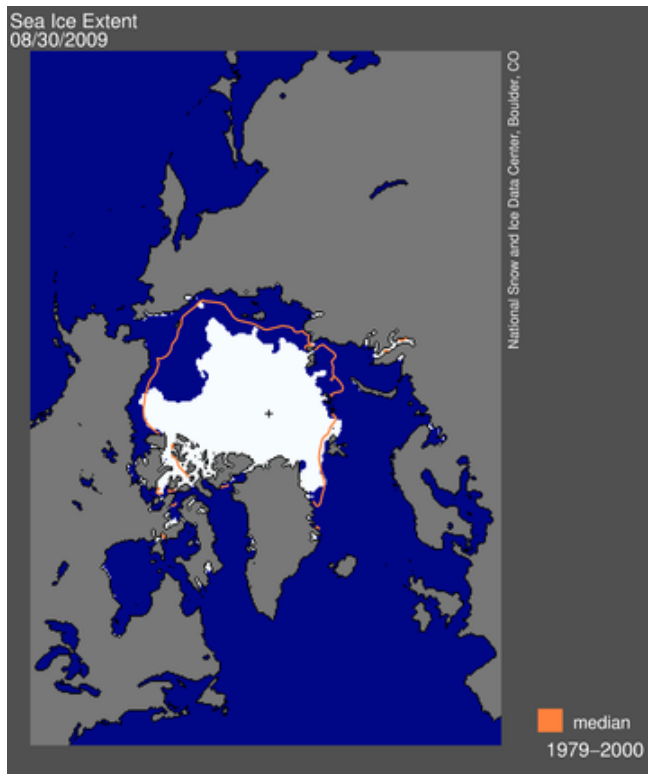


# SUSTAINABILITY TIMES

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## Arctic Sea Ice: An Endangered Species?



Arctic Sea Ice Extent as of August 30, 2009 Compared to the 1979-2000 Median (National Snow and Ice Data Center)

You have probably already heard that the extent of year-round sea ice coverage in the Arctic is receding as one effect of global warming. The National Science Foundation shows that the sea ice coverage reached a record minimum on September 14, 2007. We won't know for a few weeks if that record falls this year or not, but as of August 17, we have 13% greater ice coverage than on that date in 2007 although a glance at the accompanying illustration shows we are well below the median. (Data from National Snow and Ice Data Center.)

Contributions to this annual ice melt are three-fold. First, the average air temperature in the Arctic region is rising, which contributes to surface melt as the air warms the surface layer of the ice. Second, the average temperature of the oceans are rising, which contributes to warming the ice sheet from below. Third and potentially the most alarming, as the ice melts it exposes the surface of the ocean to direct sunlight. Since ice is white and the ocean is a much darker blue-green color, ice reflects back into space a much larger percentage of the sunlight that strikes it.

Open water absorbs most of the sunlight striking it; therefore contributing significantly to the retention of the sun's heat by the ocean waters. While governments cast hungry glances at open polar waters, planning oil drilling platforms and more efficient shipping lanes, polar climatologists fear the possibility of accelerated melting due to the loss of surface ice cover. Polar bears just wonder how they will survive when the ice is gone.

There is no question that summer polar ice coverage is decreasing with time. We wonder if we'll see the year in which it completely disappears, a sacrifice to Hummers and air conditioning. Or will we live to see the year polar ice coverage exceeds the median coverage for the first time in decades?

Although our companies, homes, schools, and jobs are probably thousands of miles from the Arctic, the efficiencies we incorporate into our industrial processes, personal lifestyles, and societal norms will combine to determine the ultimate future of Arctic Sea Ice.

## **(Cash for Clunkers)<sup>2</sup>**

**By Gary Bergmiller**

It's too bad I missed the phone call from President Obama, or maybe it was one of his advisors who made the call. Anyhow, I wish I could have shared my thoughts on recycling with him before the Cash for Clunkers Program went "live."

The program, which ended August 24, had some significant results. The program was responsible for a 13% increase in new car sales (hallelujahs in Detroit and Wall Street). GM is now adding workers (hoorahs from the AFL-CIO and hundreds of families). Approximately 690,000 vehicles were swapped for more fuel-efficient ones, reducing US gasoline demand by 160 million gallons annually (gnashing of teeth in Big Oil Board Rooms and Middle Eastern palaces) and reducing carbon dioxide emissions by 1.6 million tons per year (applause from the Sierra Club and Al Gore). All of this for a price tag of a mere \$3 billion or roughly \$10 per American (sighs from taxpayers). Not only did 690,000 families save \$3500 to \$4500 now, but they will save with every tankful of petrol for many years.

So, what's not to like? What's my beef?

The positive effects of the Cash for Clunkers Program could have been significantly greater if these clunkers had not been automatically destroyed. In the spirit of recycling, these clunkers could have been passed down to owners of Super-Clunkers to further reduce the demand for gasoline in the US and the amount of our annual emissions.

Suppose I own a 2000 Chevy Silverado pick-up that gets 16 mpg in the city and 20 mpg on the highway. I could trade my Silverado in for a 2009 Chevy Malibu Hybrid that gets 26 mpg in the city and 34 mpg on the highway. This is a significant improvement in mileage and would have allowed me a \$4500 credit from Cash for Clunkers. As the program worked, my Silverado would have been destroyed and that was that.

However, let's suppose my brother-in-law owns a 1985 GMC Suburban that gets 12 mpg in the city and 15 mpg on the highway. Being laid off as a result of the Great Recession, he could not afford the \$20,000 or so he would need to add to the Cash for Clunkers credit in order to buy a qualifying new car. What if the government had sold my clunker Silverado to my brother-in-law to replace his super-clunker Suburban? And what if the government charged, say, \$2500 for the Silverado instead of destroying it? Then, our societal savings would be 41% greater (the net mileage improvement of the Malibu over the Suburban rather than the Silverado) and the taxpayers' cost would be reduced from \$4500 to \$2000, a 56% reduction.

Combining two good ideas (Cash for Clunkers and basic recycling) gives us an even better idea. Next time we do such a program, let's try to get more from it.

## Waste Reduction Technique of the Month

### Account for the Cost of Waste



Traditional accounting practices have included many types of costs of doing business in the category "Overhead." Usually, costs associated with heating and cooling the facility and costs of disposing of solid wastes were counted in this category. Including such costs in Overhead made sense when these costs were very low and were related to all the company's processes. With the dramatic increase in energy and waste disposal costs in the past couple of decades, including these costs in Overhead has become less desirable. Nowadays most companies have broken these costs out of Overhead and are tracking them separately. Not only does keeping track of these costs separately make sense in appropriately allocating costs to profit centers, it also makes great sense in terms of monitoring the environmental costs of doing business.

Once you know how much is being spent monthly to heat and cool your building, you can begin to focus on how to reduce this cost. Perhaps you can justify adding insulation to the building's walls and ceilings to cut the energy cost. Having the information available to you helps you make decisions about when you should consider replacing older inefficient models of heaters and air conditioners with newer energy-miser models. Such decisions are quite difficult without having the cost data available.

Knowledge of the cost of disposing of one ton of solid waste can help you quantify the savings achievable by implementing a recycling program, eliminating some packaging, or improving a process to reduce the amount of scrap produced.

Alas, just accounting for such costs is not enough. You still have to envision opportunities for improvement and research the particulars of the options. Still, it is great to know that you can be leaner (spending less money on energy and waste disposal) while also being greener (using less of Earth's finite energy reserves, creating less greenhouse gasses, and contributing less material to the filling of our landfills). This is just one example of the synergy of lean and green operations. This is just one technique for enhancing your company's long-term economic and environmental sustainability.

ZWORC is dedicated to helping organizations achieve this level of long-term sustainability.

### *Did You Know ... ?*

*The State of Hawaii has no natural sources of petroleum or natural gas and has no hydroelectric dams or nuclear energy production. Currently, virtually all its electricity is produced from imported petroleum products. A plan to reduce the state's reliance on foreign oil 70% by 2030 was approved in 2008 (New York Times, Dec. 2, 2008). Luckily, the state does have ample sunshine, sustained winds, strong tides, geothermal activity, and ocean thermal differentials. The opportunities are there. ZWORC wonders if the 50th state can be the first to reach a sustainable energy future.*

## Founder's Corner

# Learning from Others

By Paul McCright



On a recent vacation in Utah, I encountered several good examples of organizations trying to practice sustainability in small ways. One motel where I stayed (River Canyon Lodge in Moab) had posted signs suggesting that towels hung on racks would not be laundered, but that towels placed in the tub or on the floor would be. I have seen similar policies at other hostleries, but paused to think about this policy.

Of course, reduced laundering of linens saves the hotel the cost of buying and heating water and purchasing detergents and electricity to operate the machinery. This can clearly save the business at least a few loads of laundry each week and the associated costs. At the same time, the hotel is reducing its carbon footprint and saving water, a very precious resource in such a desert region. I would expect since housekeepers have fewer linens to cart around and fewer loads of laundry to handle they are able to spend more time providing service to the hotel patrons.

National parks in the area were also making their contributions to sustainability. Both Arches and Canyonlands National Parks invited visitors to recycle their visitor brochures, thereby reducing the number of new brochures needing to be printed and the number of brochures eventually reaching the waste stream somewhere. Zion and Bryce Canyon National Parks are operating free shuttle buses into the main regions of the parks (costs covered by a higher entrance fee for all). This reduces congestion making park attractions easier to see, reduces the number of parking spots necessary, and reduces pollution from thousands of automobiles each year.

Whether the motivation for all these efforts was cost-savings, service improvement, or enhanced environmental responsibility, who cares? All three positive effects were achieved. The hotel and parks are contributing to both organizational sustainability and global sustainability. Kudos to all!

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