

Carbon Markets: Birth of a Commodity

Point Carbon
June 2009

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Providing critical insights into energy and environmental markets

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Point Carbon: Global Information Provider

- News, Conferences & Training courses
- Research & Trading Analytics:
 - Carbon
 - Power
 - Gas
- Offset projects databases
- Advisory services

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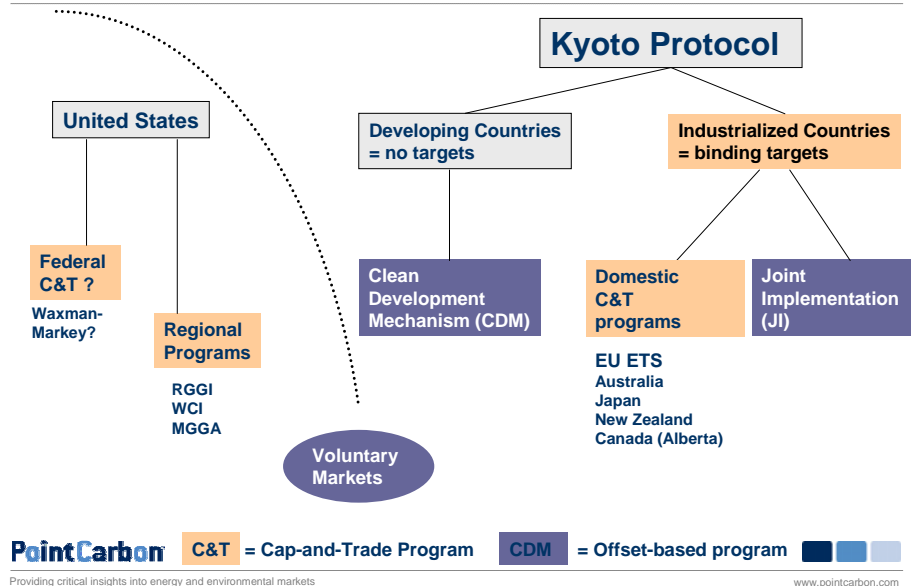
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The screenshot displays the Point Carbon website interface with the following components:

- Navigation:** Research, Trading analytics, Advisory, Events, About us, and a search bar.
- EU ETS Section:**
 - Carbon's bear trend continues:** Article dated 15 Jun 2009 12:52 EST. Text: "Carbon fell sharply on Monday as a weaker energy complex added to bearish sentiment." Includes a "Read more" link.
 - Corporate policy:** Article dated 15 Jun 2009 11:49 EST. Text: "The Asian Development Bank should stop funding fossil fuel projects, a survey of the bank's lending..." Includes a "Read more" link.
 - Austria to spend €5m on EUAs:** Article dated 15 Jun 2009 11:04 EST. Text: "Austria will buy 2 million EU allowances (EUAs) for installations joining the EU ETS this year." Includes a "Read more" link.
- Publications:** Carbon Market Daily 15 June, Carbon Market Europe 12 June, CDM & J Monitor 10 June, Carbon Market North America 12 June, Carbon Market Australia-New Zealand 5 June.
- Prices:** Point Carbon EUA assessment (EUR/t) for DEC 2009 at €12.50, down from -0.50. Includes a "Last 30 days" line chart showing price fluctuations.
- Market Data:** A table of market prices with columns for Date, Low, and High. Example: DEC 2009 14 Jun 09 10.65 10.75.
- CTI search:** Updated to include reported 2008 verified emissions.
- Subscription:** A red box with the text "Subscribe NOW!" and "CLICK HERE!"
- Methodology:** Links for "Historic prices", "Exchange prices", and "Carbon Market Daily".
- Carbon Resources:** A section at the bottom right.

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Global and North American Carbon Markets



What is the EU ETS?

- **By far the largest cap-and-trade program in existence**
- Started Jan 1, 2005
- Covers all 27 Member States of the European Union, Norway linked
- Cap is now at 2.1 bn tCO₂/year
Covers 46% of EU CO₂ emissions
- Sectors covered:
 - Power and heat
 - Refineries
 - Metals
 - Minerals
 - Pulp and paper
- 12,000 facilities covered, about 4,000 companies

EU ETS Phase 1 and Phase 2 prices



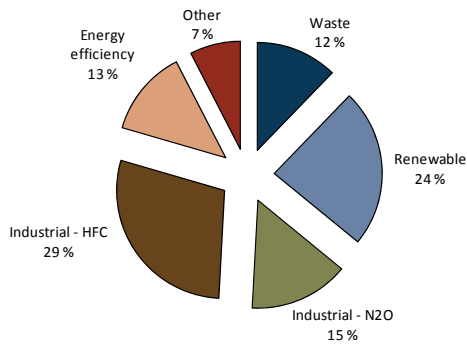
EUA = European Union Allowance, the unit traded in the EU ETS

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Clean Development Mechanism projects



Registered projects per type % of total volume

Volume from registered CDM projects per project type through 2012

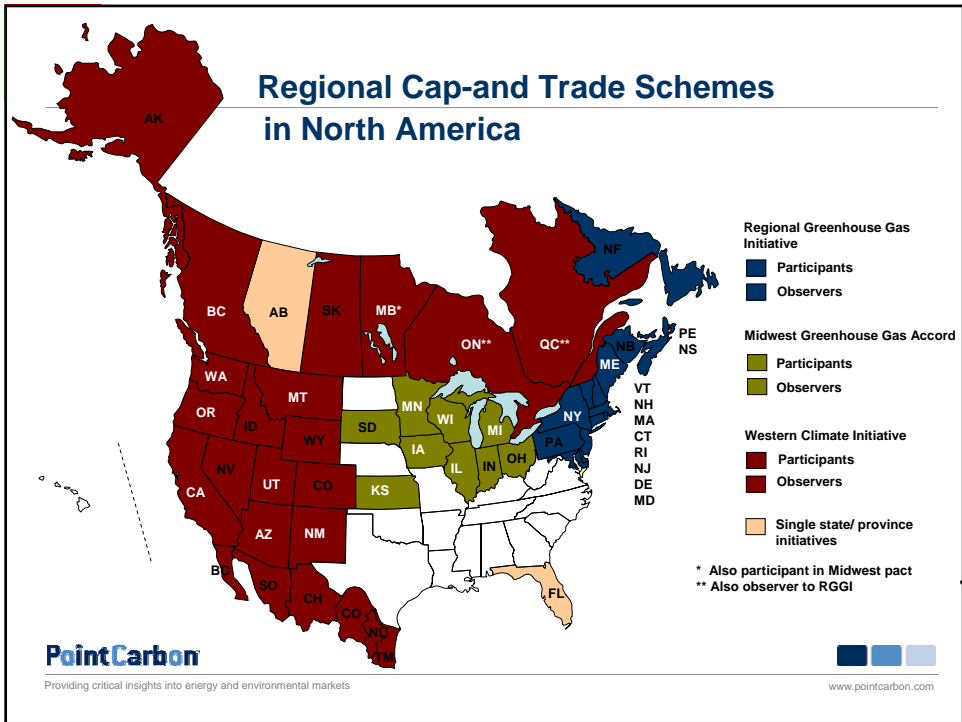
Total:
1571 registered projects
1,6 Gt CO₂e through 2012

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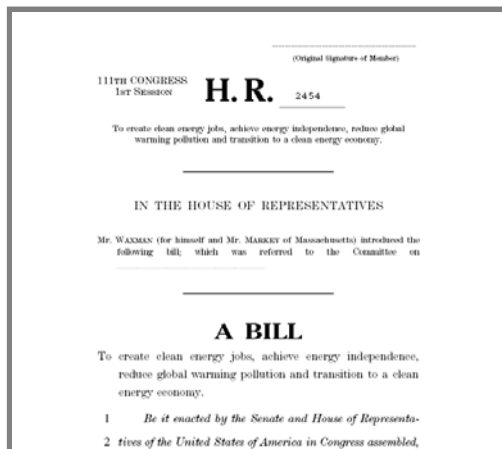
Source Carbon Project Manager as of 2 June 09

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New Congress House bill: Waxman-Markey draft

- Most aggressive climate bill so far:
 - aggressive reduction targets
 - no price cap or valve
- Bill also includes array of energy policies:
 - Federal renewable electricity standard
 - Energy efficiency standards and targets
 - Phase out of HFCs
- Bill now 1,200 pages
- Vote in House by Jun 26



Scope: most sectors and gases covered

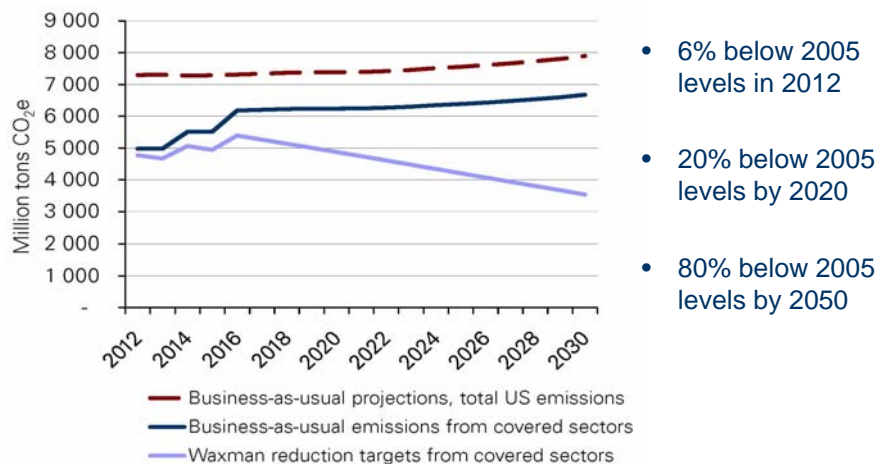
- Economy-wide cap: 85% US emissions covered
- Covers Kyoto Six + 1
 - Covers CO₂, CH₄, N₂O, SF₆, PFCs, HFCs
 - Also covers NF₃
 - Mandates the EPA to look at Black Carbon
- Sectors phased in gradually:
 - Power, transportation (refineries) in 2012
 - All energy-intensive industrial sectors in 2014
 - Commercial/residential heat (via Local Distribution Companies) in 2016

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Emission-to-Cap in Waxman-Markey



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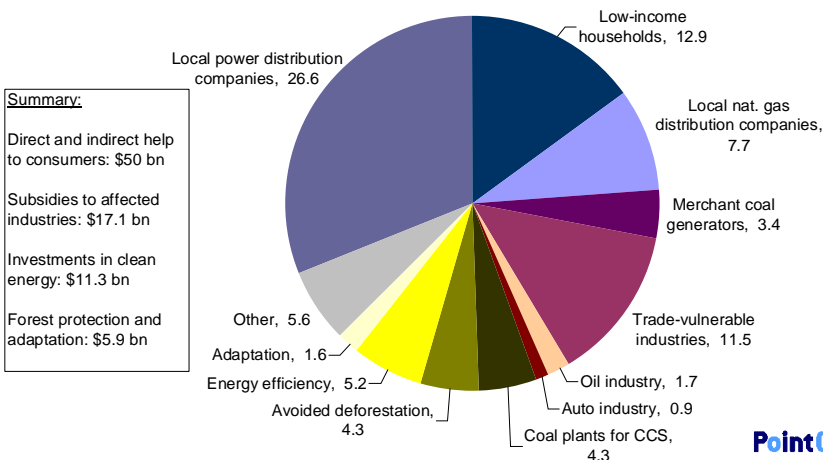


Allowance Distribution

- 49% - helps energy end-users and limiting the increase in energy prices
 - The provisions on the allocation to specifies the allowances are to be used “exclusively to the benefits” of electricity and natural gas rate-payers.
- 20% - mitigation & adaptation
 - Clean energy research and development, funding for state programs on energy efficiency, a multiplier for carbon capture and storage, avoided deforestation, etc.
- 17% - directed to industry and coal power plants (\$250 billion)
 - Merchant coal generators, oil & auto industries

Estimated value of allocation in 2020

Assumption: \$17/ton based on EPA's modeling of the bill, April 2009



Offsets: overview

- EPA in charge of all offset mechanisms, eligible project types decided by "Offsets Integrity Advisory Board"
 - May cede authority to USDA but not clear
- 50/50 domestic/international
- Each offset worth 1 allowance...BUT:
 - starting 2018, need 5 international offsets for 4 allowances
- Maximum pool of offsets each covered entity may use in a specific year is a percentage generated by:
2 billion / (2 billion) + (previous year's cap)
= 30-35% of cap in 2012-2030, up to 63% of cap by 2050
- 1.4 bn in 2012, 1.6 in 2017, 1.8bn in 2023, 1.9bn in 2025, 2bn in 2026

This is very large: existing domestic offset volume in 2012 < 15mt/yr
(Source: Carbon Project Manager North America)

- If domestic supply of credits is below 0.9 bn, EPA can increase % international credits to 1.5 bn

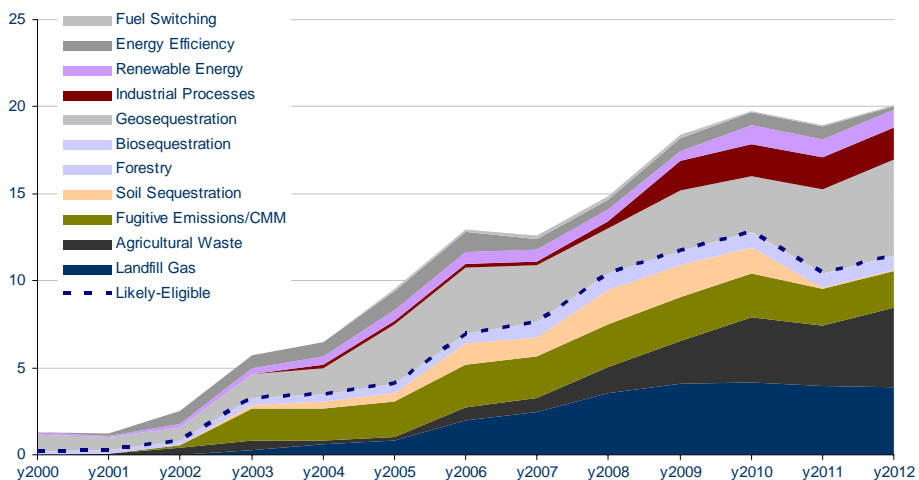
Offsets: domestic

- EPA publishes list of eligible project types 1 year after enactment
 - Preference to existing methodologies
 - Top-down (industry baseline) project methodologies
- Point Carbon assumes the following types could be allowed:
 - forestry
 - soil sequestration
 - manure management
 - destruction of CFCs
- NSPS may limit supply from coal mine, landfill CH₄, and natural gas systems
- Suggested crediting period: 5-10 years
- EPA provides protocols for project verification:
Verifier must be third party accredited by the American National Standards Institute (ANSI) in accordance with ISO 14065

Offsets: domestic (cont'd)

- “Early offset credits” from projects started after January 1, 2001
 - credits must have been issued under existing regulatory or voluntary offset program established before Jan 1, 2009
 - program must have published standards, public registry, serialized credits
 - must have been verified by 3rd party
- EPA decides (compares stringency)
- Likely candidate for early offsets: Climate Action Reserve
- Runner-up: Voluntary Carbon Standard (VCS)
- Likely NOT allowed: CFIs from Chicago Climate Exchange, unless reformed soon

Pipeline of likely eligible US projects



Offsets: international

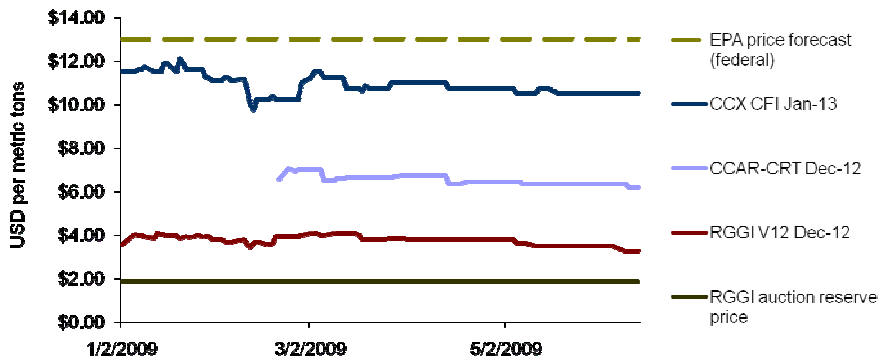
- Only from developing countries
 - Of those, only from countries with which US has bilateral or multilateral agreement
 - Allows offsets from sector-based reductions
 - Allows credits from reduced tropical deforestation
- CERs from CDM:
 all host countries party to UNFCCC
- These don't exist yet;
 See our upcoming reports!

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Prices Vary Depending on Risk and Market



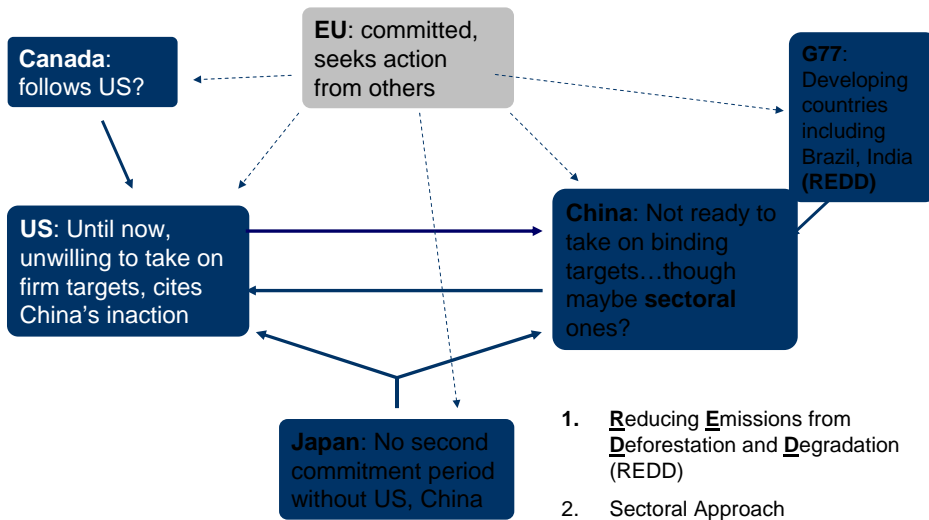
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Source: Point Carbon Project Manager North America

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Copenhagen



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Conclusions

- **Politics:**
 - Obama seems pretty determined to see the bill through
 - Odds that a bill will pass are higher today than yesterday
- **Policy:**
 - Bill has less ambitious target than initially but remains coherent
 - Allocation proposal limits price impact on consumers, power and industry
- **Market:**
 - Program likely to start short unless cap is adjusted
 - Offset supply key price driver until 2030



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Thank you

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