

Charting a Course to Energy Independence

Providence, RI
August 9-12, 2009

Carbon Trading and REC Contracting





Presentation Outline

- World Energy Overview
- Choices for Going Green
- Green Commodities 101
- Successful Green Commodity Auctions
- Carbon Markets
- The Regional Greenhouse Gas Initiative
- US Cap & Trade Outlook



World Energy Overview

- World Energy operates leading online exchanges for energy and environmental commodities. Our proven approach enables our customers to transact with confidence and seek a highly competitive price by:
 - Providing market intelligence
 - Promoting liquidity
 - Creating price transparency for all market participants
- IPO on TSX Nov '06 and NASDAQ listing May '09

WorldEnergy | Exchange

World | GreenExchange



Three Choices for Going Green

	REC (renewable energy certificate)	VER (verified emission reduction)	Bundled Energy
What are they for?	To green an electricity portfolio already under contract	To offset carbon emissions	To green an electricity portfolio yet to be purchased
Example	You have an agreed upon price for electricity through 2010	You know your carbon footprint and want to be carbon neutral	You are currently in the market for electricity
Unit of measure	1 REC = 1 MWh	1 VER = 1 metric tonne of reduced carbon emissions	Same as a REC, but usually refers to greening a percentage of your consumption, e.g., 5, 10, 25%...
What do they cost?	Typically \$1.50-\$680.00 Solar is on the high end	Based on the project. Prices vary from \$4.00-\$10.00	Varies, but the right procurement method can allow greening a portfolio at a small premium or even a discount
Emissions reduced per unit	US Rule of Thumb: 1 REC offsets 1,363 lbs of carbon emissions	1 VER is the equivalent of reducing ~2,200 lbs of carbon emissions	Same as a REC



Green Commodities 101 - RECs

- What are RECs?
 - RECs (also known as green tags, green energy certificates, or tradable renewable certificates) represent the environmental attributes of power generated from renewable electric plants
- Why buy RECs?
 - Whether or not you have access to green power through your utility or a competitive electricity marketer, you can purchase RECs
- Guide to Purchasing Green <http://www.eere.energy.gov/greenpower/buying/index.shtml>





Green Commodities 101 - VERs

- What are VERs?
 - A Commodity that symbolizes a reduction in carbon output
- Why should I purchase VERs?
 - You want to voluntarily reduce your carbon footprint.
- What should you look for with VERs?
 - High standards
 - Recognized registry
 - No double counting





Green Commodities 101 – Bundled

- What is Green Power?
 - Generally refers to electricity supplied in whole or in part from renewable energy sources, such as wind and solar power, geothermal, hydropower, and various forms of biomass
- Why Buy Green Power?
 - By choosing to purchase a green power product, you can support increased development of renewable energy sources, which can reduce the burning of fossil fuels, such as coal, oil, and natural gas





Green Commodities 101 – RECs vs. Carbon Offsets

RECs

- RECs are an attribute of power produced by renewable power generation
- RECs are avoided environmental attributes of the clean renewable power
- Augments conventional generation
- 1 MWh of Green Power = 1 REC
- Verification / certification / training services available

Carbon Credits

- Carbon offsets are the result of mitigating greenhouse gas emissions
- Carbon Credits are emission reduction units
- Offset examples include tree-planting and methane collection
- 1 Tonne of CO₂ = 1 Carbon Credit



Green Commodities 101 – Are They Legitimate?

- Standards for Renewable Energy Programs and Credits
 - Green-e - <http://www.green-e.org>
 - RECs
 - Gold Standard - <http://www.cdmgoldstandard.org>
 - VERs
 - Voluntary Carbon Standard - <http://www.v-c-s.org/>
 - VERs
- If the credits aren't standardized, are they still viable?
 - Yes, but ensure you do your due diligence
 - There is more risk – determine your risk tolerance
- VERs are a credible, viable solution for greening portfolios



Green Commodities 101 – How do They Work?

- Indirectly – cleaning up electricity consumption by purchasing:
 - Bundled Green Power – Sourced from wind, hydro, solar, biomass
 - RECs – green attribute from power generated from renewable electric plants
- Directly – measurement of carbon reduction
 - Carbon Credits, e.g. VERs – measured directly in terms of avoided carbon
- Ultimately, both approaches arrive at the same outcome – helping the environment!





Successful Green Commodity Auctions

- World Energy has conducted more than 20 individual auctions
 - Awards of nearly one million RECs and more than five million offsets
 - Products awarded include
 - Certified emission reductions (CERs) for a European based company
 - Carbon credits in Canada
 - Verified emission reductions (VERs)
 - 111 million Regional Greenhouse Gas Initiative CO₂ allowances

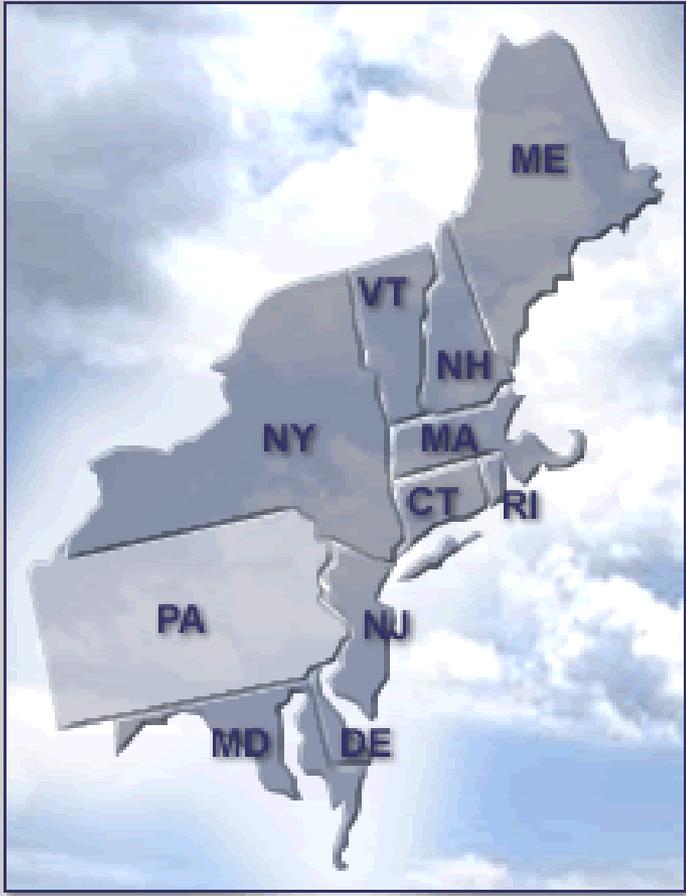


Carbon Markets

- Primary Market
 - RGGI CO₂ Allowance Auctions
- Secondary Market
 - The secondary market for RGGI allowances comprises the trading of physical allowances and financial derivatives, such as futures and options contracts.
 - Chicago Climate Futures Exchange (“CCFE”)
 - Green Exchange, an initiative of the New York Mercantile Exchange (“NYMEX”)
 - Over-the-counter (OTC)
 - Standard futures and options contracts are traded on two public exchanges



The Regional Greenhouse Gas Initiative (RGGI)



- First mandatory, market-based effort in the US
- 10 Participating states will cap and then reduce CO₂ emissions from the power sector 10% by 2018
 - Covers units 25 MW or larger
- Four 3-year compliance periods starting in 2009
 - Current & future allowance vintages are auction simultaneously
- Allocation: almost 100% auction
 - Minimum 25% of state-wide cap
 - Most states going for nearly 100%
- Use of proceeds for renewable energy, energy efficiency & public benefit



RGGI Roles and Responsibilities

- World Energy was selected to provide services related to the design and implementation of a regional allowance auction
- This includes activities such as:
 - Customization of the World Energy Exchange[®] to support the RGGI auction format
 - Development of the Qualification Application and Auction Notice
 - Bidder training
 - Administering the auction
- World Energy is not involved with any policy or regulatory decisions or any other matters that fall within the traditional purview of the participating states



RGGI Auction Results

- First Auction Results
 - ~12.6mm allowances (4x over)
 - Clearing price of \$3.07
 - ~\$38mm generated
- Second Auction Results
 - ~31.5mm allowances (3.5x over)
 - Clearing price of \$3.38
 - ~\$106mm generated
- Third auction results
 - 2009 Allowances
 - ~31.5mm allowances (2.5x over)
 - Clearing price of \$3.51
 - ~\$111mm generated
 - 2012 Allowances
 - ~2.2mm allowances (1.5x over)
 - Clearing price of \$2.06
 - \$4mm generated
- Third auction results (cont.)
 - 2012 Allowances
 - ~2.2mm allowances (2.3x over)
 - Clearing price of \$3.05
 - \$7mm generated
- Fourth auction results
 - 2009 Allowances
 - ~30.9mm allowances (2.6x over)
 - Clearing price of \$3.23
 - \$100mm generated
 - 2012 Allowances
 - ~2.2mm allowances (1.5x over)
 - Clearing price of \$2.06
 - \$4mm generated



US Cap & Trade Outlook – Waxman-Markey

- American Clean Energy and Security Act (Waxman-Markey) passed out of committee last week
 - Covers approximately 85% of US emissions
 - 17% emissions reductions below 2005 levels by 2020; 83% reductions by 2050
 - Substantial free allocation of allowances, including 30% to electric distribution companies and 9% to natural gas distribution companies
 - A number of allowances will be auctioned initially, percent may grow over time
 - Allows up to 2 billion tons of offsets per year, half of which can come from international projects



US Cap & Trade Outlook – Prospects

- Prospects
 - The Congressional Budget Office (CBO) estimates that the U.S. cap-and-trade program will cost \$22 billion annually, or about \$175 per household, by 2020
 - Highly possible that bill will be passed by House of Representatives by Copenhagen (simple majority required)
 - Unlikely that Senate will pass a similar bill until first half of 2010