



Understanding Carbon Market Segments

Regional demand and impact on Latin America

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Latin American Carbon Forum
Lima, 5th September 2007

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Kyoto / non-Kyoto Summary

- Under Kyoto, the EU-15, Canada and Japan are short; the EU New Member States and Former Soviet Union are long
- International Emissions Trading (one of the three Kyoto Flexibility mechanisms, along with Joint Implementation and CDM) has not been conceptualised and used to date. This would impact the demand of the above countries for Latin American CDM.
- The US never ratified the Kyoto Protocol, but a mandatory federal GHG reduction programme is expected around 2011. It is likely that CERs would be acceptable for compliance, but also likely that the market price will mean that in practice they are not used.



EU-15 Projected CDM/JI/ET Purchase and Budgets

| Country | Projected annual ER through use of Kyoto Mechanisms (Mt CO ₂ e) | Allocated budget €m |
|--------------|--|---------------------------------|
| Austria | 7 | €288m (2003-12) |
| Belgium | 8.55 | €276m |
| Denmark | 4.5 | €152m |
| Finland | 2.4 | €42.72m up to 2005 |
| Germany | Not decided | €13m so far |
| Ireland | 3.6 | €20m for 2006 |
| Italy | 39.6 | €169.5m so far, €1,150m 2006-11 |
| Luxembourg | 3 | Not specified |
| Netherlands | 20 | €600m |
| Portugal | 1.86 | Not specified |
| Spain | 20 | €250m |
| Sweden | 1 | €28m |
| Total | 111.51 | €2,989.22m |



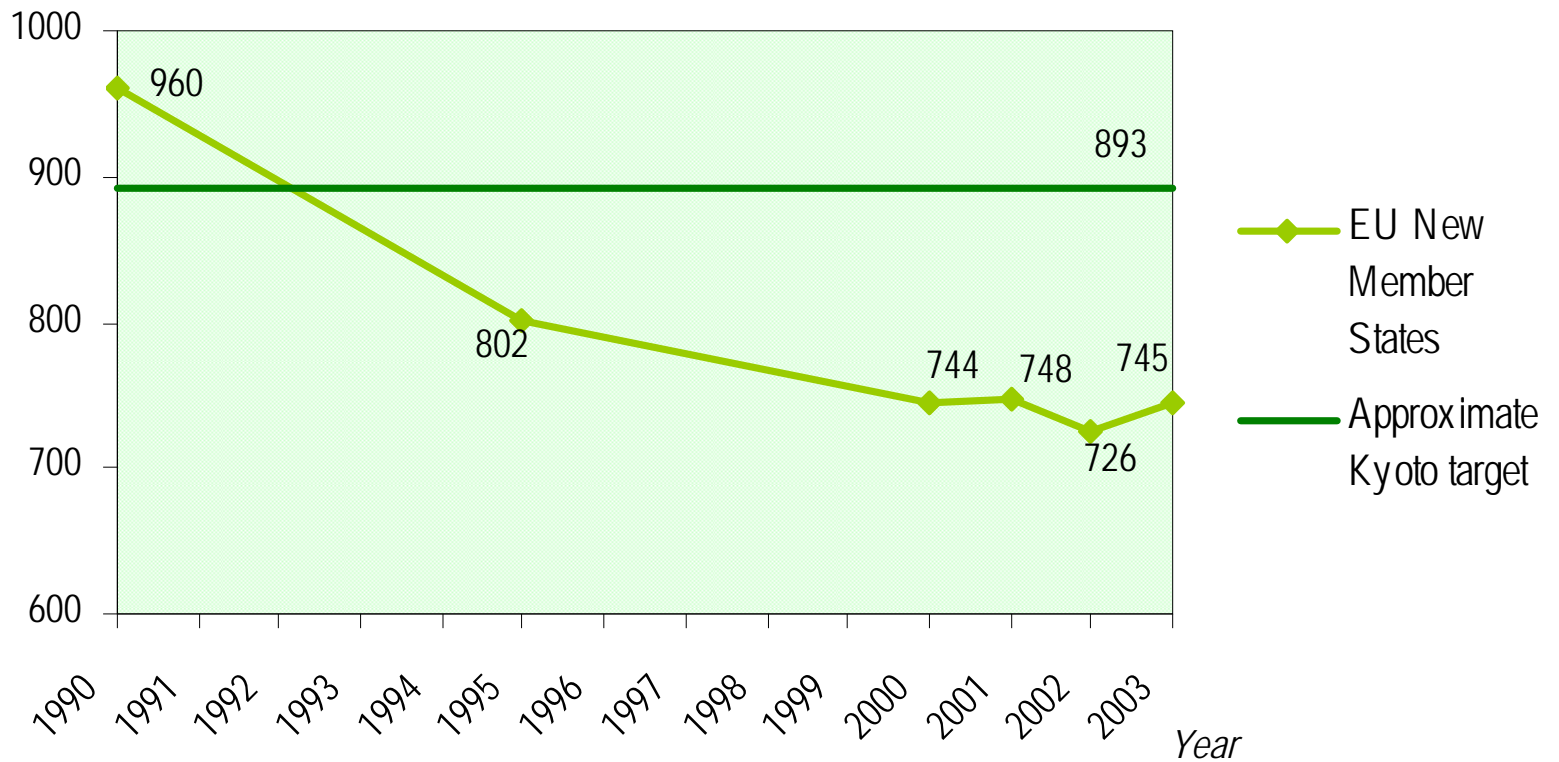
EU 15 Observations

- Many of the EU governments were early participants in the PCF and other World Bank carbon funds
- Subsequently, the most successful procurement programmes have been the Austrian, Danish and Dutch. There has been a surprising lack of activity from some countries given their demand projections
- Through the passing on of targets, EU ETS partially alleviates the need for governments to act



New EU Member States: Distance to Target

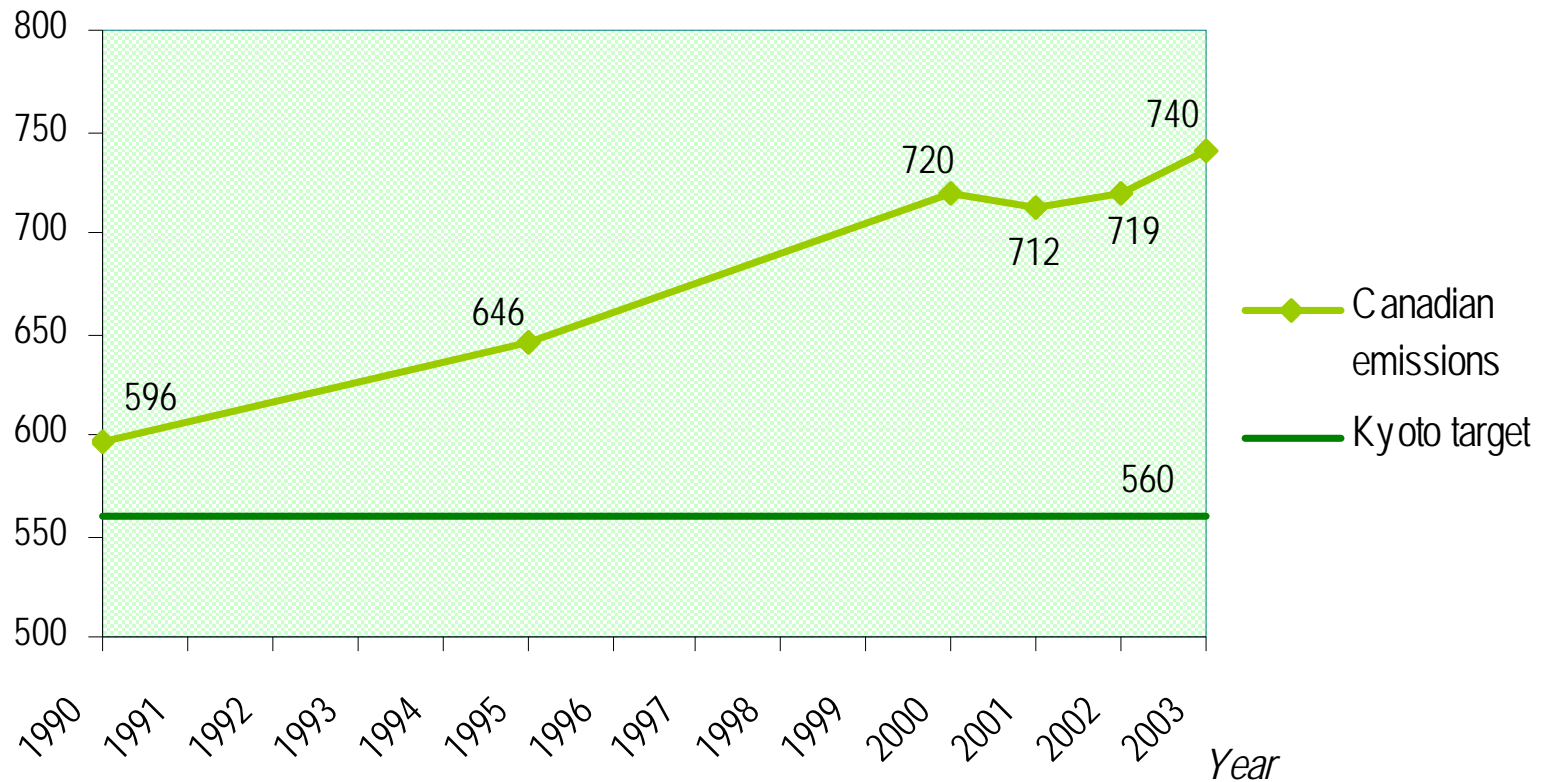
Mt CO₂e





Canada: Distance to target

Mt CO₂e





Canada

- Canada is falling short of its Kyoto target by more than 280 mt / year, 1.4bn tonnes over the commitment period, 34% above Kyoto target.
- This implies such a significant cost to the tax payer, that it is hard to imagine Canada honouring its target
- At the moment it is unclear to what extent Canada will aim to achieve any target
- The most recent announcement was in April 2007 when the government proposed a plan to reduce by 20% against 2006 emissions, which would lead to demand for 150mt / year
- Limitations on CER use are anticipated, with an option to contribute to a “Technology Fund”



Japan

- Target is 6% below 1990, and the cost of domestic abatement is amongst the highest in the world
- JBIC estimates that Japan will be short by 600-800 mt 2008-2012, but in contrast to Canada, “Japan will meet its targets”
- Japan launched a plan in 2006 to purchase 100mt, and in 2008 will have a budget of €100m (three times 2007 budget)
- However, emissions are expected to be 0.9 - 2.1% above 1990 by 2010
- The Kashiwazaki earthquake, damaging the world’s largest nuclear plant, is expected to lead to a 28mt / yr increase (2%)
- Demand for credits outside China is high, although increased pressure makes companies less selective



The US Market

- An economy wide, mandatory, federal system to cap GHG emissions is unlikely before 2011
- Given the nature of the bills going through the executive, demand for compliance units is projected to be anything between 259 – 1,215 Mt / year by 2015 (*Source: New Carbon Finance*)
- Commentators expect prices to remain low initially (ranging from \$5 - \$30 per tonne). Project offsets are envisaged as a compliance option by many of the bills up for discussion, including CERs, however the target reductions and envisaged domestic offset rules mean that CERs would be a “last resort” compliance option, but serving an important function as a “price cap”.
- The US is therefore unlikely to be a strong buyer of CERs during the next 5-7 years.



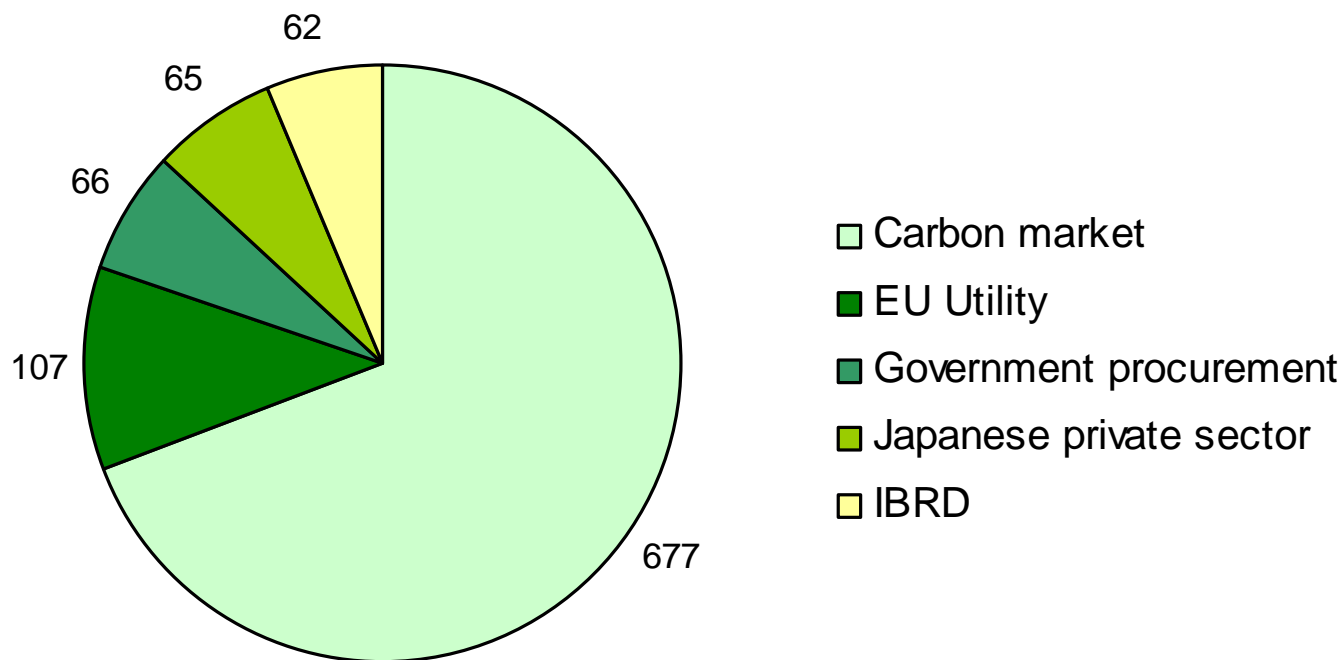
CDM Demand Profile

- Of the top 25 largest buyers by project number, only 3 are public / domestic procurement schemes, plus the IBRD
- Only 3 are European utilities and 3 are Japanese companies buying for compliance with voluntary targets
- The remaining 15 are dedicated carbon market companies (private sector), either buying specifically on behalf of compliance entities or acting as project developers / intermediaries / speculators

| Public Buyer | Number of Projects | Ranking |
|--------------|--------------------|---------|
| IBRD | 62 | 3 |
| Austria | 30 | 14 |
| Denmark | 18 | 22 |
| Japan | 18 | 22 |

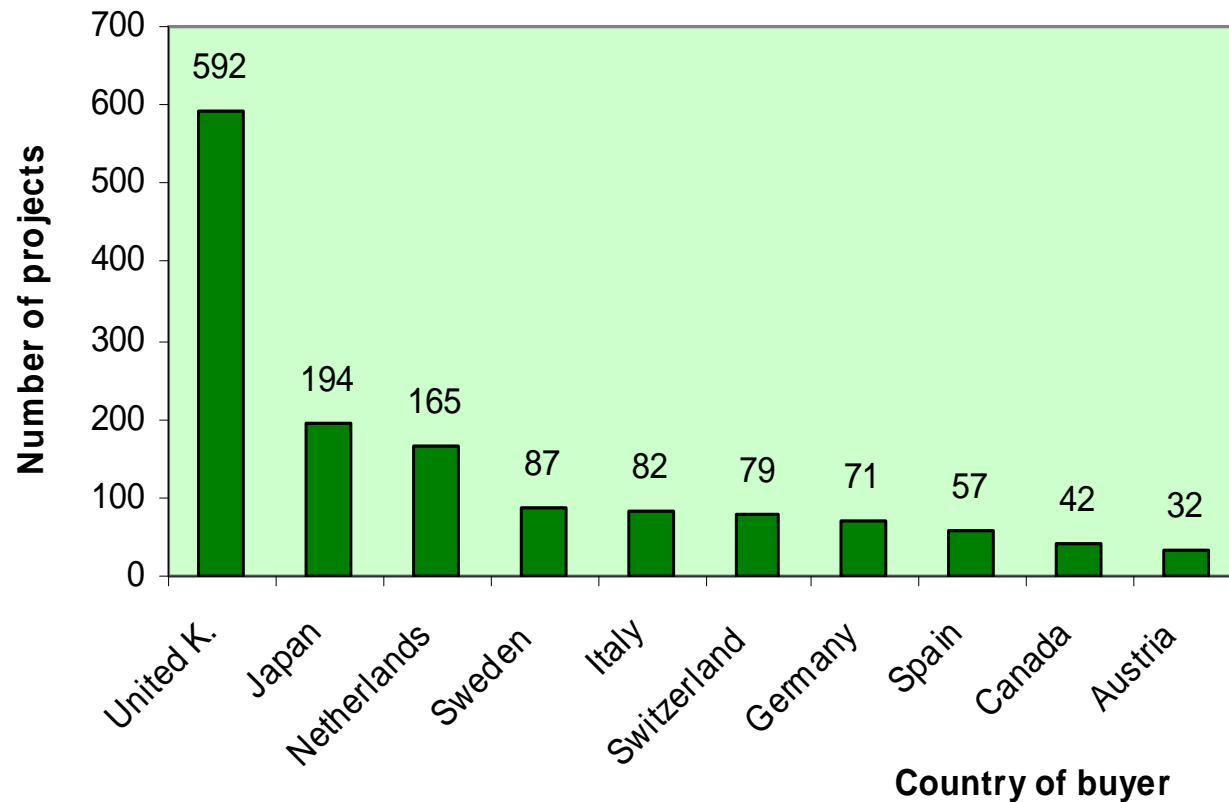


Purchasing Profile by Buyer Type *(project numbers for top 25 buyers)*



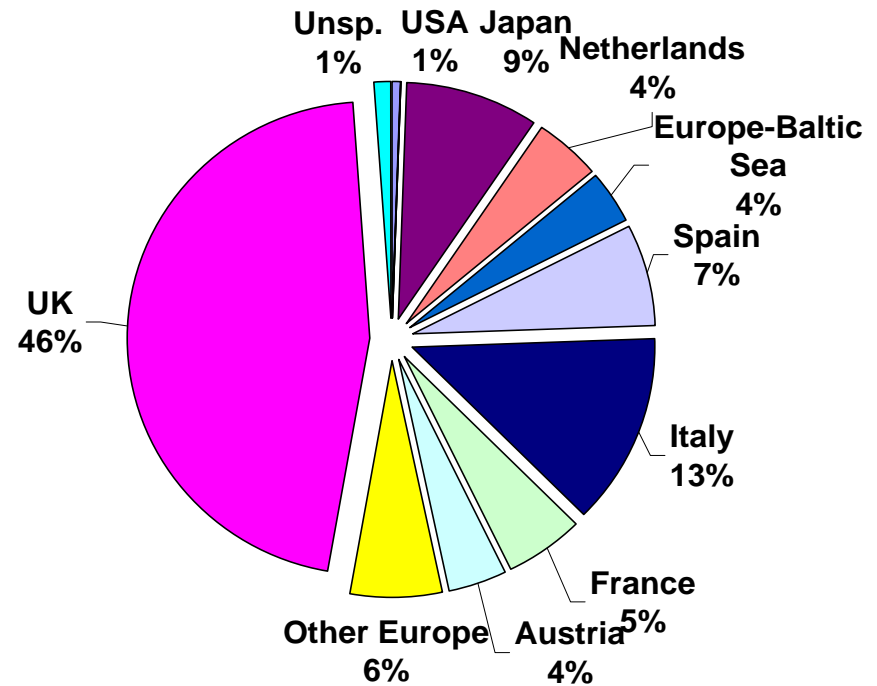
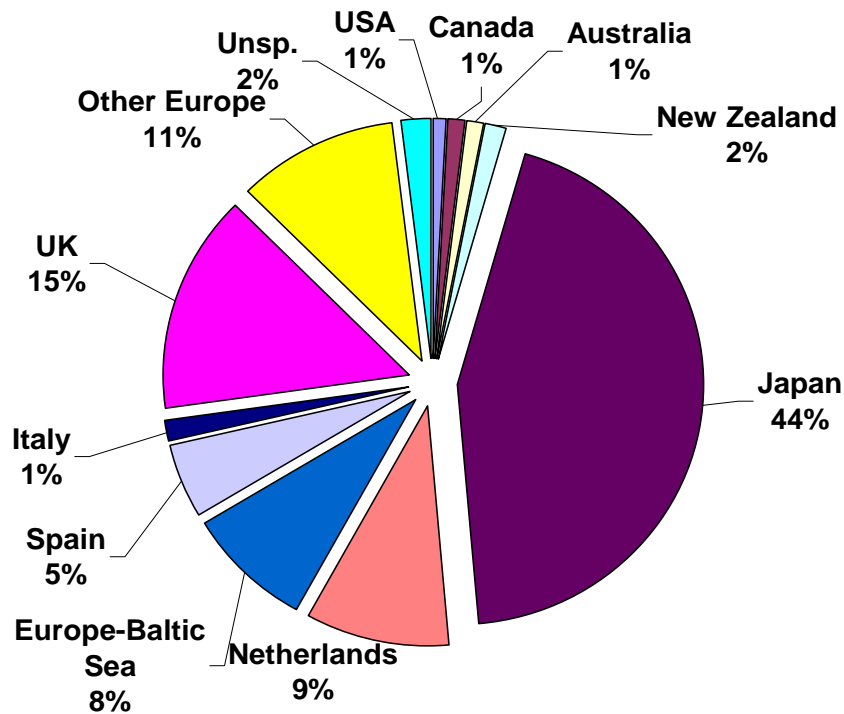


Jurisdiction of Buyers by Project Number





Buyer jurisdiction in 2005 vs. 2006





Latin America is an attractive source of CERs

- “No China, no industrial gases”
- All eggs in one basket – portfolio diversification effort
- Many infrastructure and energy projects
- Many good quality counterparties with access to project finance
- Retail buyers seeking high quality CERs from energy efficiency and renewable energy with a focus on sustainable development benefits



Explanations offered for the demand patterns in L America

- High energy and industrial emissions in Asia, particularly China, combined with high population and economic growth make it relatively easy to find projects on an ERPA basis
- 590 projects with 344m CERs to 2012 in Latin America, compared with 1,716 projects with 1,771m CERs to 2012 in Asia & Pacific
- Some countries in the region will continue to see low footfall from buyers because of political risk (Bolivia, Venezuela)
- Many projects seek project finance in addition to carbon offtake - those that don't often develop their projects unilaterally



Summary & Demand Predictions

- The **North American** markets are unlikely to be a source of direct demand for CERs, however the policies enacted, the success of new technologies and availability of domestic offsets could have a material effect on price and therefore future demand (for example carbon capture and storage)
- **Japan** will remain a strong buyer (both public and private sectors), with a preference in the first instance for Latin American credits
- **EU** policy and market infrastructure has created an obvious niche for private buyers, particularly in the UK, acting on behalf of compliance companies or government, or as aggregators / speculators
- Expect to see **new players** (EU compliance buyers, investment banks, intermediaries, funds) entering the primary market, more **integrated CER / project finance solutions** and an **increased willingness to contract post-2012**



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- Camilla is an Investment Advisor to Trading Emissions PLC, a US\$700m AIM listed investment company that offers its investors exposure to the carbon market through the acquisition of carbon credits. Camilla leads TEP's transactions in Central and Eastern Europe and also focuses on CDM projects in Latin America. She works on origination, negotiation and execution of carbon purchase contracts, debt structures and direct investments and has been the lead adviser for a major equity investment in a Latin American renewable energy project.
- Prior to this Camilla worked with Vertis Environmental Finance in Budapest, where she was responsible for structuring and executing some of the first Joint Implementation and early stage EU Emissions Trading Scheme (ETS) transactions. Before joining Vertis, Camilla advised companies with targets under the UK ETS, the first economy wide emissions trading scheme.
- Camilla holds a Master's in Environmental Economics from University College London with distinction and an honours degree in Biological Sciences from Oxford University.