



The Role of Project-based Mechanisms in Helping Airlines Meet Future Greenhouse Gas Limitations

*Doug Russell
Natsource*

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*Some new thinking from Natsource.
More growth. Less pollution.*



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About Natsource



- **Leading private sector greenhouse gas asset manager with significant policy and regulatory expertise**
 - Approximately \$1.3 billion of assets under management for return investors and compliance customers
 - New Energy Finance recognized Natsource as the largest buyer of contracted offset credits in the world with over 100 million from CDM and JI contracted
 - GHG emission reduction purchase agreements (ERPAs) entered into in excess of \$1 billion
 - Staff participated in the development of the first GHG offset program and the Kyoto offset mechanisms and arranged some of the first and largest trades in these markets
- **Natsource is comprised of an integrated service platform**
 - Asset Management
 - Origination Services
 - Advisory and Research
- **Headquartered in New York with global footprint**
 - Strategically located proximate to regions developing and utilizing carbon emissions markets and major policy making centers
 - Offices in Calgary, La Paz, London, New York, Ottawa, Panama City, Tokyo and Washington, D.C.



Introduction



- In 2005, a new market in greenhouse gas (GHG) reductions emerged
- By 2007, it was worth over \$60 billion
- International regulatory regime may impose emissions constraints on airlines
- Limited internal abatement opportunities for airlines – but if international project –based credits are eligible for compliance and are interchangeable, a wider range of opportunities could arise
 - International compliance offsets could be an important bridging strategy
- The global carbon market offers important lessons for airlines regarding how to –
 - Control compliance costs
 - Earn returns from early & active participation in carbon markets despite policy and regulatory uncertainties

Environmental and Investor Risks in CDM/JI



- Offset programs to date have not realized their full potential
- Efforts to minimize environmental risks in CDM focus on:
 - Additionality: Risk that project baselines do not adequately address additionality
 - Over-crediting: Risk that over-crediting occurs due to measurement uncertainties
 - Impermanence: Risk that offsets already credited are lost due to unexpected events (e.g. fires, flooding, disease)
- Offset programs have incorporated elements to address environmental risks, but unnecessarily increase investor risks
 - Certainty in rules governing asset creation is necessary to secure project financing

Environmental and Investor Risks (cont'd)



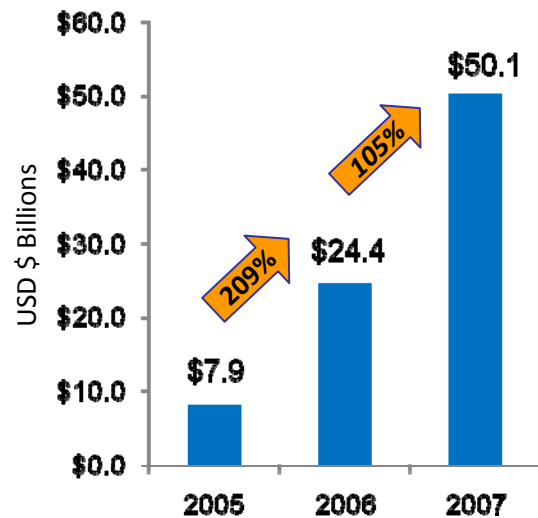
- Investor risks
 - *Project eligibility.* Risk that project will be deemed ineligible to create offsets
 - *Offset eligibility/value.* Risk that offsets will be ineligible for compliance, or have less compliance value than expected, due to restrictions on their use
 - *Offset quantity.* Risk that eligible offsets from a project will be different than expected because monitoring and verification (M&V) requirements not clearly defined at outset of activity
 - *Impermanence.* Risk that forestry and sequestration offsets are lost due to fire, etc, have to be replaced

Carbon Market Growth and Development

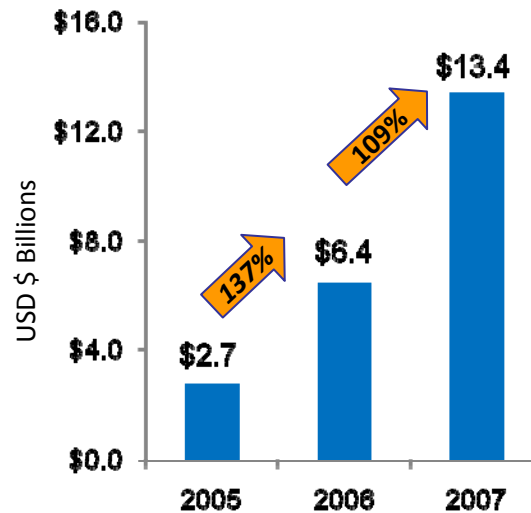


- Despite risks, market growth in the trade of project-based assets has been significant

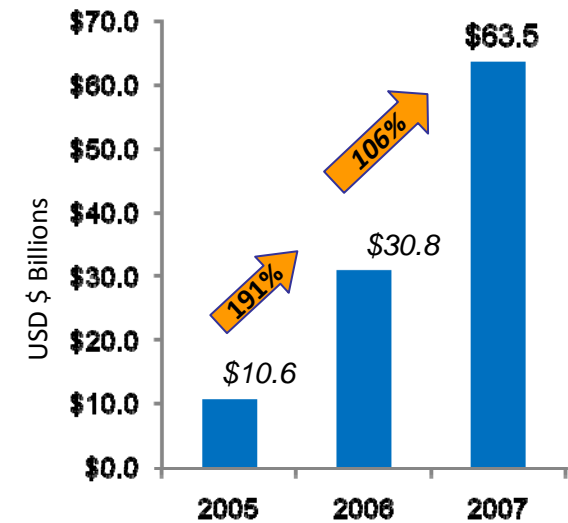
Value of Allowances Traded



Value of Project-based Transactions Traded

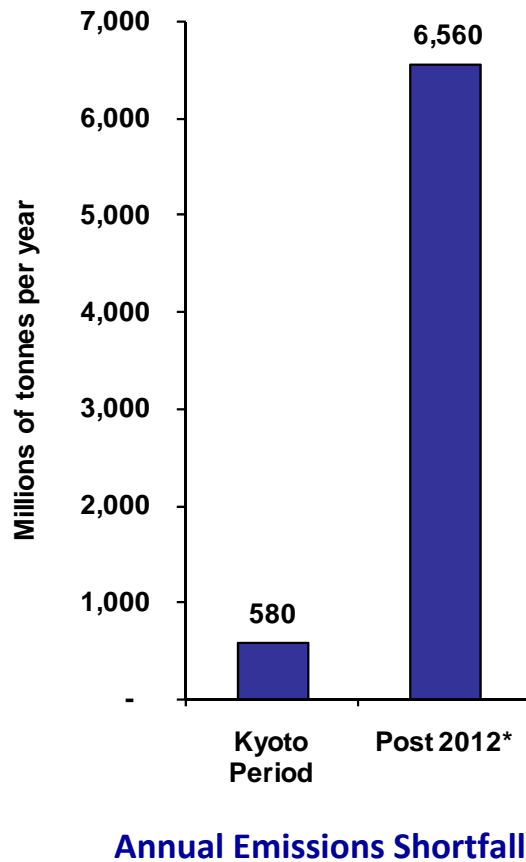
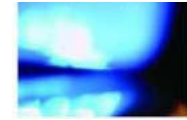


Value of Carbon Market



Data derived from the World Bank's 2006, 2007, and 2008 "State of the Carbon Market" reports.

Policies Stimulating Future Carbon Market Growth



- ### Policy Drivers
- U.S. policy is likely to strongly influence global carbon market
 - Expansion of EU-ETS in progress
 - Kyoto successor accord under negotiation
 - Global demand for GHG reductions could grow ten-fold
 - CDM/JI could be upgraded to provide greater supplies from eligible countries

* Based on Natsource Advisory and Research Services estimated emissions shortfall created under U.S. legislation plus midpoint of shortfall from expansion of EU ETS. This does not include emissions shortfalls from Japan and Canada. Estimates of U.S. demand based on gap between BAU emissions (Annual Energy Outlook 2008) and grandfathered allocations under U.S. legislation. Estimates of EU ETS demand are subject to change based on the European Parliament's and Council of Minister's amendments during 2008 to the European Commission's final proposal for the EU ETS in Phase 3.

Offsets can help with Cost Containment



- Average price for offsets from the Clean Development Mechanism in 2007 was \$13.60, compared with average EU allowance prices of \$27.43*
- EPA estimates that
 - Offset use has larger price impact than availability of key technologies (carbon capture and storage, nuclear power)
 - If Lieberman-Warner bill allowed unlimited offsets, allowance prices would decrease by 71%**
- If Lieberman-Warner bill allowed international offsets up to 15%, prices would decrease***
 - ~60% (from \$35-40 to \$15) up to 2015
 - 44% (from \$45 to \$25) up to 2020

* World Bank, "State and Trends of the Carbon Market 2008" (May 2008) and LEBA

** Relative to the bill as written. EPA, "Analysis of S. 2191 in 110th Congress," March 14, 2008

*** New Carbon Finance, "North America White Paper – February 2008"

Moving from Voluntary to Mandatory



- Once regulations enter the picture, project-based mechanisms take on a different dimension help compliance flexibility
- Voluntary offsets may or may not be recognized for compliance
- Prices for compliance instruments tend to be higher than voluntary due to more rigorous standards and higher demand, despite a growing voluntary sector of the carbon market
- Airlines faced with potential compliance exposure need to:
 - Assess the magnitude of their exposure
 - Determine what is cost effective to do internally first
 - Determine a purchasing strategy to make up any difference
 - “In-house” purchasing program
 - Outsource to qualified management firms

Airlines and the International Market



- Lowest of the "low hanging fruit" in international CDM market is gone
 - Purchased primarily by European and Japanese firms
- However, there are still some untapped asset classes
 - Opportunities exist in JI markets
 - Few international forestry related credits have come to market
 - The new idea of "Reduced Emissions from Deforestation and Destruction" of tropical forests could produce substantial new volume
 - Significant opportunities exist in energy efficiency and renewables, although CDM processes need to be improved
 - North American domestic offsets are relatively un-tapped
- Airlines can implement strategies to navigate the project-based mechanisms and reduce compliance costs and investor risks significantly



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