

An Overview of Cap and Trade and Carbon Trading

By: Joseph Roos, CINTRAFOR, Valerie Barber, University of Alaska and Allen Brackley, USDA Forest Service

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The United States is currently debating stricter regulations on carbon emissions. This movement can be seen in both the regulatory agencies and the legislature. On April 17, 2009, the Environmental Protection Agency formally announced that it had found that carbon dioxide emissions pose a threat to public health. This announcement was significant because it gives the executive branch the authority to impose carbon regulations on carbon-intensive industries. In the legislative branch, three bills have been proposed that address greenhouse gas (GHG) emissions. The first is The American Clean Energy and Security Act, also known as the Waxman-Markey Bill in the House. The second is American Power Act, also known as the Kerry-Lieberman Bill in The Senate. The Waxman-Markey bill calls for a 20 percent reduction in greenhouse gas emissions from

The majority of U.S. GHG emissions are caused by fossil fuel combustion, which accounted for 80 percent of the 2007 total. The goal of the Kyoto Protocol was to reduce GHG emissions of its signatory nations by 5 percent below 1990 levels. Although the United States is not bound by the Kyoto Protocol requirements, it is interesting to note that U.S. emissions between 1990 and 2007 increased by 17 percent. In 2007 the largest source of emissions in the United States was transportation, followed by the industrial, residential, and commercial sectors (Figure 1).

The transportation sector comprises 33 percent of total U.S. CO₂ emissions. Transportation emissions rose by 29 percent between 1990 and 2007. According to the EPA, this increase can be attributed to increased demand for travel and the stagnation of fuel efficiency of U.S. vehicles. The largest sources of transportation GHGs in 2007 were passenger cars (33 percent), light duty trucks, which include sport utility vehicles, pickup trucks, and minivans (28 percent), freight trucks (21 percent), and commercial aircraft (8 percent). It is interesting to note that passenger car and light duty trucks increased by 40 percent due to population growth, economic growth, urban-sprawl, and lower fuel prices (EPA 2009c).

The transportation sector is followed by the industrial sector, which is the second largest emitting category. In 2007, the industrial sector accounted for 28 percent of total U.S. emissions. Overall, industrial sector emissions have declined since 1990. This reflects a shift in the U.S. economy from heavy industries such as steel to lighter industries such as technology. While industrial sector emissions have declined in the United States, industrial sector emissions have increased in developing countries such as China as heavy industrial production shifts from the United States to developing countries.

The third category is the residential sector, which comprised 21 percent of total U.S. emissions in 2007. The residential sector includes all emissions arising from residential activity including HVAC (heating, ventilation, and air conditioning), cooking,

Table 1. US Carbon Emission

Gas/source	1990	1995	2000	2005	2006	2007
	<i>Teragrams CO₂e</i>					
Carbon dioxide (CO ₂)	5,076.7	5,407.9	5,955.2	6,090.8	6,014.9	6,103.4
Methane (CH ₄)	616.6	615.8	591.1	561.7	582.0	585.3
Nitrous oxide (N ₂ O)	315.0	334.1	329.2	315.9	312.1	311.9
Hydrofluorocarbons (HFC)	36.9	61.8	100.1	116.1	119.1	125.5
Perfluorinated compounds (PFC)	20.8	15.6	13.5	6.2	6.0	7.5
Sulphur hexafluoride (SF ₆)	32.8	28.1	19.2	17.9	17.0	16.5
Total	6,098.7	6,463.3	7,008.2	7,108.6	7,051.1	7,150.1

Source: EPA 2010

2005 levels by 2020 and the Kerry-Lieberman bill calls for a 17 percent reduction over the same period. The Waxman-Markey bill also sets a mandate for renewable energy, requiring 25 percent of all energy sold to be sourced from renewable energy by 2025. However, both these bills appear to be temporarily shelved in favor of an energy bill proposed by Senate Majority Leader Harry Reid, which promotes natural gas and does not include cap and trade or renewable energy mandates.

U.S. Carbon Emission Sources

The EPA provides estimates for carbon dioxide emissions in the United States. The unit of measurement used by the EPA is teragrams of carbon dioxide equivalents (T_GCO₂e). A carbon dioxide equivalent (CO₂e) measures each gas by its global warming potential (GWP) which is the universal standard of measurement. A GWP is based on the ability of each GHG to trap heat in the atmosphere relative to an equivalent unit of carbon dioxide over a specified period of time. According to EPA estimates, total greenhouse gas emissions in the United States in 2007 were 7150.1 T_GCO₂e. (Table 1).

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Director's Notes

University of Washington
School of Forest Resources
Box 352100
Seattle, Washington
98195-2100
Phone: 206-543-8684
Fax: 206-685-0790
www.cintrafor.org

The Center for International Trade in Forest Products addresses opportunities and problems related to the international trade of wood and fiber products. Emphasizing forest economics and policy impacts, international marketing, technology developments, and value-added forest products, CINTRAFOR's work results in a variety of publications, professional gatherings, and consultations with public policy makers, industry representatives, and community members.

Located in the Pacific Northwest, CINTRAFOR is administered through the School of Forest Resources at the University of Washington under the guidance of an Executive Board representing both large and small companies, agencies, and academics. It is supported by state, federal, and private grants. The Center's interdisciplinary research is carried out by university faculty and graduate students, internal staff, and through cooperative arrangements with professional groups and individuals.

The start of the US economic crisis in late 2006 resulted in a steep plunge in housing starts and a dramatic decline in the demand for wood products in the US. As a result, US wood manufacturers, many of whom had abandoned international markets during the housing boom, began to look offshore for new markets for their products. US wood exports were up by 4.1% in 2007 largely because the US economic crisis took time to spread throughout the global economy. Global GDP growth, which fell to 3.0% in 2008, actually contracted by 0.6% in 2009 (although it is projected to grow by 4.6% in 2010). As a result of the slowing global economy, US wood exports dropped by 0.4% in 2008 and by 19.8% in 2009, reaching their lowest level since 2003.

The first half of 2010 has seen a significant turnaround relative to the first half of 2009. US exports of wood products during the first half of 2010 increased by 30.8% to reach \$4.2 billion, making the US the fourth largest exporter of wood products behind China, Canada and Germany. US wood exports showed double digit increases in virtually every product category, Table 1. The two biggest export categories were lumber (up by 24.5%) followed by logs (up by 54.8%), with these two products accounting for 46% of total US wood exports. However, the export data shows that the share of processed wood products increased while the share of logs in the export mix declined slightly in 2010. For example, while the share of lumber increased from 27% to 31.6% and plywood increased from 3.5% to 5.5%, the share of logs in the export mix dropped from 27.8% to 26.2%. Overall, the share of value added wood products in the mix of US wood exports totaled 41.4% in the first half of 2010.

The biggest markets for US wood exports were Canada (32.5% share) followed by China (14.4%) share) and Japan (9.3% share), Table 2. The two fastest growing markets for US wood products were China and Vietnam, where US exports increased by 125% and

Table 1. US Exports of Wood Products, January-June 2010.

	Value	% Change 2010/2009
Lumber	\$1,049,327,211	24.5%
Logs	\$870,469,012	54.8%
Prefab Buildings	\$435,533,336	17.5%
Wooden Furniture	\$409,561,067	22.4%
Builders Joinery	\$209,140,565	36.6%
Plywood	\$183,127,194	16.7%
Veneer	\$165,334,613	107.5%
FB	\$125,924,230	34.7%
Mouldings	\$123,218,019	4.90%
PB	\$75,424,213	53.0%
Total US Wood Exports	\$4,167,524,299	30.8%

86%, respectively during the first half of 2010. To a large extent, these increases can be attributed to strong economic growth in these countries, both of which have large export oriented wood processing sectors that rely heavily on imported wood for their raw material supply. Economic growth in Vietnam was 5.3% in 2009 and it is projected to reach 7% in 2010 while in China it reached 8.5% in 2009 and it is projected to reach 10.5 in 2010.

Table 2. US Exports of Wood Products, by country, January-June 2010.

	Value	% Change 2010/2009	Market Share
Canada	\$1,078,826,360	26.2%	32.5%
China	\$479,831,532	124.6%	14.4%
Japan	\$310,553,664	18.9%	9.3%
Mexico	\$237,037,191	11.8%	7.1%
South Korea	\$109,886,951	17.2%	3.3%
United Kingdom	\$101,486,898	18.5%	3.1%
Italy	\$93,519,735	29.1%	2.8%
Vietnam	\$79,779,304	86.4%	2.4%
Germany	\$78,287,472	28.0%	2.4%

What is surprising is that the increase in US exports in 2010 cannot be attributed to a weak US dollar relative to the currencies of our major wood exporting competitors (Canada and Europe). For example, the US dollar weakened by just 0.4% relative to the Canadian dollar and actually strengthened by 11% relative to the Euro during the first half of 2010. So, to what can we attribute the strong performance of the US wood products sector?

There are a few factors that have helped spur US export growth in 2010. Perhaps the most obvious factor is continued uncertainty about Russia and the long delayed increase in the log export tax. The Russian log export tax, currently set at 25%, has been scheduled for a couple of years to jump to 80%. As a result, Russian log exports have declined precipitously from 51.1 million m3 in 2006 to just 21.5 million m3 in 2009. However, the tax increase has been delayed twice already and is currently scheduled to be implemented in January 2011, although Russian authorities have hinted that it may be delayed to 2012. Despite this string of delays, Russian authorities continue to assert that the log export tax will be increased to 80% when market conditions permit. The continued uncertainty over the tax has caused many customers in China, S. Korea and Vietnam (among others) to look elsewhere for a reliable supply of logs. As a result, US log exports to these countries jumped by 144%, 12.6% and 33% in the first half of 2010.

A second, less obvious factor, has been the implementation of public procurement policies in major wood consuming countries, including Japan, the US and the EU, that require that all wood products imports be sourced from legally harvested timber. Anecdotal information obtained from informal interviews with Chinese and Vietnamese wood manufacturers suggests that many of their customers in countries with public procurement policies in place are concerned about importing wood products manufactured from wood sourced from countries where illegal logging is a problem. One strategy to minimize the risk of unintentionally introducing illegally harvested wood into their supply chain is to eliminate all wood sourced from countries where illegal harvesting has been demonstrated to be a

substantial problem. As a result, countries with well managed forests have seen their exports of wood products increase. While this is certainly a factor in the export success of the US in 2010, the degree to which it has contributed to this increase is uncertain.

One program that CINTRAFOR administers has been successful in helping US building material manufacturers access the Chinese market. The US-China Build (USCB) program is a cooperative effort between government and industry designed to help promote US building materials and technologies in China. The US-China Build Program uses a dual strategy of education and promotion to bring together US exporters and Chinese customers with the goal of expanding US exports to China. Half-day seminars provide US companies the opportunity to inform and educate Chinese construction professionals about US building materials, wood frame and hybrid building technologies, design considerations, and US wood species and uses. Each seminar is followed by a mini-trade show that provides US exporters the opportunity to showcase their products and meet face-to-face with Chinese developers, builders and architects. The goals of the USCB program are achieved through twice yearly sales missions and seminars in China, publication of Chinese-language supplier guides, and attendance at US pavilions at Chinese trade shows.

Since the start of the program in 2001, 630 US companies have attended US-China Build programs and 116 US companies have participated as speakers and/or in the mini-trade shows during the week-long trade missions in China. Equally important, over 4,600 Chinese developers and construction professionals have attended the 34 trade mission seminars. As a result of these trade missions, participating US companies have reported making over \$54.8 million in sales of US building materials with Chinese customers. Many of these US companies have also reported signing agreements with Chinese distributors to help market their products in China. Over the past 12 months, USCB participant companies reported selling \$10,131,150 in products in China as a direct result of USCB trade missions in China. Industry participants greatly value these trade missions as a strategy to meet qualified customers in China.

"I have participated in industry missions to thirteen other countries. I was always favorably impressed with the involvement of our industry trade associations. That being said, the US-China Build efforts have taken the idea of industry trade missions for business development to a whole new level... drilling deeper for a better understanding of the customers' needs and expectations; looking harder not just at market opportunities but real products; and conveying a sense of urgency and sincerity of our interest in participating with our Chinese partners." -Texas Forest Products

In summary, a combination of regulatory policies has allowed US forest products firms to get back into the international markets. The key to continued export success for US firms is their ability to convince potential international customers that they are in the market to stay and that they can provide a reliable supply of materials, even after the domestic market rebounds. Given the lukewarm outlook for housing starts over the next two years, this shouldn't be a tough decision for exporters to make. **Q**

and appliance use. Emissions in this category increased between 1990 and 2007, largely reflecting the increase in the U.S. population. Between 1990 and 2007, the U.S. population increased from 250 million to 302 million, which was about a 20 percent increase. It is interesting to note that, while total U.S. GHG emissions have increased from 1990 to 2007, the per capita GHG emissions figure has remained fairly constant.

The commercial sector is non-industrial emissions that arise from commercial activities. As with the residential sector, the commercial sector is heavily reliant on electricity. A majority of emissions in this category come from electricity for lighting, heating, air conditioning, and operating appliances. This category also includes emissions from natural gas, petroleum products, landfills, and wastewater treatment facilities. Overall, this category has increased due to a variety of factors including weather and economic activity.

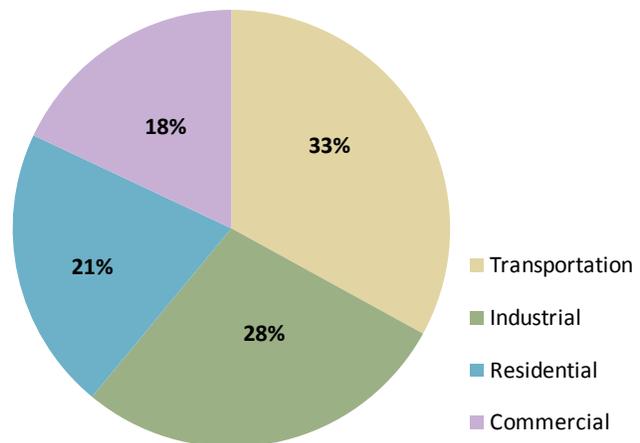


Figure 1. U.S. Carbon Emissions by Sector, 2007.

Source: EPA 2009

Carbon Trading

Under a cap and trade system, permits are issued to emitting entities for the right to emit GHG emissions. The permits are issued at a level designed to meet emission reduction targets over time. If an emitting entity reduces their emissions below the required reduction level, they can then sell their excess permits through carbon exchanges. In addition to emission allowance permits, there are also emission offset credits that can be traded. An offset is defined as the reduction, removal, or avoidance of GHG emissions from a specific project that is then used to compensate for GHG emissions occurring elsewhere (Offset Quality Initiative 2008).

Offsets are an established component of various emission reduction programs including the European Union Emissions Trading Scheme, the Regional Greenhouse Gas Initiative, The Midwestern Greenhouse Gas Reduction Accord, and the Western Climate Initiative. One essential part of any climate change mitigation agreement is establishing strong criteria for GHG

offsets. As an example, the Western Climate Initiative establishes four criteria for including offsets into a climate change mitigation program. The avoidance or removal of a GHG must be real, additional, verifiable, and permanent (WCI 2009). The criterion of “real” assures that the offset results in an actual avoidance or removal of GHGs rather than a project that does not produce actual results beneficial to the environment. The criterion of “additional” assures that the offset reduces or avoids emissions more than a baseline scenario without the project. Furthermore, the offset must be created for the specific purpose of GHG removal or avoidance rather than a project that would have occurred anyway. The criterion of “verifiable” assures that the offsets can be verified by an independent third-party organization. Finally, the criterion of “permanence” assures that a minimum time requirement for the longevity of the offset is included. There are different offset mechanisms to accommodate various GHG reduction programs.

There are four general areas for forestry offset projects: afforestation, reforestation, reduced deforestation, and lifecycle analysis based offsets. Von Hagen and Burnett (2006) categorized these into two categories: land management-based offsets and product-based offsets. Land management-based offsets are those offsets that increase the sequestration of carbon in forests, whereas product substitution-based offsets are those that potentially serve as offsets through the substitution of forest products for higher energy intensive materials that have a greater carbon footprint.

The land management-based offsets include:

- Forest conservation – offsets that prevent deforestation.
- Afforestation – offsets that plant trees on land that has not been forested previously.
- Reforestation – offsets that plant trees in areas that have been harvested.
- Forest management – offsets that aim to increase the biomass of the forest through extended rotations, reducing fire risk through forest thinning, and other forest stewardship practices.

The method of accounting for carbon sequestration from plantation through harvested wood products is called life cycle analysis (LCA). The LCA approach goes beyond the sequestration of carbon in natural forests and includes the carbon stored in harvested wood products and the substitution of energy intensive building products, such as steel and concrete, by wood products (Perez-Garcia et al. 2005). It also accounts for substitution of energy intensive building products such as steel and concrete by less energy intensive wood products. The second category of the von Hagen and Burnett classification of offsets accounts for product-based offsets and can be divided into the following three sub-categories:

- Harvested wood products – offsets that account for the carbon being sequestered in manufactured wood products.

- Material substitution – offsets that account for the substitution effect of utilizing wood building products in place of other building products that are non-renewable and do not sequester carbon. In addition to the sequestration within the wood products, carbon emissions are avoided by using a less emission intensive manufacturing process.
- Energy substitution – offsets that account for using forest biomass energy as a replacement for fossil fuels.

The Copenhagen Climate Change Conference did address harvested wood product issues with respect to reporting requirements and examining various approaches to retaining options, and progress was made in three areas (Bowyer et al. 2010). First, a resolution was drafted that harvested wood products in landfills will not receive offset credits. Second, the parties agreed to consider various alternatives to account for offsets from harvested wood products. Third, there were efforts made to begin drafting specific reporting requirements for countries. In spite of this general framework, there still is no final agreement on whether or not to include sequestration of carbon within harvested wood products in future climate change protocols.

Regional Climate Agreements

Although the United States does not currently have a carbon cap and trade system, there are regional climate initiatives that have developed. Each regional program includes offsets and verification systems for the offsets to assure that they are real, identifiable, additional, and permanent. The regional climate change agreements are serving as frameworks for a national GHG reduction strategy. It is important to note that, if a U.S. climate change bill does get signed into law, the federal law will have precedent over the regional agreements. The three regional climate change mitigation agreements in the US are the Regional Greenhouse Gas Initiative, the Midwestern GHG Reduction Accord and the Western Climate Initiative.

The Western Climate Initiative (WCI) is a group of Western states and Canadian provinces that have formed a regional coalition to combat climate change. The goal of the WCI is to reduce greenhouse gas emissions to 15 percent below 2005 levels by 2020, while maintaining economic growth. This coalition consists of seven U.S. states: Arizona, California, Montana, New Mexico, Oregon, Utah, and Washington. It also consists of four Canadian provinces: British Columbia, Quebec, Ontario, and Manitoba. Although Alaska is not actively participating in the WCI, it is an observing member and may participate before the implementation. The initial framework for the WCI was released on September 23, 2008, and is scheduled to be fully implemented in 2015. This agreement will cover approximately 90 percent of the GHG emissions in WCI states and provinces and also allow offsets.

The Regional Greenhouse Gas Initiative (RGGI)

consists of a group of ten Northeastern and Mid-Atlantic states: Connecticut, Delaware, Maine, Maryland, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont (RGGI 2010). This is the first mandatory cap and trade GHG emissions reduction program in the United States. This agreement has set a target of reducing GHG emissions from the power sector by 10 percent between the 2009 start date and 2018. Emission allowances are auctioned off quarterly. In contrast to the WCI which has yet to be implemented, the RGGI is now mandated and is auctioning off emission permits as a tool to meet emission reduction targets. The RGGI invests funds collected from the auctions into energy efficiency and renewable energy programs.

The Midwestern Greenhouse Gas Reduction Accord is an advisory group that was established in 2007. It includes six states and one Canadian province: Iowa, Illinois, Kansas, Michigan, Minnesota, Wisconsin, and Manitoba. It also includes four observer states that are included in the process but are not held to the mandated GHG reductions. These are Indiana, Ohio, Ontario, and South Dakota. This also includes an offset program and the monitoring and compliance mechanism to validate the offsets. This accord establishes the framework for cap and trade program with the goal of reducing GHG levels 20 percent below 2005 levels by December 31, 2020 and 80 percent below 2005 levels by December 31, 2050. However, this is only a framework and has not been implemented.

Carbon Exchanges

The majority of carbon offsets are currently traded on various exchanges. One exception is the RGGI that trades CO₂e allowances through its own in-house auctions, rather than offering these through established climate exchanges.

The European Climate Change (ECX) is the largest climate exchange as measured by trading volumes (Table 2). This exchange was established in 2005 and traded approximately US\$118 billion worth of carbon allowances and offsets in 2009 (ECX 2010). The ECX is a clearing house for carbon allowance permits that are issued in line with Kyoto Protocol reduction requirements. The ECX utilizes a trading framework established under the European Union Emissions Trading Scheme and two carbon products are traded. The first is the European allowance unit (EAU), which is equal to one metric ton of carbon dioxide equivalent emission allowance. The second is a certified emission reduction (CER). In contrast to an EAU, which is an allowance of emissions, a CER is a removal or avoidance of emissions. One CER represents a reduction or offset of greenhouse gas emissions of 1 metric ton of CO₂ equivalents.

The primary carbon exchange in the United States is the Chicago Climate Exchange (CCX). Although

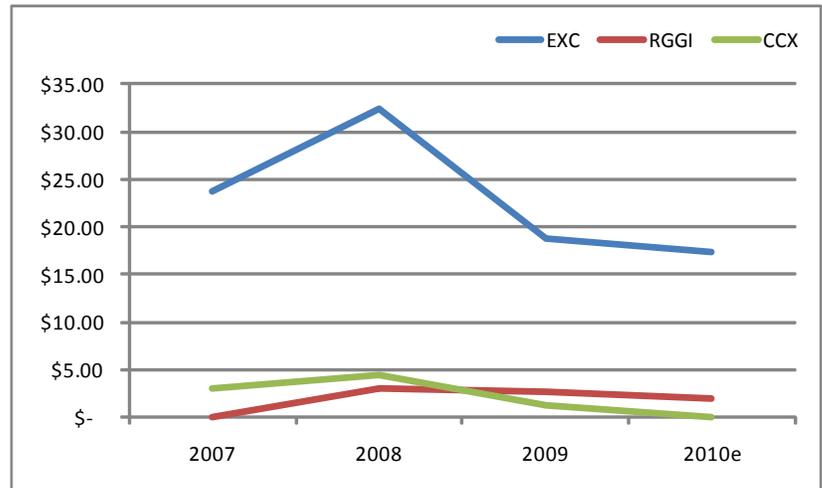


Figure 2. Carbon Prices Across Exchanges

Source: World Bank 2010

the United States currently has no mandated GHG emission cap and trade system, CCX members make voluntary, but legally binding, commitments to reduce emissions that are verified by independent third party auditors. The CCX has recently initiated offset trading through their Carbon Financial Instrument®. These are contracts that cover projects involving the sequestration, destruction, or reduction of GHG emissions (CCX 2010). Other smaller exchanges include the Montreal Climate Exchange, the New South Wales Climate Exchange, and the Tianjin Climate Exchange.

Table 2—Volume of CO₂e allowances traded

	European Climate Exchange (ECX)	Chicago Climate Exchange (CCX)	Regional Greenhouse Gas Initiative (RGGI)
	<i>Million metric tons of CO₂e</i>		
2005	321	1	N/A
2006	1101	10	N/A
2007	2060	23	N/A
2008	3093	69	62
2009	6326	41	805

Source: World Bank 2010.

The price of one EAU of CO₂e on the ECX has declined from about €28.50 in mid-2008 to €13.75 in July 2010 (ECX 2010). This decline can be attributed to a number of factors including the supply of carbon allowances, the economic slowdown, and the uncertainty of what framework will govern CO₂e allowances post 2012. The decline has been more drastic in the voluntary ECX market, where prices have declined from a 2008 mean price of about US\$4.50 to a price of US\$0.10 as of July 2010 (Figure 2). Price comparisons between the CCX and ECX illustrate how a mandated emission reduction system leads to a higher price.

There are three key ingredients that contribute to maintaining a viable offset trading market. First, there must be a supply and demand for the offsets. Second, there must be a market to buy and sell the offsets. Third, there must be a third party organization to independently verify the offset project. The exchanges discussed above are large scale exchanges that target corporations and electric utilities that buy and sell carbon permits

and offsets in large volume. However, there is also demand from individuals and small businesses that wish to offset their GHG emissions but do not have the scale to participate in the larger exchanges. Therefore, a number of entities have emerged to supply offsets on a smaller scale to individuals and small businesses. An example of a smaller scale offset project generated by an independent agency is the Genesis Forest Project that was developed by the Carbon Fund (Carbonfund.org 2009). This project was sponsored by Hyundai Motor Corporation of South Korea and aims to protect about 1,215 hectares (3,000 acres) of tropical forestland in Brazil. This project will sequester approximately 90,000 metric tons of CO₂.

The future of cap and trade in the United States remains unclear. Both the Kerry-Lieberman and the Waxman-Markey bills appear to be shelved in favor

of an energy bill proposed by Senate Majority Leader Harry Reid. One key factor that will impact the future of cap and trade in the United States is the November 2010 mid-term elections. While President Obama has stated he intends to pursue a comprehensive climate change bill, many political experts are predicting that Republican gains in the November elections would block President Obama's ability to muster the votes required for the passage of such a bill. Another pending issue is what global climate change agreement will follow the Kyoto Protocol after it expires in 2012? The United Nations Framework Convention on Climate Change Conference of Parties will meet in Cancun Mexico November 29, 2010 to examine this question. It will be very difficult for the United States to participate in a global climate change agreement if President Obama is unable to pass a climate change bill that includes a cap and trade mechanism. **Q**

An Analysis of the Middle East Lumber Market

By: Daisuke Sasatani, Joseph Roos, CINTRAFOR, and Valerie Barber, University of Alaska

GDP (PPP) per capita and population in Middle East Countries (2009 est.)



Figure 1. Middle East Map

Middle East Lumber continued on page 7

CINTRAFOR and the University of Alaska Fairbanks are jointly cooperating on a research project to examine the Middle East lumber market. A survey of lumber importers was conducted at the Dubai Wood Show April 12 – April 15, 2010. The purpose of this survey was to examine the Middle East lumber market and to find out what species are being used and for what purpose. This article will introduce the preliminary results of the survey and the final report will be published in the near future.

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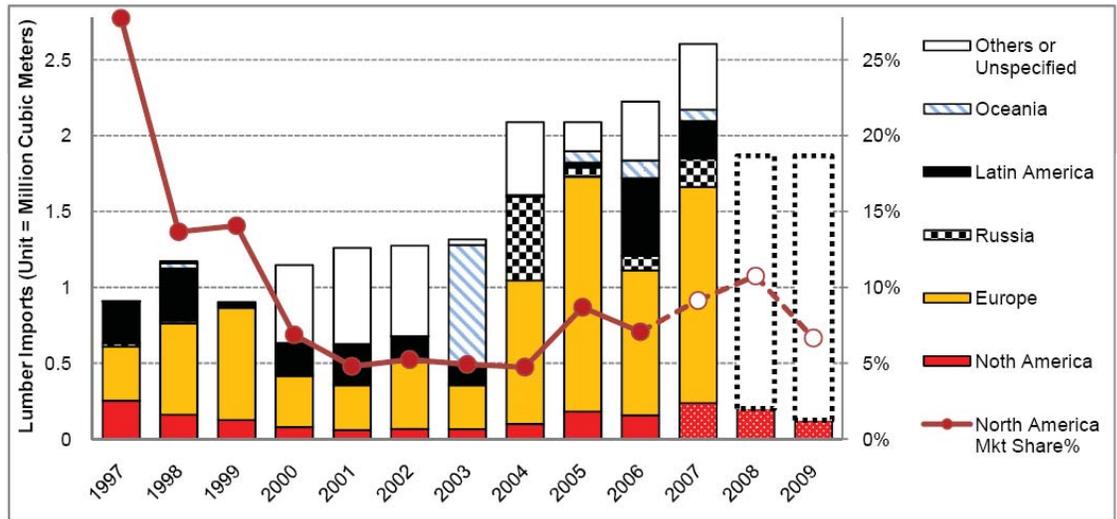


Figure 2. GCC Nations Coniferous Lumber Imports

Source: FAO 2010 (North America 2007-2010 estimated based on export data from Global Trade Atlas)

tion that includes six Arab countries: the United Arab Emirates (UAE), Saudi Arabia, Kuwait, Bahrain, Qatar and Oman. The GDP per capita levels of the GCC nations are some of the highest in the world. For example, Qatar’s GDP per capita is \$121,700, Kuwait is \$54,100, UAE is \$42,000, and Saudi Arabia is \$20,400 (Figure 1). The majority of residential housing is manufactured utilizing steel and concrete. Wood is considered a high end decorative product amongst the GCC countries and is popular for interior applications. The Port of Dubai serves as a major gateway for European and North American imported lumber in the GCC region.

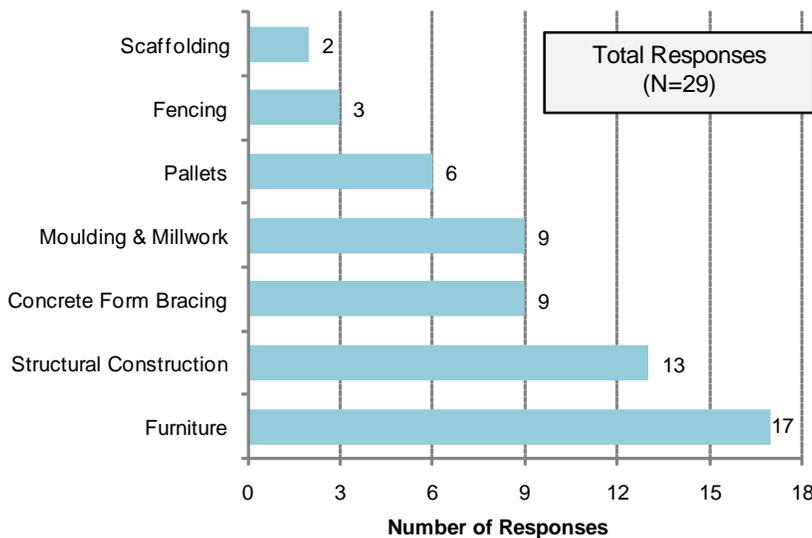


Figure 3. End uses for imported lumber (n=29)

the final report will be published in the near future. The Cooperation Council for the Arab States of the Gulf (GCC) is a political and economic organiza-

Dubai is one of the seven emirates of the UAE. Although Dubai’s economy was built on the oil industry, Dubai has diversified to become the major trade hub of the Middle East. One method used by Dubai to attract foreign trade and investment has been the establishment of free trade zones. Many forest products firms from India, Pakistan, and other countries use the free trade zones to import logs and lumber, manufacture them into finished products, and re-export them to other countries. However, recently competition has increased amongst other free trade zones that have been established in the region.

The recent global economic downturn has damaged the construction market in Dubai. Dubai World is an investment company in which a majority stake is held by the ruling family of Dubai. In November 2009, Dubai World announced they would seek to



restructure their debt which sparked fears in the global market of a possible default. However, a rescue package from the Abu Dhabi government and a renegotiation of the debt allowed Dubai World to continue their debt payments. Although the construction sector in Dubai remains stagnant, their foreign trade has increased by 13 percent in the first quarter over 2009 (EIU 2010). Furthermore, the economies of the Middle East/ North Africa region as a whole are projected to grow at a rate of 4.5% in 2010 (IMF 2010).

GCC imported about total 1.9 million cubic meters of coniferous lumber in 2009 (Figure 2). Although this figure is below the 2007 peak of 2.6 million cubic meters, it is still 60 percent higher than the 2000 import quantity. On average, 40 percent of the GCC's coniferous lumber imports between 2000 and 2007 were from Europe. In contrast, North America shipped between 5 and 10 percent of GCC's total coniferous lumber imports from 2000

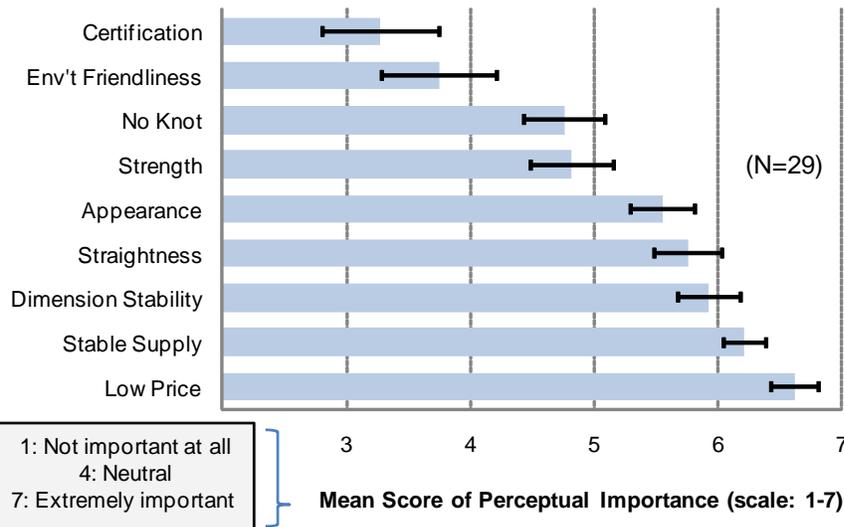


Figure 4. The importance of lumber attributes

to 2007 and approximately 75 percent of this was SPF lumber from Canada.

Survey results

A majority of the attendees of the Dubai Wood Show were from the Middle East, South Asia and the North African regions. Lumber importers attending the tradeshow were asked various questions regarding their lumber imports and the end use applications. The results showed that the lumber imported by the respondents is being used for one of the following end-uses: furniture, structural framing, concrete form bracing, interior moulding, millwork and pallets. The most widely cited use was furniture (Figure 3).

Table 1. Dimensions of imported lumber (n=23)

Dimensions	# of Responses
1x4	9
2x4	8
2x6, 3x3, 4x4	5
1x6, 2x12	4
1x8, 2x8, 2x10	3

The respondents were also asked what lumber dimensions they import. The top dimensions were 1x4 and 2x4 (Table 1). The results also showed that the preferred sizes for concrete form bracing were 3x3 and 4x4.

The survey also examined the importance of various attributes regarding lumber. The results showed that this market is highly price sensitive with "low price" being the most important of the listed attributes. Figure 4 shows the importance rating of the attributes on a scale of 1 to 7. While "low price" was extremely important, the environmental related attributes, "environmental friendliness" and "sustainable forest product certification," received low importance ratings. Exceptions were noted for GCC exporters who were targeting European markets.

In spite of the Dubai's building downturn, Dubai's trade during the first quarter of 2010 rose by 13 percent over the previous year. This increase included a 9.7 percent increase in total imports (EIU 2010). Additionally, the Middle East/ North Africa region's economic growth is projected to be 4.5 percent in 2010 (IMF 2010). In spite of this strong growth, this region is often overlooked by U.S. lumber exporters. The Middle East market has strong demand for softwood

lumber although this the market is price sensitive and so competing directly on price can be difficult. Therefore, it is important for US exporters to differentiate their products, develop strong business relationships with their customers and demonstrate a clear value proposition to potential customers.

References

CIA, 2010. The World Factbook. [www.cia.gov/library/publications/the-world-factbook/index.html]
 EIU, 2010. UAE Country Profile.
 FAO, 2010. FAOSTAT, Forestry Trade Flows. [faostat.fao.org]
 IMF, 2010. World Economic Outlook. [www.imf.org/external/ns/cs.aspx?id=28]

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