



Testimony for the Oregon Energy Facility Siting Council on Carbon Dioxide Offset Prices

The Climate Trust

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Executive Summary

The Climate Trust recommends that the Oregon Energy Facility Siting Council increase the amount per ton under section 354-024-0580, the monetary offset rate from the current rate of \$0.85 to \$1.27. The average cost per ton that The Climate Trust has paid in acquiring offsets for compliance with the Oregon Carbon Dioxide Standard is \$3.30, almost four times that of the current monetary offset rate. Market prices for a ton of carbon dioxide have ranged from a low of \$2.00 to a high of over \$40.00 between the period of 2006 and 2007. The Climate Trust strongly encourages EFSC to increase the monetary path rate from the current rate of \$0.85 by the full 50% allowed, which would bring the rate to \$1.27 per metric ton and more accurately reflect the current prices in the market.

Background

The Oregon Energy Facility Siting Council (EFSC) is undertaking amending the Oregon Administrative Rules, Chapter 345. As part of this process EFSC is evaluating section 354-024-0580, Monetary Offset Rate of this chapter. This section provides the amount that power plants regulated under the Oregon Carbon Dioxide Standard (ORS 469.470 and ORS 469.503) pay to an independent qualified organization to meet their compliance obligation under the law. This rate is currently set at \$0.85 per ton of carbon dioxide to be mitigated. This section establishes that this rate can be adjusted up to 50% once every two years commencing in September, 2001. The adjustment proposed in this amendment would increase the current rate of 0.85 cents by 50% to \$1.27 per ton. This document provides empirical evidence for the Council's review regarding the cost of carbon dioxide offsets in the Oregon, national and international markets.

The Climate Trust has served as the independent, qualified, non-profit provider of carbon dioxide offsets under the Oregon Carbon Dioxide Standard since 1997. This law was the first regulation of its kind in the United States, and since then, only two states have adopted similar legislation, Massachusetts and Washington. However, the carbon market is developing very rapidly in the United States and The Climate Trust is operating in a significantly different market than that of even two years ago.

Historically, The Climate Trust has been one of the only institutional buyers of greenhouse gas offsets operating in the market. As such, The Climate Trust has operated in a "buyers market" and thus, has been able to obtain high-quality greenhouse gas offsets at relatively low

prices. In light of the rapidly developing offset market, the dynamics of the market are rapidly changing and it is anticipated that the available supply of offsets will be much more constrained in the future, thereby increasing the cost of a ton of carbon dioxide.

Historic Costs for The Climate Trust

To date, The Climate Trust has undertaken three major project solicitation initiatives, one in 1999, another in 2001 and the third in 2005. These initiatives have resulted in the implementation of a total of 17 greenhouse gas offset projects, accounting for \$8,966,684 and 2,715,410 tons of carbon dioxide emission reductions. Table 1 shows the average price paid for each of the three acquisition initiatives. The cost of the Climate Trust's overall offset portfolio is \$3.30 per metric ton of carbon dioxide, nearly four times the \$0.85 per ton under the monetary path rate. The cost of offsets under the most recent acquisition initiative was \$4.84 per metric ton, almost six times the established rate of \$0.85. These costs include only the amount paid per ton to the project developer and do not reflect management costs or overhead.

Table 1. The Climate Trust Average Acquisition Cost Per Ton of Carbon Dioxide

Acquisition Initiative	Average Price Per Ton
1999 RFP	\$3.03
2001 RFP	\$3.09
2005 RFP	\$4.84
Total Portfolio Average	\$3.30

Source: The Climate Trust

Carbon Costs within Regulated Markets and Regimes

In addition to the Oregon Carbon Dioxide Standard, there are a number of different markets and regimes either established or under development in the United States and the rest of the world for greenhouse gases that provide price signals for existing and emerging markets. One of the most notable of these is the European Union Emission Trading System. Another example is the Chicago Climate Exchange, which is the only voluntary, legally binding trading platform in the United States. In addition to these trading platforms, regulatory regimes that incorporate, or will incorporate offsets, are under development in various parts of the United States. These include the Regional Greenhouse Gas Initiative, the California Global Warming Solutions Act of 2006, and the Western Regional Climate Action Initiative. Each of these regimes and their respective implications for the availability and price of offsets is discussed in greater detail in the next section of this document.

The European Union Emission Trading System

The European Union Emissions Trading System (EU ETS) was developed to assist the European Union in meeting its emissions reduction obligations under the Kyoto Protocol. The program came into force in January 2005. The EU ETS employs both allowance trading and the purchase of offset credits to meet reduction obligations for regulated entities and to achieve the program's environmental reduction targets. Greenhouse gas emissions allowances differ from greenhouse offsets in that allowances are an issued right to emit a predetermined amount under a greenhouse gas emissions cap. A greenhouse gas offset is a project at another location that is specifically implemented to reduce greenhouse gas emissions on behalf of a regulated entity under a cap.

Under the EU ETS, regulated entities are allocated a certain amount they are allowed emit, known as an emissions cap. If a covered entity emits less than its allowed amount it can sell or trade its emissions allowances (EUA) to other covered entities. Alternatively, if a regulated entity is unable to meet its emissions cap it can purchase EUAs from other covered entities or purchase Certified Emissions Reductions (CER's) from either the Clean Development Mechanism (CDM) or the Joint Implementation (JI) programs to meet its emissions target. The Clean Development Mechanism allows regulated entities to fund offset projects in developing (Annex 2) countries on their behalf, while the Joint Implementation mechanism allows the purchase of CERs from offset projects in other developed countries (Annex 1). The EU ETS is broken down into three trading phases, 2005-2007, 2008-2012, and post 2012.

Prices for European Union Allowances (EUA) under the EU ETS have been very volatile, ranging from a high of \$40.60 in 2006 to a low of \$2.00 in early 2007. This market volatility has been largely attributed to the over allocation of emissions allowances in the first phase of the trading program, leading to an oversupply of allowances in the market. Emissions allowances have been tightened up for the second phase of the trading program, commencing in 2008.

Certified Emissions Reductions from the CDM and JI programs purchased during the same time tend to be less expensive and more stable in price than EUAs. This is because least-cost reductions can often be achieved through offset projects and the supply tends to be more stable. All emissions reduction project types and methodologies must be reviewed and approved by the CDM Executive Board and certified by an independent third party verifier. Prices as of March 2007 for CERs purchased under CDM and JI ranged from \$5.00 to \$10.00 (U.S.) per ton of carbon dioxide equivalent, depending on the project type.

The Chicago Climate Exchange

The only voluntary emissions trading exchange in the United States is the Chicago Climate Exchange. Commonly known as CCX, it is the only legally binding, voluntary (i.e. self-regulating) emissions trading platform in North America. CCX also operates a similar

exchange in Europe called the European Climate Exchange (ECX). Under current rules, members are required to reduce their emissions to 6% below their averaged baseline by 2010. The reductions are relative to an averaged organizational baseline from the years 1998 to 2001. A member of CCX that cannot achieve its reduction target internally can purchase either emission allowances or offsets on the exchange¹. The members can either purchase the allowances from other CCX members that reduce their emissions below their target or purchase project-based GHG offsets.

As of March 2007, a ton of carbon dioxide equivalent purchased on the CCX exchange cost \$3.85.

Trading Platform Price Comparison

Table 2 compares the current and historic price per ton of carbon dioxide traded in the existing trading platforms. It should be noted that there is wide variation in the prices, which is due to the emergent nature of the market and the basic market effects of supply and demand.

Table 2. Current and Historic Market Price Per Ton of Carbon Dioxide*

Market	Prices in March 2007	Historical Price Range**
EU ETS	\$1.41	\$1.41-\$40.60
CCX	\$3.85	\$3.00-\$5.00
Kyoto/ CDM	\$4.84	\$4.00-\$12.00
Average Price Per Ton	\$3.37	\$2.80-\$19.20

Source: Point Carbon and Carbon Finance Jan. 2007

*All prices are adjusted to U.S. 2007 dollars

**For the period of 2006-2007

Washington State's Carbon Price

In 2004, the State of Washington passed legislation similar to Oregon's Carbon Dioxide Standard in the form of Chapter 173-407 WAC, the *Carbon Dioxide Mitigation Program for Fossil-Fueled Thermal Electric Generating Facilities*. This law mandates that new power plants mitigate a portion of their carbon dioxide emissions. The law is structured so that emissions reductions can be achieved three ways: 1) investment in applicant controlled carbon dioxide mitigation projects, 2) direct purchase of permanent carbon credits, or 3) through payment to an independent qualified organization to procure greenhouse gas offsets on the regulated entities' behalf. The rate established for the monetary path rate (option 3) is \$1.60. The Washington Energy Facility Site Evaluation Council is authorized to adjust this rate biannually by up to 50% of the current rate.

¹ See discussion of the differences between an offset and an allowance under the EU ETS section.

Emerging U.S. Regulatory Frameworks

This section of the report provides an overview of several prominent emerging regulatory regimes in the United States. They are: The Regional Greenhouse Gas Initiative, The California Global Warming Solutions Act of 2006, and the Western Regional Climate Action Initiative, among others. Each of these initiatives will contribute significantly to the composition and size of the future carbon market and have implications for the price and availability of greenhouse gas offsets.

The Regional Greenhouse Gas Initiative

A pivotal greenhouse gas regulatory effort in the United States is the Regional Greenhouse Gas Initiative (RGGI), which is a cooperative effort by nine Northeastern states to implement a regional cap and trade program. The program requires that electric power generators in participating states limit and reduce their greenhouse gas emissions. The model rule applies to all stationary, fossil-fuel-fired electric generators 25 megawatts or larger located in the participating states. Regional emissions will be capped at 121.3 million short tons of carbon dioxide through 2014 and then reduce to 10% below this level in 2018. Each participating state will receive an emissions budget, but the cap will apply regionally. A source may cover up to 3.3% of its emissions with greenhouse gas offsets, which equal approximately 50% of the required reductions.

The draft model rule was released on August 15, 2006, and is scheduled to take effect on January 1, 2009. Participating states are currently in the process of formally adopting the model rule and developing administrative rules. The commencement of RGGI will mark the first mandatory, multi-state, cap-and-trade program for greenhouse gases in the U.S.

Although there is currently no pricing point in the RGGI system, there are several price triggers incorporated into the system, which reflect price expectations from economic modeling. Because offset sectors allowed under RGGI are limited, it is expected that there will be high demand for these project types, driving up offset prices in the future.

The California Global Warming Solutions Act of 2006

RGGI has set an important precedent in the U.S. and many states have taken similar action; one of the most notable examples is the California Global Warming Solutions Act. Commonly known as AB 32, this bill was approved in 2006 and is slated to take effect in early 2012. The bill calls for emission reductions to 1990 levels by the year 2020 in the state of California and directs the California Air Resources Board to develop a regulatory framework for emission reductions that may include cap and trade and market-based compliance options.

AB 32 is expected to significantly impact the market for greenhouse gas offsets both by its policy precedent and through sheer market size. It is expected that California will follow

RGGI's lead and limit the amount and type of offsets allowed to meet compliance obligations under the new regulations. This could lead to greatly increased demand for certain types of offset projects. If offsets are allowed under the regulations, demand is expected to be quite high, further constraining the market and increasing prices.

The Western Regional Climate Action Initiative

Perhaps the most important emerging regulatory initiative is the recently announced Western Regional Climate Action Initiative. The governors of California, Oregon, Washington, New Mexico and Arizona announced in early 2007, their intention to establish a regional greenhouse gas reduction goal by September of 2007, and to design a regional cap and trade system by August of 2009. Because this initiative is in its infancy, it is difficult to project its impact on offset prices.

Other Emerging U.S. Regulatory Regimes

There are also a number of states that are currently considering how to best address greenhouse gas emissions through regulation. New Jersey recently introduced legislation proposing a cap and trade system for their state. Pennsylvania is considering their climate action plan and as a component of that plan may join the Regional Greenhouse Gas Initiative. The States of South Carolina and North Carolina have recently announced the establishment of committee to study the effects of climate change and to consider regulations of greenhouse gases. Washington's governor recently issued an executive order that establishes greenhouse gas reduction goals and Oregon's governor has called for a regional cap and trade system to be established.

Moreover, at the national level, congress has begun hearings on climate change regulatory structures and no less than five bills have been introduced for consideration. The question is no longer whether the U.S. will regulate greenhouse gases, but rather how soon and with what degree of stringency. The landscape of regulation is changing very rapidly and should continue to do so over the next several years. These regulatory developments will have significant impact on the availability and price of greenhouse gas offsets.

Conclusion

With the continued development of the U.S. and international carbon markets, demand is increasing and ready supply is decreasing, thereby driving up prices. In order to deliver the greatest environmental benefit to the citizens of Oregon, The Climate Trust recommends EFSC increase the monetary path rate from \$0.85 to \$1.27 per ton, to better reflect current carbon market prices.