California Carbon Cap And Trade Overview

Prepared by
BGC Environmental Brokerage Services

November 2012
BGC Partners, Inc. (NASDAQ: BGCP) is a leading global intermediary to the wholesale financial markets.

Originally part of Cantor Fitzgerald, BGC split off in 2004.

On April 1, 2008, BGC merged with eSpeed and became BGC Partners, Inc.

With 1,800 brokers, 24 offices worldwide, BGC conducts over $200 trillion in notional transactions annually.

Revenue in 2010 was just over $1.3B.

Currently investment grade credit rating.

Recently acquired real estate brokerage firms Newmark Knight Frank and Grubb & Ellis.
BGC launches Environmental Brokerage Services division in July 2011

BGC EBS Acquires CantorCO2e’s North American business & grows to a dozen employees with offices in New York, San Francisco, Los Angeles

BGC EBS focuses on emissions, alternative energy and emerging environmental product markets

Named Top ERC Broker in Environmental Finance Survey in 2011

Environmental markets

BGC EBS brokers:
- Carbon (compliance & voluntary, US & International)
- Renewable Energy Markets
- EPA NOx & SO2 markets
- Regional Cap & Trade Programs (i.e. RECLAIM & HGB)
- US ERC Markets
- Mobile Source Markets (EPAct, MSERCs, Rule 2202 & ZEVs/PZEVs)
- US Water Markets
California Carbon Overview Timeline

**AB 32 – Global Warming Solutions Act of 2006**
- 9.27.2006: AB 32 signed into law. Goal to reduce CA’s GHG Emissions to 1990 levels by 2020
- 12.16.10: CARB endorses proposed finalization of:
  - California Cap on GHG Emissions
  - Market-Based Compliance Mechanisms
  - Including Compliance Offset Protocols
- 10.20.2011: CARB Board approves rules in 8-0 Vote
- 12.13.2011: Rules finalized by the California Office of Administrative Law
- 1.1.2012: Program begins
- 1.31.2012: Covered Entity Registration Deadline
- 6.28.2012: CARB Board Approves Amended Rules (15-day changes)
- 8.30.2012: Practice Auction
- 1.1.2013: Compliance obligation commences
Who’s in & When?

- **Phases:**

- **Compliance Periods:**
  - CP1: 2013–2014
  - CP2: 2015–2017
  - CP3: 2018–2020

- **Threshold for Covered Entities:**
  For covered sectors as of 2013:
  - No Threshold for Electricity–Importers from Unspecified Sources
  - +25K metric tons in any year 2008–2012 inclusion starting 2013
  - +25K metric tons in any year 2013 and beyond inclusion in that year
  
  For covered sectors as of 2015:
  - No Threshold for Electricity–Importers from Specified Sources
  - +25K metric tons in any year 2011–2014 inclusion starting in 2015
  - +25K metric tons in any year 2015 and beyond inclusion in that year

- **Registration Deadlines:**
  Future Covered Entities: Facility must register within 30 calendar days of the reporting
deadline contained in MRR (registration deadline: 5/10/12 for Facility Operator/Fuel
Supplier & 7/1/12 for Electric Power)
  
  Voluntary Opt–In 11/30
AB32: Visually

- Net Cap
- Offset forecast
- The amount of allowances that CARB will remove from each year’s cap and set aside for the Allowance Price Containment Reserve
- BAU emissions forecast
## Allowance Budgets

- California and Quebec Greenhouse Gas Allowance Budgets

<table>
<thead>
<tr>
<th>Year</th>
<th>California</th>
<th>Quebec</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>162.8m</td>
<td>23.7</td>
</tr>
<tr>
<td>2014</td>
<td>159.7m</td>
<td>23.3</td>
</tr>
<tr>
<td>2015</td>
<td>394.5m</td>
<td>63.6</td>
</tr>
<tr>
<td>2016</td>
<td>382.4m</td>
<td>61.0</td>
</tr>
<tr>
<td>2017</td>
<td>370.4m</td>
<td>58.5</td>
</tr>
<tr>
<td>2018</td>
<td>358.3m</td>
<td>56.0</td>
</tr>
<tr>
<td>2019</td>
<td>346.3m</td>
<td>53.4</td>
</tr>
<tr>
<td>2020</td>
<td>334.2m</td>
<td>50.9</td>
</tr>
</tbody>
</table>
What’s Trading?

- **California Carbon Allowances (CCAs)**
  - Exchange Cleared
  - California Allowance Forward Trade Agreement (CAFTA)
  - Bilateral

- **CARB Carbon Offsets (CCOs)**
  - California Offset Forward Trade Agreement (COFTA)
  - Bilateral

- **Non-Guaranteed Offsets** (existing and potential CARB protocols)
  - Bilateral
CCA Contracts

- CCA (California Carbon Allowance) Futures:
  - Instrument: California Greenhouse Gas Allowances deliverable through CITSS.
  - CY 2012 contracts will be rolled one year ahead if MTS is not operational.
  - CY 2013 or later contracts -- if the MTS is not operational -- will settle at the Auction Reserve Price ($10).
  - OTC execution both with central counterparty clearing.

- CAFTA (California Allowance Forward Trade Agreement)
  - Barclays Capital sanctioned by International Swaps and Derivatives Association (ISDA)
  - Vintage 2013, delivery December 2013
  - Program delay: one year roll
  - Tear up provision in the event the program abandoned

- CCA Spot & Forwards:
  - Bilateral Negotiated Contracts subject to PSA & Credit
  - Specifications are negotiable
Allowance Price Projections (excluding Quebec demand)

Barclays Capital:

- CP 1: $14/t
- CP 2: $36/t -> $26/t
- CP 3: $68/t -> $49/t

Chart Source: Thompson Reuters/Point Carbon graphic 10/2011
CCA V13 DEC13 Futures Pricing

Weighted Daily Price

Daily Volume
Carbon Offset Rules

- Real, additional, quantifiable, permanent, verifiable and enforceable
- 8% Limit
- Credit Periods:
  - Non Sequestration 7–10 years
  - Sequestration 10–30 years
  - Must be within US (plus territories, Canada, or Mexico)
- Offset Projects Using ARB Compliance Offset Protocols
  - Commencement after December 31, 2006
  - ODS, Livestock, Urban Forest, US Forest Projects
    - Early Action Offset Project Crediting 1/1/2005 to 12/31/2014, listed or registered pre 1/1/2014
- Potential new offset credits
  - Coal Mine Methane
  - Fertilizer Management
  - Rice Management
## California Carbon Market (excluding Quebec Compliance demand)

<table>
<thead>
<tr>
<th>Compliance Period</th>
<th>Year</th>
<th>Allowance Budget (mt CO₂e)</th>
<th>Potential Total Offset Demand</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>First Narrow Scope</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td></td>
<td>162,800,000</td>
<td>26,800,000</td>
</tr>
<tr>
<td>2014</td>
<td></td>
<td>159,700,000</td>
<td></td>
</tr>
<tr>
<td><strong>Second Broad Scope</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2015</td>
<td></td>
<td>394,500,000</td>
<td>91,784,000</td>
</tr>
<tr>
<td>2016</td>
<td></td>
<td>382,400,000</td>
<td></td>
</tr>
<tr>
<td>2017</td>
<td></td>
<td>370,400,000</td>
<td></td>
</tr>
<tr>
<td><strong>Third</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2018</td>
<td></td>
<td>358,300,000</td>
<td>83,104,000</td>
</tr>
<tr>
<td>2019</td>
<td></td>
<td>346,300,000</td>
<td></td>
</tr>
<tr>
<td>2020</td>
<td></td>
<td>334,200,000</td>
<td></td>
</tr>
</tbody>
</table>

*Data from Climate Action Reserve*
Cumulative CRTs Issued and Estimated for ARB and Other

<table>
<thead>
<tr>
<th>Year</th>
<th>Other CAR</th>
<th>ARB Approved</th>
<th>CRTs Retired Other CAR</th>
<th>CRTs Retired ARB Eligible</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005</td>
<td>136,230</td>
<td>23,705</td>
<td>52,711</td>
<td>5,546</td>
</tr>
<tr>
<td>2006</td>
<td>230,427</td>
<td>159,678</td>
<td>55,431</td>
<td>12,004</td>
</tr>
<tr>
<td>2007</td>
<td>467,367</td>
<td>366,144</td>
<td>40,351</td>
<td>38,086</td>
</tr>
<tr>
<td>2008</td>
<td>1,303,83</td>
<td>922,107</td>
<td>230,247</td>
<td>242,067</td>
</tr>
<tr>
<td>2009</td>
<td>3,639,11</td>
<td>2,113,02</td>
<td>590,406</td>
<td>266,150</td>
</tr>
<tr>
<td>2010</td>
<td>8,432,61</td>
<td>4,843,11</td>
<td>1,492,205</td>
<td>341,328</td>
</tr>
<tr>
<td>2011</td>
<td>12,630,3</td>
<td>6,619,55</td>
<td>216,877</td>
<td>0</td>
</tr>
<tr>
<td>2012</td>
<td>19,763,9</td>
<td>12,180,7</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2013</td>
<td>28,049,3</td>
<td>18,647,2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2014</td>
<td>37,486,6</td>
<td>27,119,0</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Total Offset Demand for First Compliance Period: 26,800,000
**Offset Contracts**

- **Bilateral Negotiated Contracts**
  - CRT/CCO – Prepayment Contract
  - Unit Contingent volumes with buyer liability

- **Guaranteed CARB Offset at delivery**
  - COFTA (California Offset Forward Trade Agreement)
    - Designed by Barclays Capital sanctioned by ISDA
    - Buyer assumes liability
    - Tear up provision in the event the program abandoned
    - Buyer liability at time of delivery
  - COFTA with Additional Guarantee
    - Seller assumes liability until November 1, 2015
  - COFTA (3)
    - Seller double verifies credits and limits invalidation to risk 3 years
  - COFTA Guaranteed with a CCA
    - Seller will deliver a CCA if the underlying Offset is invalidated
Current Market Pricing

- **CCAs:**
  - V13 DEC12 Futures: $12.00–$12.75/CCA
  - V13 DEC13 Futures: $12.00–$12.50/CCA
  - V14 DEC14 Futures: $12.75–$13.25/CCA
  - V15 DEC12 Futures: $10.00–$11.00/CCA
  - V15 DEC15 Futures: $11.00–$15.00/CCA
  - V13 CAFTA DEC 13 (no roll): $13.00–$13.75/CCA

- **Guaranteed CCOs:**
  - CCO backed by CCA: –25% vs. –15% (Index Based)
  - CCO backed by CCO: $9.00–$11.25/CCO
  - COFTA: $9.00–$10.50/CCO

- **Non-Guaranteed Offset Credits:**
  - ODS CRT: $6.75–$8.75/CRT
  - AG CRT: $6.75–$9.00/CRT
  - CAR v3.x FRST: $6.50–$8.50/CRT
Dusty Granet
Phone: 415.316.8400
Email: dgranet@bgcpartners.com
www.bgcebs.com