Trading in California’s Carbon Market:
A summary of trading activity, products and drivers

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Prepared for:
American Carbon Registry and Marten Law –
California’s Cap-and-Trade: Strategies for effective market participation

July 17, 2013
I. **Tools for Hedging Price Risk**
   - Types: spot, forward, futures, options, etc.
   - Prices
   - Futures contract specification (ICE)

II. **Trading Activity**
   - Auction highlights
   - Historical pricing and volumes

III. **Conclusions**
Tools for Managing Carbon Price Risk

**Active Participants**

- Commodity Traders
- Banks
- Hedge Funds
- Power generators
- Industrials
- Offset Project Developers

**California Carbon Allowances (CCAs)**

*Primary:* auctions/free allocations. **Secondary:** exchange-cleared (ICE) futures/options & OTC bilateral spot and forwards. Vintages: ’13, ’15, ’16

**California Compliance Instruments (CCIs)**

Bundled allowance and offsets product. Trades OTC bilateral under bilateral contracts. Indexed or Fixed price

**California Carbon Offsets (CCOs)**

*Primary:* project-specific. **Secondary:** non-project specific. Dec ‘13 or later forwards, no spot yet. CCOs trade w/ 3, 8 or no invalidation risk

**Early Action Credits (AB32-eligible CRTs)**

Trades OTC bilateral (relatively inactive). Spot/forward/options contracts. CRTs that are eligible to be converted into CCOs under AB 32, i.e. US ODS
Note: prices are indicative based on current market conditions and are subject to change.

Date: 7/16/2013

Dec ’13 V13 California Carbon Allowance (CCA) $14.35

Dec ’13 CCO (3), Buyer wears three years invalidation risk $11.50

Dec ’13 Golden CCO, Seller wears invalidation risk $10.50

Early Action Credit (US ODS, AG, Forestry CRTs) $8.50
Exchange-Cleared CCA Contracts

Intercontinental Exchange (ICE)

- Most liquid contracts: V13 Dec ’13, V13 Jul ’13, V16 Dec ‘15
- Settlement: physical if CITSS is operational* Seller delivers CCAs into Buyer's CITSS Account (or FCM Holding Account) on last business day of the month
- If CITSS isn’t operational at settlement, the parties financially settle against the Reserve Price for that CY
- 1 contract = 1,000 CCAs
- Minimum price tick: $0.01 per CCA, $10.00 per contract
- Minimum margin: $2,000 per contract ($2 per ton) + variation margin posting is 100% of market price change
- Futures, spreads, calls & puts
- In 2013, Average Monthly Volume for Dec ‘13 V13 CCA: 3M tons
- End of June Total Open Interest in all V13 Futures and Options: 18.5M tons
- Most active Option contracts (all v13, mostly Dec ’13 expiration):
  - Calls: $15, $17, $17.50, $20
  - Puts: $11.50, $12, $12.25, $12.50, $14

* It is conceivable, like in other emissions markets, CITSS remains intact after a legal challenge/order, i.e. stay, vacate, etc., resulting in trading below the Price Reserve on ICE
## Auction – Highlights

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<td>Nov ‘12</td>
<td>23,126,110</td>
<td>39,450,000</td>
<td>-</td>
<td>$10.00</td>
<td>$10.09</td>
<td>$10.00</td>
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<td>73</td>
<td>$12.05/ton</td>
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<td>Feb ’13</td>
<td>12,924,822</td>
<td>-</td>
<td>9,560,000</td>
<td>$10.71</td>
<td>$13.62</td>
<td>-</td>
<td>$10.71</td>
<td>91</td>
<td>$13.45/ton</td>
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<td>May ’13</td>
<td>14,522,048</td>
<td>-</td>
<td>9,560,000</td>
<td>$10.71</td>
<td>$14.00</td>
<td>-</td>
<td>$10.71</td>
<td>81</td>
<td>$14.80/ton</td>
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<tr>
<td>Aug ’13</td>
<td>13,865,422</td>
<td>-</td>
<td>9,560,000</td>
<td>$10.71</td>
<td>?</td>
<td>-</td>
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- Stable carbon price ($14-$15/ton for the past 5 months), levels forecasted by most analysts. Relatively liquid CCA market w/ most (78%) volume trading OTC via clearing brokers.

- Prompt vintage allowance (V13) trading over future vintage (V15, 16) due to program risk and regulated entity hedging programs. However, future vintages are trending towards higher demand/pricing.

- Relatively stable now, but volatility a real possibility the balance of ’13 ➔ lawsuits, Quebec link, weather, etc.
Open Interest (millions)

Total V13 OI (Futures & Options)
Benchmark California Carbon Contract: 
*ICE CCA V13 Dec ’13*

**Source:** Intercontinental Exchange

- **Nov ’12 auction** clears $10.09/ton
- **Feb ’13 auction** clears $13.62/ton
- **May ’13 auction** clears $14/ton
Closing Comments

- All sectors are actively hedging carbon risk today but power generators/marketers and speculators are most active in secondary market trading

- Volumes and liquidity are relatively healthy; participation is growing

- Pricing is stable right now, but regulatory changes, lawsuits, etc. could mean price volatility

- Despite relative thinness, the offset market is growing each month w/ new compliance entities starting to procure

- Future vintage allowance markets (v15, v16) remain nascent. Despite clearing at the Price Reserve each auction, demand is trending higher for future vintage allowances
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