

# Winslow Environmental News

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## WORLD ENERGY: THE EBAY OF CAP AND TRADE?

BY ELLEN PFEIFER

"Seventy...I hear Seventy dollars...Do I hear Seventy five?...Come now, are you going to

### WorldEnergy

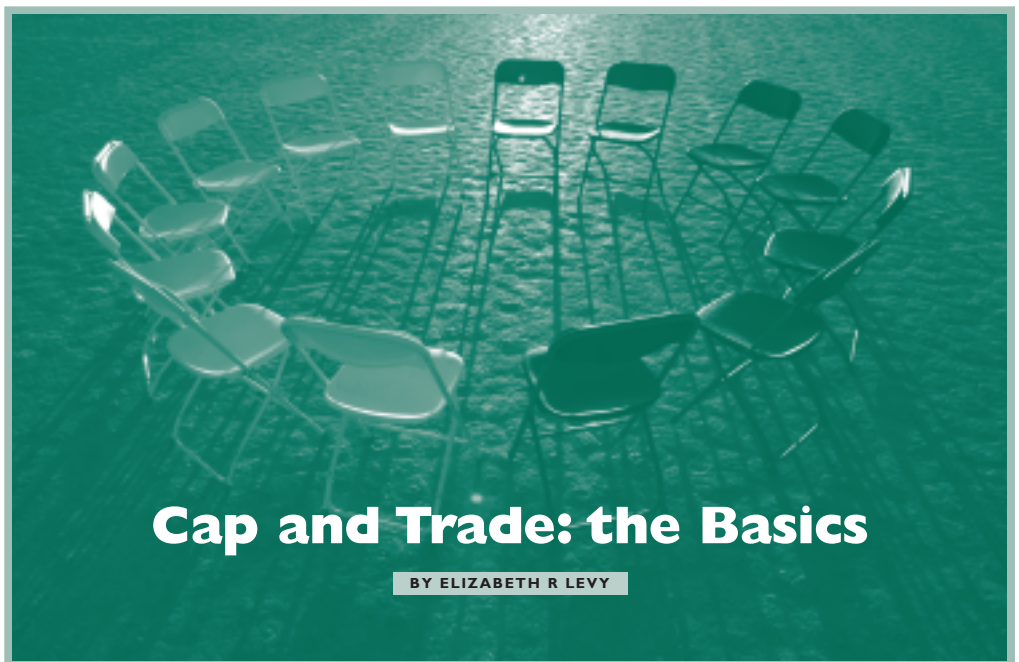
stop here?...You, there, with your hand on your head. ...Is that seventy five?...Yes, seventy five...going once...going twice...going three times...Sold!"

While perhaps lacking the same dramatic flair, there is still plenty of excitement when World Energy Solutions Inc. (TSX:XWE) auctions off Renewable Energy Credits (RECs), verified emissions reductions (VERs), carbon emission offsets, and energy supplies on their online exchanges.

Consider, for example, the recent auction of 1500 solar RECs

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*The phrase "cap and trade" has escaped from the realm of enviro-policy wonks and is increasingly showing up in the news and on the campaign trail as the likely form of future climate change regulation. Already a global force as the backbone of the Kyoto Protocol, cap and trade is now generally supported by both major-party presidential candidates, and several proposed cap and trade bills are bouncing around Congress. But what is it? In this issue of Winslow Environmental News, we dig into what a cap and trade system is, how it works and what might be some of its impacts.*



## Cap and Trade: the Basics

BY ELIZABETH R LEVY

In this article we lay out the basics: where cap and trade came from, why it's seen as a good idea for fighting climate change, and what unresolved issues will need to be addressed. We won't go into specific details about any of the current proposals, as the rule that eventually is adopted is sure to be different from any of these.

**"Market-based" vs. "Command and Control"**

Before diving in, here's a quick history lesson on

environmental policy. The earliest generation of policies achieved their goal by mandating specific emission limits or technologies, earning the nickname "command and control." For example, the Clean Air Act not only identified standards for air pollution, but went further to require specific technology for use in correcting that pollution.

A newer generation of environmental policies, on the other hand, lets the market forces of supply

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MARKETBEAT PAGE 2

### Calculating the Upside GHG Cap & Trade

Penalizing polluters, rewarding good practices: what does it mean for investors?



PORTFOLIO UPDATE PAGE 6

### Chipotle Commits to Natural Chix

Chipotle Mexican Grill begins serving only "humanely raised" chicken

## WINSLOW JOINS THE U.S. GREEN BUILDING COUNCIL

Winslow recently joined the U.S. Green Building Council (USGBC), the leading non-profit organization in the U.S. focused on advancing the concept of environmentally responsible buildings. Founded in 1993, the USGBC is best known for developing the LEED (Leadership in Energy and Environmental Design) Green Building Rating System, the nationally accepted benchmark for the design, construction and operation of high performance green buildings. So why would an investment company join an architecture and construction trade association?

"Winslow is a big believer in the importance of green buildings as a key solution to climate change and other environmental challenges. So we're very pleased to support the innovative efforts of the U.S. Green Building Council," said Matt Patsky, Portfolio Manager and Partner at Winslow. "Our investment portfolios include a variety of companies within the green buildings industry -- energy-efficient lighting companies, geothermal HVAC companies, recycled office furniture companies and modular carpeting companies, to name a few. The Council's efforts have helped to create exciting new opportunities for these companies, while also setting the stage for a major shift towards more environmentally responsible development in this country."

If you are interested in joining the U.S. Green Building Council or learning more about the LEED certification program, visit the USGBC website at [www.usgbc.org](http://www.usgbc.org).

MARKETBEAT

# CAP AND TRADE: MARKET IMPACTS

BY JACKSON W. ROBINSON

The investment implications of a federal cap and trade system in the United States are numerous, far reaching, and certain to be long-lasting.

Now that the scientific debate over climate change has largely been settled, the calls for action to reduce our greenhouse gas (GHG) emissions are rising in number and volume. Simultaneously, American consumers are suffering sticker shock at the gasoline pump and with each more costly utility bill. Taken together, rising energy prices and growing climate awareness are driving changes in purchasing patterns as consumers seek environmental and energy solutions.

With voluntary fossil fuel reductions showing limited success and no political appetite for a direct carbon tax, the best potential solution is shaping up to be a cap and trade system that penalizes the polluters and rewards those reducing their GHG emissions, similar to the one that began in the European Union in 2005. While politicians rarely agree on anything, as of late July, both Barack Obama and John McCain have endorsed a cap and trade program, described elsewhere in this issue of *Winslow Environmental News*.

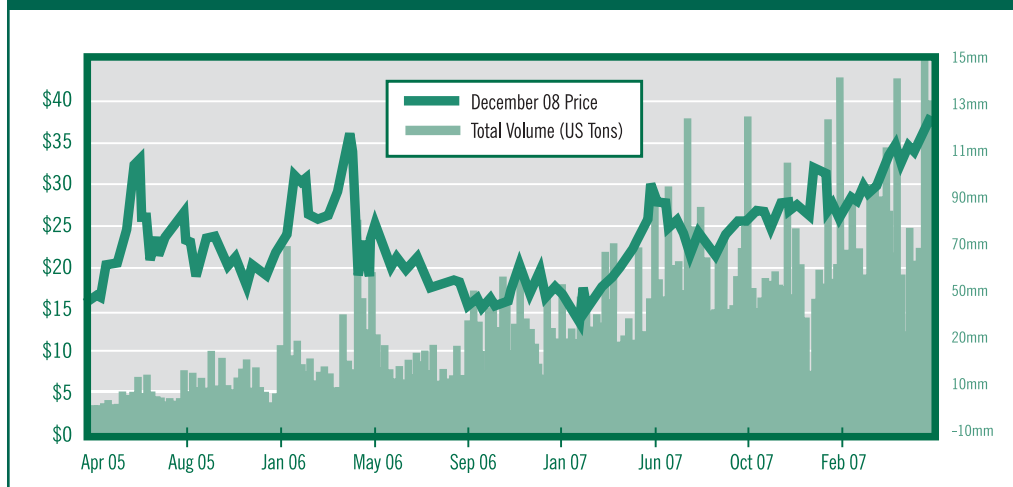
Although a cap and trade program will not be a short term economic fix for consumers or users of fossil fuels, we believe it can be a cornerstone of a long term, sustainable energy policy. While there is broad based and growing support in the U.S. for a cap and trade program to reduce GHGs, the devil is surely in the details which are complex, numerous and rigorously debated. For example, while McCain and Obama both share the goal of reducing GHG emissions, they are espousing quite differ-

ent emissions targets. McCain is advocating a 60% reduction in GHG emissions below 2004 levels while Obama has advocated for an 80% reduction from 1990 levels. And so while the details are still far from settled, there are clear investment opportunities that we believe will derive from any cap and trade program.

Starved for cash, the lure of auctioning off valuable carbon credits in a huge new market is appealing to our government. According to Peter Fusaro, co-founder of the New York-based Energy Hedge Fund Center, the annual value of the domestic market for GHG emission allocations, often called carbon credits, could reach three trillion dollars, as described in the May issue of *Institutional Investor Magazine*. This is a mouth-watering source of new revenue for any government, and such a sizeable new market holds out promise to many new green business opportunities.

The design of the E.U.'s initial cap and trade system, which ran from 2005 through 2007, had some serious flaws. First, far too many credits were issued initially, leading to upheaval in prices for credits used to comply with the first emissions deadline in 2007. In addition, the permits were all allocated to emitters for free, rather than being auctioned off, leading to increased energy prices for consumers and windfall profits for utilities. However, this first attempt, and the revisions to the system for the second phase from 2008 through 2012, is a good starting point and example of what we can expect in the U.S., especially in terms of pricing. As shown in the chart, credits (measured in tons) for 2008 settlement in the European

## EU Emissions Trading Scheme



scheme, called Emissions Trading Scheme (ETS) allowances, initially traded slightly above \$20/ton on a U.S. dollar converted basis. Since then, they have generally traded in a range of \$20-40 a ton, averaging \$30/ton until recently, when the credits began trading solidly in the low \$40's.

The financial impact of pricing carbon and other GHG emissions is not inconsequential. In April 2008, the Energy Information Administration (EIA) analyzed the Lieberman-Warner Climate Security Act of 2007, comparing energy costs under a variety of carbon pricing scenarios. Their "core case" assumed that carbon would cost \$30/ton in 2020, rising to \$61/ton in 2030. On a per-BTU basis, when comparing the core scenario to a reference scenario with free carbon, coal-generated electricity would cost an astonishing 161% more in 2020 and 305% more in 2030. However, under the same assumptions, the overall cost of electricity increases only 5% in 2020 and 11% in 2030 as the amount of coal used declines. EIA estimates that without a charge for carbon, coal would continue to contribute approximately 50% of the domestic electricity supply in both 2020 and 2030, but that it would drop to 40% in 2020 at \$30/ton and only 14% in 2030 at \$61/ton, dampening expensive coal-based electricity's impact on overall electricity

prices. In addition, the absolute amount of electricity generated from coal would fall as well, not just the percentage contribution. Under the core case, the amount of electricity generated from burning coal drops 5% between 2006 and 2020 and an additional 62% between 2020 and 2030, forcing utilities to abandon or retrofit existing coal fired power plants – both expensive propositions.

Not wanting to be subjected to significantly higher power prices from their fossil fuel-based electric utilities, commercial, industrial and retail customers have an increasing number of energy-producing and emissions-reducing options that include, but are by no means limited to, conserving energy, increasing efficiency or producing their own renewable power. \$4+ for a gallon of gasoline has led to consumers driving less, while energizing the demand for public transportation and more efficient vehicles. While the response to a phased-in cap and trade system will not be immediate, a clear price signal for GHG pollution will allow decision makers to include this cost in their plans and reduce the overall amount of emissions. We believe that this transition, while requiring a huge amount of investment capital, will spawn many new green investment opportunities. □

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**Starved for cash, the lure of auctioning off valuable carbon credits in a huge new market is appealing to our government.**

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**In the case of a client seeking the most economical supply of electrical power, a reverse World Energy auction pits competing power generators against each other.**

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WORLD ENERGY continued from page 1

proffered by a New Jersey-based broker that helps renewable energy projects find financing. World Energy not only helped establish an expected price range for the RECs, but hosted an auction that attracted all three New Jersey public utilities, each hoping to use the credits to comply with the state's Renewable Portfolio Standard. As the seconds ticked by, 15 bids were placed – each visible to the competing bidders. The pressure was on to bid higher. When the dust settled, the winning bid came in at \$247 per credit – an increase of 25% over the estimated range of \$180--\$200.

#### **Young Company Stakes Out Turf in New Market**

Worcester, MA-based World Energy was formed in 2001 to capitalize on the new ability of energy consumers to choose their electricity suppliers through deregulation of the electricity industry. The energy and environmental commodities brokerage company operates two online auction platforms, the World Energy Exchange and the newer World Green Exchange, created in 2007. According to World Energy, the company identifies its core competency as “brokering electricity,” but “adapted its World Energy Exchange auction platform to accommodate the brokering of natural gas (as of 2002) and green power (2003).” The company

went public in 2006, registering on the Toronto exchange.

World Energy's auction platform is an elegant and simple idea in a complex and still-emerging market. It can work in both forward mode, such as the solar RECs auction described above, or reverse mode, depending on the client. A reverse World Energy auction, for a client seeking the most economical supply of electrical power, pits competing power generators against each other. Each bidder can see what the others have tendered and are encouraged to bid lower. Usually, the client will end up with a much better deal than it would have gotten if it had just asked for paper proposals and sealed bids from suppliers. For example, in May, the city of Springfield, MA, was able to secure a \$47.5 million, 60-month supply of electricity through a World Energy auction – saving itself \$500,000 or 5% of what it had budgeted for energy.

#### **Dedicated Platform for Environmental Commodities**

World Energy launched its dedicated World Green Exchange in February 2008, seeing a genuine opportunity to jump into this still immature market. As CEO Rich Domaleski put it, “In illiquid and opaque markets, the auction process has achieved better results than traditional methods...It provides a superior price discovery mechanism by

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## **SOME GOOD NEWS**

In late June, the environment scored a too-rare major victory, as U.S. Sugar Corp. agreed to give up nearly 300 square miles of agricultural land in the Florida Everglades. The agreement is not scheduled to be finalized until November, but environmentalists are hailing it as a huge step in restoring the Everglades.

Under the deal, U.S. Sugar will sell 187,000 acres used to grow sugar cane to the state of Florida for \$1.7 billion in exchange for rent-free usage for six years. After that time, however, the company, long known as “Big Sugar,” will no longer operate, and the land will be converted back to marsh, thus allowing for better water flow.

If the deal is consummated, according to the *Florida Sun-Sentinel*, “it would restore the primeval link between Lake Okeechobee and the Everglades, allowing a simpler method of moving water through the marshes than the elaborate waterworks of a planned restoration project.”

Restoration plans for the area will need to be redrawn to reflect the agreement and may be delayed until the state controls the land. However, environmentalists are much cheered by this example of business and government working together to provide an enormous ecological benefit.

enabling buyers and sellers to see what the market will command in real time, thus allowing the true forces of market competition to deliver the efficient pricing result.”

Through its Green Exchange, the company recently facilitated the first compliance-based auction of carbon offsets in North America, selling 88,184 tons of carbon offsets for Canada’s Verdant Energy as part of Alberta’s Offset System. According to Phil Adams, President and COO of World Energy, the bidding

process “achieved a significant premium to the quotes Verdant had received from brokers before the auction.”

### Big Regional Opportunity

In the absence of federal regulation of CO<sub>2</sub> emissions, 10 Northeastern and Mid-Atlantic states have formed the Regional Greenhouse Gas Initiative (RGGI), agreeing to reduce greenhouse gases from power plants. Through a cap-and-trade program, power companies within the RGGI area will be mandated to reduce their emissions to a certain level and purchase permits or allowances for those emissions. Those able to go below their target will have surplus permits or credits available to sell; those that can’t achieve their target will need to purchase additional credits or pay a fine.

Initially, the participating states in RGGI had considered allocating the permits for free to the power generating facilities. But the states chose instead to auction off the allowances; the first auction is set for the fall of 2008, with subsequent auctions quarterly. Not surprising, given its experience in auction transactions, World Energy was chosen this spring to conduct this first-ever CO<sub>2</sub>

allowance auction in the U.S.

Interestingly, the first auction will be open to all market participants, and a Climate and Energy news alert published by the law firm Brown Rudnick explains that this includes “any power

plant wherever located, as well as brokers, environmental groups and financial and investment institutions.”

According to Brown Rudnick, proceeds from the auction of allowances will go to the states, and the states are under an obligation to utilize some portion of the

funds for public benefits. “Most states have earmarked substantial portions...for support of renewable energy projects, energy efficiency and other similar activities.”

### Validation for World Energy

The selection by RGGI was one of the highlights of World Energy’s accomplishments in the first quarter of 2008, and company leaders were clearly elated at the designation. “This is a huge validation for us and puts us on the map in a way no other contract could,” said Adams during the quarterly conference call on May 8. “The initial contract is for a two-year term during which we will auction off [permits for] 188 million CO<sub>2</sub> short tons annually.”

In addition, Adams asserted that this deal will establish relationships for the company with 250 emitters subject to RGGI regulations - emitters that might become repeat clients once trading of emissions credits commences during the compliance period beginning in January 2009. Best of all: “this positions us well for other US regional initiatives and any potential national cap and trade program.” □



*The World Energy online auction platform serves energy buyers and suppliers alike, including the green energy marketplace.*

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## PORTFOLIO UPDATE

### Water Furnace Renewable Energy (TSX:WFI)

FORT WAYNE, IN – WFI Industries Ltd., a leading manufacturer of geothermal heating, air conditioning and air purification systems, announced in June that the company has changed its name to WaterFurnace Renewable Energy, Inc. The name change was approved at the shareholders meeting held at the company's headquarters on May 15th.

The company will retain the Toronto Stock Exchange symbol WFI. Tim Shields, Chairman of the Board, stated, "The Board and the Shareholders are very pleased with the Company's position in the renewable energy field. Our products offer a green alternative to conventional heating and air conditioning. WaterFurnace products provide better comfort, reduced energy costs and reduced dependence on foreign sources of energy. Our new name reflects our continued commitment to the renewable energy marketplace."

### Chipotle Mexican Grill

(NYSE:CMG)

DENVER, CO – In May, Chipotle

Mexican Grill announced that it had reached the milestone of serving only naturally raised chicken, which according to Chipotle means "humanely raised, never given antibiotics or added growth hormones (or drugs that act like hormones), and fed a pure vegetarian diet with no animal by-products." In addition to all of the chicken and pork served, 60% of the beef served at Chipotle restaurants is now naturally raised.

The Associated Press reported in June that Chipotle has also increased its commitment to using local ingredients by pledging to purchase at least 25% of one produce item used in each Chipotle restaurant – such as lettuce, onions or peppers – from smaller local farms during this summer's growing season.

According to the AP, Ann Daniels, Chipotle's executive director of purchasing, commented that using more local ingredients will lower expenses in some cases and raise them in others, but food costs won't significantly change either way.

"Ultimately this is changing the way the world thinks about and eats fast food," Chipotle Chief Executive and Founder Steve Ells said. "It's not an easy project but very worthwhile."

### Energy Conversion Devices, Inc. (NASDAQ:ENER)

ROCHESTER HILLS, MI – In May, Energy Conversion Devices, Inc. (ECD) a leading global manufacturer of thin-film flexible solar laminate products for the construction of integrated and commercial rooftop markets,

announced it had reached profitability and confirmed that it would expand nameplate capacity at its Greenville, MI, facility.

In announcing the company's fiscal third quarter results, Mark Morelli, ECD's president and chief executive officer, commented, "I'm pleased to report that we've reached profitability, and we've done so through sustainable changes to our business. This is a key milestone in our company's history, and a testament to the commitment and hard work of our colleagues."

ECD's United Solar Ovonic division produced 21.6 megawatts in the third quarter and 47.4 MW for the first nine months of the fiscal year. The company confirmed its plans to expand and add 120MW of additional nameplate capacity to its existing Greenville facilities. This expansion will increase the company's nameplate capacity to approximately 300MW by the end of fiscal year 2010. In late June, the company raised \$400 million in common stock and convertible debt to fund the expansion, with the goal of reaching 1 GW of capacity by 2012.

### Orbcomm, Inc.

(NASDAQ:ORBC)

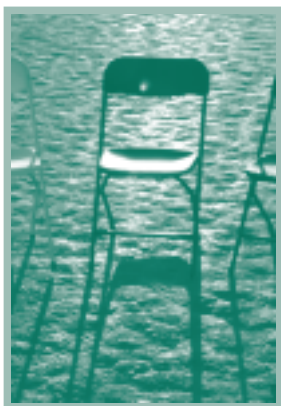
FORT LEE, NJ – ORBCOMM Inc., a global satellite data communications company focused on providing two way Machine-to-Machine (M2M) communications, announced in June that six new ORBCOMM satellites were successfully launched from Kapustin Yar, Russia. By means of a global network of 29 low-earth orbit (LEO) satellites and accompanying

ground infrastructure, ORBCOMM's low-cost and reliable two-way data communications products and services track, monitor and control mobile and fixed assets in four core markets: commercial transportation; heavy equipment; industrial fixed assets; and marine/homeland security. The company's products are installed on trucks, containers, marine vessels, locomotives, backhoes, utility meters, storage tanks and other assets.

The six satellites will be positioned optimally to augment the existing ORBCOMM constellation, providing additional capacity and improved message delivery speeds for current and future ORBCOMM users. In addition, these satellites are equipped with Automatic Identification System (AIS) payloads, which will enable them to receive and report AIS transmissions to be used for ship tracking and other navigational activities. ORBCOMM has been working closely with the US Coast Guard on the AIS project, and also intends to market AIS data to other U.S. and international government agencies, as well as to companies whose businesses require such information.

"This is an important step for us and our customers," said Marc Eisenberg, ORBCOMM's CEO. "With the successful launch of these six new satellites, we expect to both improve the quality of our service and enter the [Automatic Identification System] data services business. The AIS capability onboard these satellites make ORBCOMM the only company capable of providing space-based worldwide commercial AIS data."

and demand guide participants toward desired behaviors. These more flexible regulations encourage broad-based emissions reductions in a more efficient manner, and generally are most effective when the location of a source of pollution – such as greenhouse gas emissions – does not affect its impact. Cap and trade, the most prominent market-based approach, was introduced in the 1990 Clean Air Act Amendments, establishing tradable SO<sub>2</sub> credits to reduce acid rain. According to the Environmental Protection Agency, the Acid Rain Program has been a resounding success, reducing the amount of SO<sub>2</sub> emissions faster and much more cheaply than expected, with benefits exceeding the cost of the program by more than 40:1, as calculated by the Office of Management and Budget. With this successful program as a model, regulators around the globe have looked to cap and trade as the most promising mechanism to control greenhouse gas emissions and halt climate change.



### How it Works

An easy metaphor to understand cap and trade programs was created by Dr. Holmes Hummel, a Congressional Science Fellow (see the end of this article for more information). Dr. Hummel compared cap and trade to a giant game of musical chairs. Imagine a group of participants that want to emit 100 tons of CO<sub>2</sub> between them. If permits are issued for producing one ton of CO<sub>2</sub>, then each permit is like a chair in the game. Before the program starts, there are enough chairs for everyone since there are no limits. However, during the first year of the program, the cap is set at 99 tons so there are now only 99 chairs available. Suddenly, everyone's ability to emit greenhouse gases just shrank a little bit – in other words, there aren't enough chairs to go around. So each chair,

or permit, just got a little more valuable on the open market. The participants in the program have two choices: reduce their pollution so they don't need a chair, or pay someone else for their chair. As compared to being told what to do by the government under command and control, Dr. Hummel points out, "Cap and trade lets players choose at what price they leave the game – and how they want to make that change."

Each year of the cap and trade program is like a different round in the game and more chairs are taken away until the emissions level is acceptable – say a 50% reduction by 2050, as a number of national science academies recommended in early June. The price of a permit each year is determined by the amount that the program participants are willing to pay. As permits

become scarcer in later years, participants will either have to radically change the way they operate to reduce emissions or pay a drastically higher price for each permit.

### The Details...

Not surprisingly, the details of this simple-sounding regulatory program get very complicated, very quickly. While we believe that a cap and trade program is likely to be signed into law by the next president, the knotty intricacies of such a program have yet to be unraveled and represent some of the stickiest of sticking points.

The fiercest debate is whether credits should be allocated for free according to historical emissions, or auctioned to the highest bidder. Allocation proponents, including most representatives of the polluters who would need permits, argue that free credits would avert dramatically higher prices for consumers, especially in the early years. Auction advocates, on the other hand, point out that giving polluters an asset with financial value for free

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# Winslow Environmental News

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essentially grants them a windfall profit, which seems to be the actual result of Europe's first cap and trade cycle (see Marketbeat). They argue further that the revenue earned by auctioning off permits could be used to balance other costs to consumers.

Other items of debate include:

- **Offsets** – should credits from reductions made outside of the system, like planting trees on previously unforested land, count? How will they be verified?
- **Banking** – can credits from one year be saved and used in later years? Can credits from later years be used earlier?
- **“Safety valve”** – if credits get very expensive, should the price be capped, should more permits be added to the system to promote economic stability or should prices be allowed to rise to their equilibrium state to

ensure environmental benefits?

- **Coverage** – which economic sectors should be included in the program? It's not practical to require all drivers to have credits for their cars, so how should vehicle emissions be included?

When enacted, a cap and trade system will have enormous impacts on both the environment and the economy. A poorly crafted system, detractors fear, could raise energy prices and wreak economic havoc. A well designed one, however, may be our best hope to grow our economy sustainably and avoid the worst geopolitical and physical impacts of climate change – the best of both worlds. The coming months are sure to be filled with much interesting climate change debate that will, we hope, result in a sound policy. □

*For more information see: EPA's Clean Air Market Programs at [www.epa.gov/airmarkets](http://www.epa.gov/airmarkets); Dr. Holmes Hummel's "An Introduction to Cap-and-Trade Climate Policy" at <http://www.thunks.net>.*



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