10% of the "baseline" cost of fossil fuels probably offers a viable combination of meaningful incentive and opportunity for adaptation. The \$37 per ton of carbon "starter tax" mentioned earlier, equating to around 10 cents a gallon of gasoline, fits the lower end of that range. At least as important as the tax *level* is the *commitment* to keep raising the tax, so that energy-critical decisions, from car-buying (Hummer or Prius?) to home-buying (exurb or transit-oriented community?) to factory locating (highway interchange or rail line?), are made with carbon-appropriate price signals.

19. Must carbon taxes be global to work?

A carbon tax can be applied locally, nationally or globally. A global carbon tax is certainly preferable, not just because the climate crisis is global but because it would avert potential leakage by carbon emitters attempting to move their combustion of carbon from jurisdictions that tax carbon to those that do not. It is essential, however; that we not make perfection the enemy of the good, and that carbon be taxed wherever possible until a global tax is implemented.

20. Why a carbon tax instead of a cap-and-trade system?

Carbon taxes are superior to cap-and-trade programs for six fundamental reasons:

- Carbon taxes will lend predictability to energy prices, whereas cap-and-trade systems will do little to mitigate the price volatility that historically has discouraged investments in less carbon-intensive electricity generation, carbon-reducing energy efficiency and carbon-replacing renewable energy.
- Carbon taxes can be implemented much sooner than complex cap-and-trade systems. Because of the urgency of the climate crisis, we do not have the luxury of waiting while the myriad details of a cap-and-trade system are resolved through lengthy negotiations.
- Carbon taxes are transparent and easily understandable, making them more likely to elicit the necessary public support than an opaque and difficult to understand cap-and-trade system.
- Carbon taxes can be implemented with far less opportunity for manipulation by special interests, while a cap-and-trade system's complexity opens it to exploitation by special interests and perverse incentives that can undermine public confidence and undercut its effectiveness.
- Carbon taxes address emissions of carbon from every sector, whereas cap-and-trade systems discussed to date have only targeted the electricity industry, which accounts for less than 40% of emissions.
- Carbon tax revenues can be returned to the public through progressive tax-shifting, while the costs of cap-and-trade systems are likely to become a hidden tax as dollars flow to market participants, lawyers and consultants.

21. How responsive is energy demand to the price of fuels?

That varies with the type of fuel, the expected persistence of the price change, and the availability of substitutes. The two forms of energy that economists have studied most intensively are gasoline (which accounts for 22.9% of U.S. emissions of carbon dioxide) and electricity (39.5% of CO₂). From our literature review, CTC believes a "price-elasticity" of 40% (or negative 0.4, in the jargon) is an appropriate assumption for gasoline demand, and 70% for electricity. These assumptions mean that drops in demand are less steep than rises in fuel price but are still substantial. For all other fuel uses -- a huge catch-all category (37.6% of CO₂) that ranges from diesel fuel for trucks and jet fuel for planes to home heating and industrial fuels -- the overall price-responsiveness is probably greater than for gasoline but less than for electricity. (See more detailed discussion [here](#).)

These estimates are "long-run" elasticities, meaning that price rises may take years to fully affect demand. That's because households and businesses can't overnight adjust their stocks of energy-using equipment (cars, major appliances, office layouts, etc.), nor can they instantly adapt location decisions that determine distances that people and goods travel. On the other hand, carbon taxes and the resulting rises in fossil fuel prices can be expected to induce reductions in carbon emission rates on the supply side. For example, higher coal prices due to carbon taxing will lead cost-minimizing power grids to more heavily dispatch lower-emitting natural gas power plants in the short run, and to switch increasingly to zero-carbon wind and solar generation over time.

Pending further analysis, CTC believes it is reasonable to associate a 4% drop in carbon dioxide emissions with each year's ramp-up of our proposed \$37/ton (of carbon) charge. While the impacts of repeated annual iterations of this charge would be less, due to the law of diminishing returns, this shrinkage would tend to be offset by carbon reductions contributed from the supply side.

22. What are the non-climate costs of using fossil fuels?

Fossil fuels impose a multitude of environmental and social costs apart from destabilizing climate. Chief among them are "traditional" air pollution such as car and truck exhaust and smokestack emissions; damage to land and water from extracting and transporting fuels; and the militarism, income inequality and political authoritarianism that is evidently endemic to extractive economies (e.g., Saudi Arabia, Nigeria, Indonesia). Many researchers believe that these and other "indirect" costs exceed the "market" prices paid for coal, oil and gas.

23. What are the ancillary benefits of taxing carbon?

As the previous Q&A suggests, U.S. carbon taxes could be expected to usher in a host of non-climate benefits, from better air quality and less strip-mining to reduced entanglement in the unstable and dangerous Middle East. Americans could also look forward to a slew of indirect benefits -- for example, lighter road traffic arising from a decrease in vehicle-miles traveled, as families and businesses adapt to higher gasoline and diesel fuel prices by trimming their least essential trips and consolidating others.

24. Who favors carbon taxes?

Carbon taxes are [supported by a diverse group](#) of opinion leaders, pundits (including a majority of the New York Times' seven regular columnists, two of whom lean to the right, politically) and economists. The task now is to broaden and deepen support for taxing carbon among both the political elites and the grassroots--and to do so in the face of concerted opposition from coal and

oil companies that fear the loss of sales--which is precisely what a carbon tax should accomplish.

25. How have past fuel tax efforts fared in the U.S.?

Poorly. The idea of taxing energy to reflect its true costs runs smack against both Americans' traditional sense of entitlement to cheap energy and the anti-tax ideology of the past quarter-century. This cheap-energy entitlement helped kill the last two big efforts to tax energy -- President Clinton's Btu tax in 1993 and Rep. John Anderson's "50/50" program in the 1980 elections -- which helps explain why no prominent elected official has yet endorsed raising taxes on energy. Progressive tax-shifting or a rebate of carbon tax revenues should dramatically reduce resistance to the idea of a tax and, as described in the response to the next FAQ, polls demonstrate significant support for a tax designed to reduce global warming.

26. What do polls indicate about carbon taxes?

Recent polls indicate that Americans are coming to recognize the need to pay more for energy in order to combat global warming. A New York Times/CBS News poll released in early 2006 demonstrated significant support for an increased tax on gasoline to reduce global warming, even though there have been no political champions promoting such a tax. A 2006 M.I.T. survey reports "a remarkable increase in the American public's recognition of global warming and their willingness to do something about it." During just the past three years, survey respondents increased by 50% their willingness to pay more for electricity to reduce global warming.

27. What will a carbon tax look like to me?

On the one hand, just about everything derived from fossil fuels, from a drive in the country to plastic bags for groceries, will cost more, with prices rising the most for activities or goods that use the most fossil fuels. But the upside is three-fold: (i) your tax rebate or reduction will offset much, perhaps more than 100%, of those price increases; (ii) you'll be able to minimize your tax bite by cutting down on fuel usage (e.g., shortening those country drives, bringing your own bags to the grocery store, purchasing "green power" from windmills and other non-fossil sources); and (iii) Americans' combined behavior changes in response to the carbon tax will go a long way toward protecting the climate and averting the cataclysmic consequences of unchecked global warming.

28. Who's taxing carbon now?

Sweden introduced a carbon tax in 1991, and other European countries -- Finland, Norway, the Netherlands -- followed suit. Ironically, the Kyoto Accords halted further enactment by individual countries, but the recent upsurge of climate concern has brought a resurgence of interest in taxing carbon. The 25-member European Union, representing nearly half-a-billion people, recently voted a carbon tax of \$13/ton to be inaugurated during 2006-07, increasing to \$33/ton during 2008-12. Japan has mandated a "household energy tax" equivalent to \$21/ton of carbon, and [British Columbia](#) is set to begin taxing carbon emissions on July 1, 2008. Voters in Boulder (Colorado) passed a carbon tax referendum in 2006; while [Boulder's tax](#) equates to just \$7/ton and applies only to electricity, it nonetheless establishes an important precedent: the first climate-protecting tax ever levied in the United States.

29. What's your political strategy for winning carbon taxes?

An effective campaign approach to carbon taxes must be both intellectually sound and politically palatable. The key is to steer around the pitfall of having a carbon tax framed as yet another way to raise taxes; the secret is a clear insistence on *earmarking revenues from carbon taxes to*

provide equal rebates to all U.S. residents or to reduce existing regressive taxes (dubbed "progressive tax-shifting"). This carbon tax-shift will reduce the tax burden from regressive taxes such as payroll taxes (at the federal level), as Al Gore has been urging, or sales taxes (at the state level) and properly place it on pollution and pollution-generating activities. This will aid in framing carbon taxes as an embodiment of the "polluter pays" principle that can unite interests as diverse as environmental-justice advocates and classical economists. It will also ensure that people of limited means, who use less energy than average, are made better off, not worse, with carbon taxing.

30. What can I do to advance carbon taxes?

The big need now is to develop grassroots support for a carbon tax. Start talking about a carbon tax at your local environmental, religious or civic group meetings. Sign up [here](#) so we can keep you informed and visit this site often. We'll keep it up to date and worth your time. Please ask us for help if you need further information (write to info@carbontax.org). And please [donate to the Carbon Tax Center](#). It's contributions from people like you that enable us to conduct research, work on advocacy, and spread the word about the need for and advantages of carbon taxes. Thank you.

Last updated: February 26, 2008

What Is The Carbon Tax Center?

The Carbon Tax Center (CTC) is a non-profit, non-governmental organization formed in 2007 by economist Charles Komanoff and attorney Dan Rosenblum. The [Environmental Law & Policy Center of the Midwest](#) serves as fiscal agent for ELPC.

We formed the Carbon Tax Center in the belief that America needs a full and candid discussion of carbon taxing in the national arena and at the state and local levels as well. We are mindful of the difficulties of putting forward new taxes in the U.S. Our advocacy of *revenue-neutral* carbon taxes via revenue return is partly a response to this difficulty, though it is also rooted in our determination to ensure that carbon taxes do not exacerbate economic inequality. CTC is providing intellectual and practical support, as well as a sense of community, to help carbon tax proponents in every region and across the political spectrum coalesce into an irresistible civic force.

[Click here for more.](#)

More on the topic from:

www.GreenOptions.com

The Climate Stewardship Act and "Cap and Trade"

<http://greenoptions.com>

Re: The Climate Stewardship Act and "Cap and Trade"

by **Mark** on Mon Jun 02, 2008 5:56 pm

One of my favorite subjects..

It's my belief that properly implemented cap & trade can solve many of our CO2 issues by nurturing innovation rather than simply adding punitive costs. Stolen from an earlier blog post that I've written on the subject, here is my list of pro's and con's:

Putting a market price on Co2 emissions through cap and trade schemes will provide a number of competitive advantages to Western firms:

- * Cleaner technology means newer technology, heating up the economy as incentives are provided for firms to upgrade old equipment. This is particularly advantageous for high-tech Western firms who tend to provide manufacturing technology to developing nations who are engaged in more simple commodities manufacturing.
- * It provides further incentives to innovate in order to create competitive cleaner technologies. Industries become uncompetitive when innovation stagnates, and when industries become uncompetitive consumers usually loose out. Putting new innovative pressures on uncompetitive industries will provide better competition and better results for consumers.
- * Nations which participate early in carbon trading schemes will develop more sustainable technologies ahead of those which do not, providing a longer term competitive advantage as additional nations join trading schemes later.
- * Knowledge rich Western nations will have an intrinsic advantage over man-power rich developing nations.
Co2 output is a proxy for energy usage - one of the principle costs in any industry. The need to reduce energy use will create opportunities for manufacturers to develop more efficient, effective and streamlined production processes the the knock-on benefits of minimizing waste and potentially lowering costs. For example, restrictions on chemical use in the printed wiring boards industry forced firms to develop new techniques to reduce the number of plating and removal steps. The net effect has been the development of new techniques which reduce overall production times and hence reduce the overall cost of production.
- * The sale of carbon credits could provide capital to start profitable projects such as reclaiming methane from landfill for energy.
Additional transparency provided over Co2 emissions would prevent 'green-washing' making it clear what firms are achieving and what they are not achieving.

And what of the disadvantages?

- * Firstly, carbon trading is a bureaucratic nightmare, susceptible to corruption and manipulation and likely to be distorted by political weakness. Witness the farcical European Union version of emissions trading which has effectively resulted in a windfall for many firms who have been able to profitably sell their over allocation of carbon credits.

* Alternative measures, such as green taxes are simpler to administrate and more effective in changing consumer behaviour since they are paid at the point of use.

* Carbon trading is politically too easy (and therefore liked by politicians) since they do not immediately impact consumers and the onus falls on businesses to make the hard choices. Politically easy decisions tend to be poorly thought out and executed.

Carbon trading is likely to become a global reality in the next decade whatever our opinion. Whilst some businesses may fall on hard times as a result, healthy firms are unlikely to have difficulties in managing new constraints by exploiting new opportunities. Emissions cap and trade certainly provides a challenge, but not the end of today's global economy.

About Japan's Cap & Trade activity:

From NPR's ALL THINGS CONSIDERED www.npr.org

At an exhibition at the G-8 summit in Hokkaido, Japan, Fujitsu representative Miwako Morishima shows off a prototype laptop computer made out of heat-molded Japanese cedar.

Japan's government and Japanese companies are touting efforts to make their country one of the most energy-efficient, low-carbon places in the world. But some critics dismiss the publicity as "greenwash" that paints a deceptive picture of Japan's environmental status.

Prime Minister Yasuo Fukuda's Cabinet approved a trial plan Wednesday to trade carbon credits in an effort to lower emissions and fight global warming. And at a show at the G-8 summit in Hokkaido this month, plug-in cars, recycled building materials and humanoid robots were among the futuristic products showcased by Honda, Toshiba, Hitachi and other companies.

At the Fujitsu booth, Miwako Morishima showed off one of her company's latest green gadgets — a wooden laptop computer. The centerpiece of the show was the "Zero Emission House," a prototype home with technology from a number of big Japanese companies. A guide, Akiko Obayashi, explained that the house gets most of its electricity from renewable sources. "At the moment, if the weather is good, we can provide all the electricity from the solar panels and the wind turbine," Obayashi says.

The washing machine uses ozone bubbles to sterilize the water, and the home's walls have built-in seismic shock absorbers. "In Japan, we have a lot of earthquake, and it absorbs the shock and changes to the heat," Obayashi says. But experts say many of the same Japanese companies that make these products oppose government measures to limit emissions, such as a carbon trading system.

"Japanese company culture is typically more focused on the supply side, or technology gimmicks, or technology solutions," says Iida Tetsunari, director of the Tokyo-based Institute for Sustainable Energy Policies. "The majority is very much against introducing so called cap-and-trade or carbon tax."

Iida says the Japanese government is deeply divided on how to tackle global warming. He and

others say Japan's claim to be a world leader in energy efficiency is deceptive. Andrew DeWit, an energy policy expert at Rikkyo University in Tokyo, says, "The establishment here says, 'Oh look, we're ahead of the Europeans, we're 20 years ahead of the Europeans.' That's just on the face of it wrong."

Japan has set low targets for renewable energy use and has urged companies to reduce their carbon emissions voluntarily — but not made it mandatory, DeWit says. DeWit says that at root, many Japanese corporations are suspicious of government intervention of the economy. They're reacting, he says, to the huge infrastructure spending and corruption that followed the busting of Japan's economic bubble. "They want to get away from these pork barrel projects, the spending on roads that was very much emphasized in the '90s as a way to prime the economic pump," DeWit says. "To lead the world, Japan must take the initiative by achieving a low-carbon society," Fukuda told his Cabinet on Wednesday. But if Japanese companies are left to set their own targets for energy efficiency, DeWit says, they won't be leading the charge away from fossil fuels. They will be following it, after all their other options and resources have been exhausted.

(Note from Orly: It should be noted that other news sources (business) covered this without any of the skepticism)

IV. CRADLE TO CRADLE

William McDonough, an architect, and Michael Braungart, a chemist, wrote the book *Cradle to Cradle*, which was published six years ago - bizarrely, but with clear intent - on plastic pages, a plastic polymer that can be used again and again when the book's useful life is over. The book is a "manifesto calling for the transformation of human industry through ecologically intelligent design." As for why the book is not made of paper, McDonough explains: "Imagine something that makes oxygen, sequesters carbon, fixes nitrogen, distills water, accrues solar energy as fuel, makes complex sugars and food, creates microclimates, changes color with the seasons, and self-replicates ... why don't we knock that down and write on it!" "Cradle to Cradle," or C2C, is a cool concept that is spreading in the manufacturing world. It means looking at the big picture in designing a product, from the thing's creation - materials and manufacturing process - to its next incarnation, because its end of life will not be in the landfill. This is a closed loop system, where, rather than things being manufactured, used, and tossed away (we know now that there is no "away"), materials are perpetually reused. Besides using natural resources (i.e. biological nutrients) this system also uses nontoxic "technical nutrients", as there are not enough biological nutrients to support all human needs.

The authors have a C2C consulting firm with clients such as Steelcase, the U.S. Postal Service, Ford Motor Company, and China.

<http://www.ted.com>

<http://www.greenerdesign.com>

Source URL: <http://www.greenerdesign.com/feature/2008/01/01/the-cradle-cradle-mindset>

BE GREEN

Be Green Packaging Receives the First Cradle-to-Cradle Certification for Food Packaging

(CSRwire) SANTA BARBARA, CA - July 25, 2008 - Be Green Packaging, LLC (Be Green) is pleased to announce that their line of bulrush packaging has been awarded and certified "Silver" Cradle to Cradle by MBDC (McDonough Braungart Design Chemistry, LLC). MBDC is a leading environmental consulting firm focused on helping companies implement new approaches to sustainability and prosperity. Be Green Packaging's certification comes after a ten-month study of its bulrush fiber and sustainable design. Be Green's bulrush packaging has successfully met the certification criteria for: Materials, Material Reutilization/Design for Environment, Energy, Water and Social Responsibility. Be Green Packaging, LLC designs, develops, manufactures, and distributes tree free compostable food containers such as bowls, plates, clamshells, and trays for the food service, deli, vegetable, meat, fish, and poultry industries. Be Green Packaging's products are currently in distribution in 37 states, Canada, and the United Kingdom. Be Green Packaging's sales and marketing is managed from Santa Barbara, California, which is known as the birthplace of environmentalism in the United States. Their office is located at 18 East Figueroa Street, Santa Barbara, CA 93101. **More about the certification:** Cradle-to-Cradle (C2C) assesses products on a number of criteria, such as the use of safe and healthy materials; design for material reuse and recycling; efficient use of energy and water throughout production; and instituting strategies for social responsibility. The Cradle-to-Cradle design paradigm was developed by William McDonough and Dr. Michael Braungart, and the certification program is administered by their firm, McDonough Braungart Design Chemistry (MBDC). In May 1, 2007– The U.S. Green Building Council (USGBC) announced that projects seeking certification under the LEEDÆ Green Building Rating System(TM) can now earn an "Innovation in Design" point by using the Cradle to Cradle program for certified building products. Cradle-to-Cradle certifications have been awarded to The United States Postal Service, Steelcase, Herman Miller, Cabot Corp and Carnegie to name a few.

For more information please contact:

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V. from the AMERICAN PETROLEUM INDUSTRY

...and now, a message on behalf of the Oil industry b/c actually I think it's interesting to know what they are saying about oil and pricing and the oil industry – I am not prepared to comment on the info so for now, I just present it →

SOURCE: www.energytomorrow.org

API (American Petroleum Industry) is the only national trade association that represents all aspects of America's oil and natural gas industry. Our 400 corporate members, from the largest major oil company to the smallest of independents, come from all segments of the industry. They are producers, refiners, suppliers, pipeline operators and marine transporters, as well as

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service and supply companies that support all segments of the industry.

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Energy Rhetoric vs Reality

Policymakers are talking a lot about energy and energy policy. What follows are some of the most frequently heard claims and proposals emanating from the campaign trail, along with realities that need to be considered when evaluating these claims.

RHETORIC: Oil Companies are to blame for the high price of gasoline.

REALITY: There are many factors affecting the price of gasoline.

More than 80 cents of every dollar spent at the pump goes to the price of crude and taxes. The price of crude oil is set on global markets, not by oil companies, and it accounts for more than 70 cents of every dollar of gasoline price. And the government takes nearly twice as much in taxes (13 cents) as the industry makes in profit (fewer than 8 cents).

While gasoline prices have increased dramatically this year, the price of crude oil has increased by \$1.21 per gallon in 2008, compared with the price of gasoline, which is up 80 cents per gallon.

Demand is strong in both mature economies and the developing world, especially in China, India and the Middle East. The market impact of tight supplies has been exacerbated by political instability, resource mismanagement and weather. Finally, the decline in the value of the dollar against other currencies has put American consumers at a disadvantage.

RHETORIC: Oil and natural gas companies are demanding greater access to America's resources even though they own leases on millions of acres of federal lands that are already open to drilling. They would rather sit on these idle leases and make record profits than increase production. If they're not willing to produce on these idle leases, they should hand them over to someone who will.

REALITY: Just because a lease is not producing oil or natural gas doesn't mean it's idle. Companies are actively exploring and developing the majority of their leases, but the entire process takes years and requires many steps, including securing government permits, analyzing seismic data and installing the machinery needed for drilling and production. Many leases prove not to contain enough oil and natural gas to be commercially viable, and companies can't produce oil and natural gas where it does not exist. Over the past five years, American companies have paid billions to obtain federal leases, and if they don't develop leases within a certain period of time, they return them to the federal government, forfeiting all investments.

RHETORIC: We can't just drill our way to energy security – it won't make a difference.

REALITY: At a time when we need all the energy we can find, increasing access to domestic sources of oil and natural gas would enhance our energy security. We have enough oil and natural gas resources to power 65 million cars for 60 years and heat 60 million households for 160 years. But more than 85 percent of coastal waters adjacent to the lower-48 states are off-limits to oil and natural gas exploration.

RHETORIC: *Allowing oil companies to drill would ruin the environment on our lands and off our coasts.*

REALITY: **The industry has researched and developed breakthrough technologies, such as 4D seismic imaging and multi-directional drilling, which have helped reduce the industry's environmental footprint dramatically.** For example, today it's possible to develop nearly 80 square miles of area below the surface from a single two-acre site on the surface.

RHETORIC: *We need to get off oil and use renewable and alternative energy instead.*

REALITY: **The U.S. Department of Energy estimates that fossil fuels will continue to meet at least 80 percent of energy demand, both in the United States and globally, through 2030,** even with tremendous growth in alternative and renewable sources of energy.

RHETORIC: *U.S. oil companies have refused to invest in alternative energy and other clean technologies.*

REALITY: **The U.S. oil and natural gas industry invested almost \$100 billion between 2000 and 2005 in emerging energy technologies,** including \$12 billion in non-hydrocarbons and \$42 billion in greenhouse gas emission mitigation technologies from 2000 to 2006.

RHETORIC: *Oil companies are making record profits and we should impose a windfall profits tax on them.*

REALITY: **While company profits are large in dollar terms, the earnings of oil companies aren't much higher than those of the S&P Industrials.** In fact, it is only in recent years that they have matched or exceeded those returns. Oil and natural gas industry profits are in line with other manufacturing industries. And there is no credible evidence that raising taxes on them would lower fuel prices.

RHETORIC: *It's time to end tax breaks for Big Oil and make these companies pay their fair share in taxes.*

REALITY: **Oil companies already pay on average almost twice as much in income taxes as other U.S. manufacturing companies** – 40.7 percent, as a share of net income before income taxes, compared with 22.1 percent for other industries.

RHETORIC: *Oil company executives and other company insiders are profiting at the expense of working class Americans.*

REALITY: **Tens of millions of Americans, many of them middle-class, own shares of oil company stocks through IRAs and mutual and pension funds,** and they benefit from strong company earnings. Only 1.5 percent of industry shares are owned by corporate management.

THE END, for now...