

Memo

To: California Energy Report Subscribers
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Re: Monthly Energy News for December 2008

CONTENTS

2008	2
Impact on Energy Policy	4
Driving Down	4
CA Utility Cutoffs Up	5
U.S. GHG Emissions Increased by 1.4% in 2007	5
New and Old Regulators	5
What to Expect	6
CALIFORNIA	6
First Large LNG Fuel Production Plant	6
Most Trash Recycled	7
HUMOR	7

2008

Most of us are happy to see 2008 go. Let's do a brief summary of what happened.

- Manufacturing activity fell, hitting the lowest reading in 28 years in December as new orders and employment continue to decline. The index fell to its lowest level since June 1980. Only three recessions in the history of the index have showed weaker manufacturing readings. Those recessions were in 1948 to 1949, 1973 to 1975 and 1980. As the economy sputters through a recession that began in December 2007, no industry is proving resistant. No sector reported overall growth in December. Also, none reported growth in new orders, production, employment or prices, as businesses from tobacco to coal products to foodmakers saw declines.
- The employment index showed its lowest reading since 1982. The sector lost 85,000 jobs between October and November, according to the most recent data from the Bureau of Labor Statistics. More losses are expected in coming months as demand continues to be weak.
- The Standard & Poor's/Case-Shiller housing index dropped by 18 percent in October, the latest month with reported data. It was the largest drop since the creation of the 20-city index in 2000.
- The Conference Board reported that the Consumer Confidence Index in December was at its lowest level in the index's 41 years of existence. The index fell from 44.7 to 38.
- This past year was a horrible year for 401(k)'s, IRA's, and personal portfolios. The Dow Jones lost 34% in 2008 and since hitting 14,000 in Oct. 2007 the Dow has lost 37%, closing out the year at 8,776, the biggest drop since 1931. The S&P 500 lost 39%, the largest annual loss since 1937.

Below is the percentage performance for the 30 current components of the Dow Jones index for 2008, in ascending order:

<u>Company</u>	<u>% Change in 2008</u>
General Motors Corp	-87.1
Citigroup Inc	-77.2
Alcoa Inc	-69.2
Bank of America Corp	-65.9
General Electric Co	-56.3
The Boeing Co	-51.2
Merck & Co Inc	-47.7
Microsoft Corp	-45.4
Intel Corp	-45
Du Pont	-42.6
Caterpillar Inc	-38.4
3M Company	-31.8
AT&T Inc	-31.4
United Technologies Corp	-30
The Walt Disney Co	-29.7
Hewlett-Packard Co	-28.1
JPMorgan Chase and Co	-27.8
The Coca-Cola Co	-26.2

International Business Machines	-22.2
Pfizer Inc	-22.1
Verizon Communications	-22.1
Chevron Corp	-20.7
Kraft Foods Inc	-17.7
Procter & Gamble Co	-15.8
Exxon Mobil Corp	-14.8
Home Depot Inc	-14.6
Johnson and Johnson	-10.3
McDonald's Corp	+5.6
Wal-Mart Stores Inc	+18

But there is some good news.

- Gasoline prices dropped from a high of \$5/gallon in July to about \$1.50 per gallon last week of the year.
- Mortgage rates have plunged to their lowest levels in 30 years, leading to a boom in refinancing, if you can get it with the stricter credit requirements. The Mortgage Bankers Association reported that mortgage applications jumped 48 percent for the week ending Dec. 19, with a 63 percent jump in refinancing leading the way. Only 0.8 percent of applications were for the adjustable-rate mortgages that were hugely popular just a few years ago. Most borrowers instead used fixed-rate mortgages to lock in lower payments.
- Crime rates are still falling. Violent crime in America has been in a freefall since the early 1990s, despite a slight uptick in 2005 and 2006. Economists, criminologists, and sociologists can't conclusively say why. Explanations range from the 1990s economic boom to changes in crime-fighting strategy to abortion to reductions in childhood exposure to lead. Whatever the reason, long-term trends show crime is down across the board. Beginning in 1994, juvenile crime dropped dramatically for a decade. By 2004, juvenile crime was at its lowest point in a quarter century. The numbers edged up slightly in 2005 and 2006, but juvenile violent crime is still 40 percent lower than it was in 1994. The juvenile murder rate is a whopping 73 percent below its high in 2003.
- Life expectancy is up. In June, the Centers for Disease Control announced that in 2006 (the latest year for which data is available), Americans once again set a record for life expectancy. Men, women, blacks, whites — all can expect to live longer today than at any point in American history. Discrepancies in the average age of death between ethnic groups are narrowing. We're beating our biggest killers. The same CDC report noted that mortality rates for eight of the 10 leading causes of death in America dropped in 2006. In fact, deaths from the two biggest killers — cancer and heart disease — have been in decline for a decade. Deaths from the third leading cause of death, stroke, are also down.
- We have more leisure time. Americans work on average eight fewer hours than we did in the 1960s. Believe it or not, lower-income Americans are actually more likely to spend time at leisure and less time on the job than their wealthier counterparts, suggesting that when we do work long hours, it's more likely to be because we want to than because we have to. We also seem to be enjoying ourselves more. We're spending more money per person on recreation.

And finally, I don't quite know if this is good or bad news. Burial plot brokers are reporting an uptick in the business of reselling grave sites, as money troubles prompt a growing number of people to put their burial plots up for sale, often at a loss. Baron Chu, who owns the

burial site resale business Plot Brokers, said he is doing nine or 10 times as much business as usual, a jump he attributes to the economic downturn, according to the Los Angeles-based Daily News. Chu said people are only getting about a quarter of what their plots would have fetched six months ago because of the increased supply hitting the market. He said one client, who had just been evicted from her home, got \$500 for a plot worth \$6,800.

Impact on Energy Policy

The current crisis will have a significant impact on what our future energy policies will look like. First, as the world enters a global economic recession, demand for energy, including liquid transportation fuels, natural gas and electricity, has dropped way down. Recent figures for electricity demand, for instance, show that some regional U.S. demand reductions are near 9 percent. Dropping energy prices tampers desires for clean energy options and makes many of them uneconomic. Second, a byproduct of this recession is the freeze of capital for investment, lending, mortgages and consumer credit. This negatively impacts access for investments in clean energy industry expansion as well as electric generation projects and home buying, second mortgages and renovation loans. Third, as energy demand drops, electric utilities are beginning to shelve planned electric generation projects. As economic growth slows, so does need for extra electric generation, peak power and electricity grid upgrades. Fourth, while both the Investment Tax Credits for energy efficiency and renewable energy and the Production Tax Credits for utility-scale renewables are important — their value is substantially diminished because less businesses have a large tax liability at year end in this harsh recession. The renewable trade groups are rightly asking for a policy change to have these newly won tax extensions be refundable or transferable so as to have more usefulness in this harsher environment. Fifth, the clean energy industries are predominantly small businesses, and the expected large and prolonged dip in sales and installation may undercut their ability to supply due to problems with cash flow and carrying costs of inventorying equipment and components.

Driving Down

People in the United States drove 3.5% fewer miles in October 2008 than they did in October 2007, making October the twelfth consecutive month of year-to-year declines in U.S. vehicle miles traveled, according to the U.S. Department of Transportation (DOT). From November 2007 to October 2008, U.S. residents drove 100 billion fewer miles than the year before, marking the largest ever continuous decline in U.S. driving. October alone saw a year-to-year drop of 8.9 billion vehicle miles, which is the largest October decline since 1971. A nationwide poll showed that more than 24 million U.S. residents—11% of the adult population—are using public transportation more than they did last year, and 16% say they expect to increase their ridership in the coming year.

Stay mindful of the adage: ‘No good deed goes unpunished’. Motorists are driving less and buying less gasoline, which means fuel taxes aren't raising enough money to keep pace with the cost of road, bridge and transit programs. The 15-member National Commission on Surface Transportation Infrastructure Financing is the second group in a year to call for increasing the current 18.4 cents a gallon federal tax on gasoline and the 24.4 cents a gallon tax on diesel. State fuel taxes vary from state to state. A roughly 50 percent increase in gasoline and diesel fuel taxes is being urged by the commission until the government devises another way for motorists to pay for using public roads. Projected shortfalls in revenue led the National Surface Transportation Policy and Revenue Study Commission, in a report issued in January 2008, to call for an increase

of as much as 40 cents a gallon in the gas tax, phased in over five years. At the same time, the commission will recommend tying the fuel tax rates to inflation. The commission will also recommend that states raise their fuel taxes and make greater use of toll roads and fees for rush-hour driving.

The dilemma for Congress is that highway and transit programs are dependent for revenue on fuel taxes that are not sustainable. Many Americans are driving less and switching to more fuel-efficient cars and trucks, and a shift to new fuels and technologies like plug-in hybrid electric cars will further erode gasoline sales.

CA Utility Cutoffs Up

Southern California Edison reported that 10% more customers had their power turned off from January to October this year than last year. Pacific Gas & Electric Co. reported the same trend. Shut-offs for unpaid PG&E bills increased 17% from January to November this year, compared with the same period last year. The number of people requesting help with payments for the first time also is on the rise, utility company officials said.

U.S. GHG Emissions Increased by 1.4% in 2007

The total emission of greenhouse gases in the United States increased by 1.4% in 2007, according to DOE's Energy Information Administration (EIA). An EIA report released on December 3 found that U.S. greenhouse gas emissions reached the equivalent of 7.282 billion metric tons of carbon dioxide in 2007, with the increase mainly attributed to greater weather extremes and a decrease in hydropower production. While carbon dioxide emissions increase by 1.3% in 2007, other greenhouse gases increased at a faster rate, including a 3.3% increase in emissions of the most powerful greenhouse gases, such as refrigerants. Since 1990, U.S. greenhouse gas emissions have risen by nearly 17%.

New and Old Regulators

Southern California lawmakers are slated to head both the Senate and Assembly energy committees. Senator Alex Padilla replaces Senator Christine Kehoe (D-San Diego) as the chair of the Senate Energy Utilities & Communications Committee. Assemblymember Felipe Fuentes (D-Arleta) is expected to take the helm of the Assembly Utilities & Commerce Committee from termed out Assemblymember Lloyd Levine (D-Los Angeles), say knowledgeable capital sources.

In contrast to changes in Sacramento, there was no turnover at the California Public Utilities Commission. The governor reappointed CPUC president Mike Peevey and member Rachelle Chong to their posts November 28. Most expected Peevey would serve another term as CPUC head, particularly given that his wife Carol Liu won a Senate seat November 4. Previously, she served in the Assembly representing the 44th district until she was termed out in 2006. The current terms of Chong and Peevey, who has been CPUC president since 2001, expire at the end of this year.

California Energy Commission chair Jackie Pfannenstiel, whose term is up at the beginning of next year, will not be seeking a reappointment. "My appointment expires on January 6, 2009, and I will vacate the position on that date," she stated in a letter to Governor Arnold Schwarzenegger last month.

What to Expect

So, what do I expect in 2009? I'll leave my prognostication to the energy sector, but expect more bad economic news, as we brace for another rash of closures as more business succumb to the recession and the rest of the world tries to dig out of the economic hole. We have the return of **direct access** - in some form most customers will be able to choose at least some of their electricity suppliers; we will have increased **GHG** requirements as California pursues its quixotic pursuit of climate change goodness. There will be even more **self generation** and **distributed generation** options such as remote net metering and other incentives - its one of the only ways we can reach the renewable portfolio requirements. Expect increased utility **demand response** and **energy efficiency** offerings (remember the utilities have targets for these also that they are falling woefully short on). There will be significant improvements and opportunities in metering (**AMR** and **AMI**) for water agencies. There will be greatly increased incentives for **renewable** generation, and I'm already seeing a number of new and interesting technologies being developed, many of whom have promise for the water agencies. There will be volatile energy **prices** - whether we are whipsawed like we were in 2008 depends upon when we start coming out of the recession. Stan tuned.

CALIFORNIA

First Large LNG Fuel Production Plant

Clean Energy Fuels Corp. announced that it has opened the first large-scale liquefied natural gas (LNG) production plant in California, and the largest LNG plant in the Southwest. The new California LNG Plant is located in the Mojave Desert near Boron, California, about 125 miles northeast of Los Angeles. The facility will produce up to 160,000 gallons per day of LNG for Clean Energy's new LNG truck fueling station in Carson, California, which provides fuel for trucks serving the Ports of Los Angeles and Long Beach. Those ports have instituted a Clean Truck Program that aims to replace old diesel trucks with new, cleaner trucks, which may include LNG-fueled trucks. The California LNG Plant will also supply LNG to transportation fuel customers throughout California and Arizona. If there is sufficient demand for LNG fuel, the facility can be expanded in the future to produce 240,000 gallons per day.

The Ports of Los Angeles and Long Beach created the Clean Truck Program as part of their Clean Air Action Plan, which was adopted in November 2006 to address air pollution at the ports. The ports are the largest source of air pollution in the greater Los Angeles region. The Clean Truck Program took effect on October 1 and immediately banned from the ports about 2,000 trucks built before 1989, which was the first year for pollution controls on diesel-fueled trucks. By 2012, the program will bar any trucks that don't meet the cleanest 2007 emission standards, and right now, that adds up to another 14,000 trucks. The program also provides subsidies to encourage the use of alternative fuels and other advanced technologies for trucks. The Clean Truck Program is currently being blocked by legal action of the Federal Maritime Commission (FMC), which has found certain portions of the program to be anti-competitive.

Most Trash Recycled

The California Integrated Waste Management Board announced that the state recycled 58 percent of its waste last year, or 54 million tons of trash, a national record. This would be equal to filling more than 100 football fields to a height equal to that of the Empire State building, according to a press release from the CIWMB. According to the board, the recycling industry accounts for more than 85,000 jobs, generates \$4 billion in salaries and wages, and produces \$10 billion worth of goods and services each year. Each year's recycling also saves enough energy to power 1.4 million homes and is the equivalent of taking 3.8 million passenger cars off the highway.

HUMOR

Academic Phrases and Meanings

The following list of phrases and their definitions might help you understand the mysterious language of science and medicine. These special phrases are also applicable to anyone working on a Ph.D. dissertation or academic paper anywhere!

"It has long been known"... I didn't look up the original reference.

"Three of the samples were chosen for detailed study"... The other results didn't make any sense.

"Typical results are shown"... This is the prettiest graph.

"In my experience"... once.

"In case after case"... twice.

"In a series of cases"... thrice.

"It is believed that"... I think.

"It is generally believed that"... A couple of others think so, too.

"Correct within an order of magnitude"... Wrong.

"According to statistical analysis"... Rumor has it.

"A statistically oriented projection of the significance of these findings"... A wild guess.

"It is clear that much additional work will be required before a complete understanding of this phenomenon occurs"... I don't understand it.

"After additional study by my colleagues"... They don't understand it either.

"Thanks are due to Joe Blotz for assistance with the experiment and to Cindy Adams for valuable discussions"... Mr. Blotz did the work and Ms. Adams explained to me what it meant.

"It is hoped that this study will stimulate further investigation in this field"... I quit.