ECO SECURITIES

24 January 28

CCAR Workshop on Carbon Reduction Projects

Carbon Markets & Project Demand

the Voluntary Market in Context

Trading of greenhouse gas (GHG) Emissions Allowances

- EU Emissions Trading Scheme (EUETS) caps emissions at 13,000 facilities
- EUETS allowances (EUAs) traded in 2006 valued at $24.3 billion
- Allowance trading schemes in Japan, Australia, New Zealand, and Canada
- California leading the US, but Federal action is near-certain

Trading of GHG Emissions Offsets, i.e. “carbon credits”

- Kyoto Protocol’s Clean Development Mechanism (CDM)
  - 800 registered projects creating Certified Emission Reductions (CERs) valued at $4.8 billion in 2006
- Voluntary market
  - 23.7 million tCO2e reduced in 2006 through Voluntary Emission Reduction Credits (VERs) worth $91 million
- Future US Federal cap-and-trade program
  - Reach 1990 GHG levels by 2020 (30% reduction) has become the common legislative target

Intro to EcoSecurities

EcoSecurities voted "*Leading Greenhouse Gas Advisory Firm Worldwide*"

- Environmental Finance Magazine (2001-2006).

Market Milestones

- First emission reduction project registered by the UN under the Kyoto Protocol
- First project to receive Certified Emission Reductions (CERs) in the Kyoto market
- Largest number of registered projects in the CDM

Carbon Credit portfolio (at of June 2007)

- **422 projects** reducing emissions using **18 technologies** spanning **35 countries**
- International projects will generate over **140 million carbon credits through 2012**
- Current Gross Value ~ US$3B
- 5 million credits from US project sourced in 2007

Financial Metrics

- London Stock Exchanger Listed (ECO.L)
- Strategic investment by Credit Suisse – June 2007 (9% of outstanding shares, US$60M)

International Portfolio Diversity

Diversification by project type

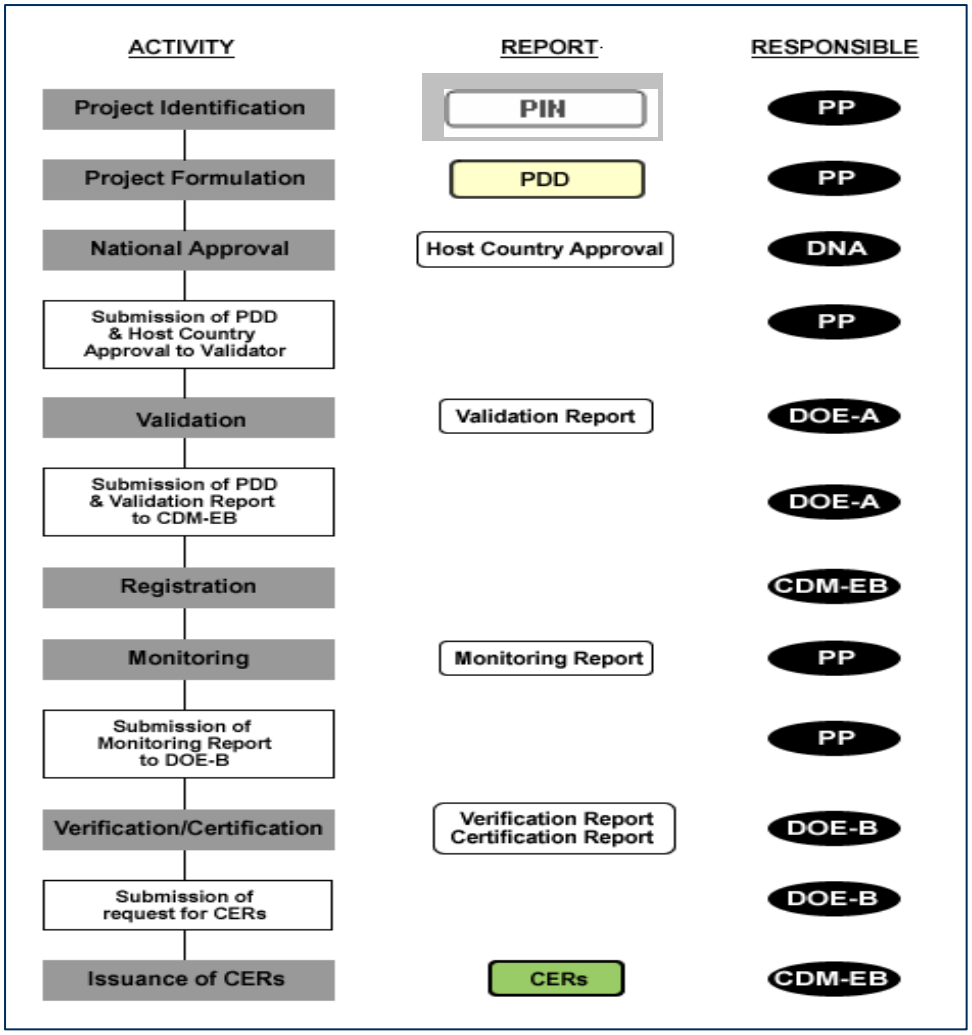
% of Volumes	As at IPO	June 15th 2007
Landfill gas	25%	**6.5%**
Biomass electricity	14%	**15%**
Biodiesel	0%	**8%**
Afforestation	12%	**0%**
Hydroelectricity	9%	**24%**
Coal mine methane	8%	**3%**
Anaerobic digestion - Wastewater	6.5%	**3.5%**
Anaerobic digestion – Swine	1.5	**1%**
Natural gas fuel switch	7%	**9.5%**
Geothermal	4%	**4%**
N2O	0%	**11.5%**
Other	13%	**13.5%**
Total	100%	**100%**

Diversification by geography

% of Volumes	As at IPO	June 15th 2007
China	29%	**44%**
Brazil	27%	**12%**
Indonesia	2%	**8%**
India	0%	**4%**
Thailand	7%	**3%**
Rest of Asia	6%	**4%**
Rest of South & Central America	12%	**12%**
Eastern Europe	4%	**1%**
Rest of Africa & Middle East	13%	**12%**
Total	100%	**100%**

Highly diversified portfolio, reducing technology, country, policy, and performance risk

Implementation Services



EcoSecurities guides projects through the process of verification and monitoring

PIN=Project Idea Note
PDD=Project Design Document
PP=Project Participant
DNA=Designated National Authority
DOE=Designated Operational Entity

Case Study: LFG

Project size:

- LFG flow rate: 200 standard cubic feet per minute (scfm)
- Equivalent to 0.3 million standard cubic feet per day (mmscfd)
- Assume 50% methane content

CCAR additionality/eligibility requirements:

- LFG combustion not required by any regulation, ruling, or ordinance (e.g. NSPS, groundwater quality, odor abatement, etc.)
- End Use: flare, electricity generation, thermal energy (boiler), natural gas pipeline, CNG/LNG
- Gas collection & control system operational on or after 1/1/2001.

Emission reductions using CCAR protocol:

+/-20,000 VERs/yr

Risks:

- Reassessment of regulatory additionality annually - only get credit for period when reductions would have been voluntary in the absence of the project

Case study: Anaerobic Digestion

Farm description:

- 2,300 lactating cows
- 400 dry cows
- 1800 heifers

Manure management:

lactating cows: free stall bars → flush to lagoon

dry cows and heifers: open lots → composted for field spreading

Emission Reductions:

- Baseline emissions (BE) – Project emissions (PE)
- BE: Manure from 2,300 lactating cows (x5 tCO_2e/head)
- PE: emissions from equipment and lagoons (digester effluent)
- 2,300 head x 5 tCO_2e =**11,500 tCO_2e**

(based on average BE and PE values)

Case Study: Programmatic Efficiency

Project: Non-profit organization replacing incandescent light bulbs with CFLs in citywide initiative needs funds to buy 3,000,000 light bulbs.

Benefits: GHG savings on the order of **625,000 tCO2**, and

- Reduced electricity bills for low-income citizens,
- Reduced electricity-associated air pollution,
- Community education about climate change and the environment.

Barriers: Lack of commercial availability, higher prices of CFLs, lack of consumer awareness about bulb quality and environmental benefits.

Process:

- Submit workable meth to VER standard to overcome barriers of CDM
- Huge transaction costs and monitoring risks
- Attempt to implement under programmatic framework (no rules yet in either GS or VCS).

Project Quality

Voluntary Carbon Standard (VCS)

- Initiated by The Climate Group, the International Emissions Trading Association, and the World Economic Forum
- Draws heavily on the CDM process for quality assurance
- CDM and CCAR methodologies accepted, but no VCS specific methodologies as of yet. Project proponents can propose new meths for VCS approval.

California Climate Action Registry (CCAR)

- Performance based standards appropriate for US market
- Methodology development using industry experienced stakeholder workgroups
- Positive perception in marketplace as framework for future compliance credits

Other Sectors of Interest

- **Coal mine methane**

  Abandoned and active mining operations

- **Green Building**

  Retrofit and new buildings

- **Transport**

  Traffic signal optimization, fleet upgrades, truck stop electrification

- **O&G**

  Vapor recovery, DI&M, Green completions, Flash tank separators

- **Pulp & Paper**

  Waste heat recovery, Fuel switch, Steam efficiency

- **Emerging bioenergy technologies**

  Cellulosic ethanol, Gasification, Pyrolysis, Pelletization