Harvard Electricity Policy Group

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Carbon markets: why and how?

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Section 1

The Morgan Stanley Team

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Expertise and Investments

•Morgan Stanley has allocated USD 3Bn for investments in the carbon market
•Experienced carbon team with detailed understanding of regulatory issues
•Substantial commodities experience in structuring complex trades

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Section 2

The Big Picture

Carbon trading vs carbon tax

- Global problem requires global solution
- Most cost-effective solution is same carbon price worldwide
- Carbon trading allows different emission reduction obligations but the same carbon price
- In contrast, concept of same carbon tax level being implemented worldwide not realistic…
- …plus the same carbon tax wouldn't necessarily require greater emission reductions from those countries expected to make the first move to address climate change (developed countries)
- Climate change is an environmental problem where a tipping point exists. For that reason, a focus on a quantity limit (carbon trading) as opposed to a price limit (carbon tax) is appropriate

Carbon trading vs carbon tax (continued)

- Frequently asserted that carbon tax is simpler to implement than a carbon trading scheme. Whereas:
  - Monitoring, reporting and verification system requirements identical
  - Seldom the case that the same tax is applied uniformly; normally different tax levels applied/ tax discounts given plus exemptions often granted
  - Difficult to see how this process differs in nature to the allocation process for granting allowances for free
  - Tax levels often subject to a political budgetary process on an annual basis: so no guarantee of long-term price certainty
  - Difficult to see how this degree of certainty definitively differs from the issue of length of allocation period
  - Logic extends to windfall profits issue, offset credits etc. Any policy can remain simple or become complex

The EU emissions trading scheme

- The EU ETS has classic cap and trade design; closely modelled on Acid Rain Program
- So serves as a broad blueprint for other schemes as they develop across the world
- Assessing the scheme on its design and its objectives, it has been a success
- Too much focus on 2005-7 over-allocation
  - Always described as being a short learning-by-doing phase
  - Over-allocation swiftly corrected for the 2008-12 phase
- Why did it happen?
  - Scheme was implemented at a record pace: not enough time to collect third-party verified installation-level data as a basis for setting the 2005-7 cap
- More broadly, many of the lessons learned need to be seen in this context: capable of being resolved through small streamlining changes

Successful design features of the EU ETS

- Source-based system: addresses emissions at the smokestack where best able to be reduced
- Monitoring and reporting standards are high and represent years of improvement and consultation
- Electronic registries system for holding allowances is modern, fast and secure
- Solid and effective compliance regime; ensures that the emissions cap is upheld through time through fixed high penalties and a 1:1 make-good provision
- The 2008-2012 emissions cap will require substantial emission reduction action
- Free-market approach: no market intervention/price controls
- Access to emission reductions generated outside of the EU ETS:
  - –Quick link to the international carbon market (project credits)
  - –Creates a safety valve which simultaneously encourages investment

Emission reductions to date

- Question often raised is: has the EU ETS delivered emission reductions?
- Answer: yes. Two examples:
  - Immediate response to the carbon price in power markets through dispatch system: benefit from scheme being source-based not load-based
  - Millions of tonnes of emissions reductions generated overseas through the Kyoto Protocol project mechanisms
- Kyoto Protocol registered projects' forecast is 600Mt by 2012 with project pipeline forecast between 1.3 bn to 2.0 bn tonnes by 2012
- Substantial investments made by carbon funds, banks, firms with compliance obligations, commodity traders and governments
- Consulting reports suggest investments of up to USD 7Bn into the carbon market

Section 3

Some Lessons Learned

Data Verification

- Data quality is paramount to a successful ETS
- EU ETS monitoring and reporting standards are high
- But the EU ETS legislation did not provide the same underpinning for verification standards, and equally the accreditation standards for approving verifiers
- Therefore verification and accreditation standards are not harmonised across the EU ETS
- This is work in progress e.g. www.pwc.nl/trustemissions
- **Lesson learned**: treat monitoring, reporting and verification as a coherent whole; so harmonise verification and accreditation across the EU to a high standard

Data release

- Generally 4 principles for releasing market sensitive information or data:
  - the information/data is correct
  - it is summarised, e.g. using headline figures, in a neutral and easily understandable way
  - the date and time for the release is announced at least a few days in advance
  - the whole market can access the data simultaneously (e.g. through a web site)
- Fulfilling these principles gives the market confidence and sends the signal that the ETS is run professionally
- **Lesson learned:** market sensitive data can no longer be released through surprise political statements/speeches; government officials may need training on market abuse/insider trading rules

Allocating emissions allowances

- Emissions cap has to be set below emissions levels and tight enough to enable incentivisation and achievement of targeted reductions
- The carbon market affects prices in other markets, and vice versa
- If the emissions cap is not set far enough ahead, multiple market prices can be influenced by rumours and political signals, which generates additional volatility
- **Lesson learned:** trading periods of 3-5 years are not long enough; set at least the total emissions cap far enough ahead e.g. 10 years
- Planning investments requires substantial forward planning
- Power plant investments require a 15 to 20 year payback period and carbon pricing will be key in assumptions made for debt and equity financing plus commodity hedging of new plants
- **Lesson learned:** this is an additional reason why trading periods of 3-5 years are not long enough; the methodology for distributing the emissions cap amongst companies needs to be stable and predictable through time

Variable market participation

- Even if there is a theoretical financial incentive to participate in an ETS market, experience in both the UK ETS and EU ETS shows that market participants that have allowances to sell don't always enter the market
  - possibly because the company's day-to-day business means that it is not so active in markets in general
  - possibly because current accounting rules do not require the market value of allowances as an asset, and the market value of emissions as a liability, to be shown on the balance sheet
- If these market participants are over-allocated allowances as a form of compensation e.g. because they are more exposed to international competition, the imbalance in the market between active buyers and sellers is further aggravated with price implications
- **Lesson learned:** instead of compensating certain market participants through allowances, it is better to consider auctioning allowances and then providing compensation through Auction Revenue Rights (as per the New England transmission markets). This ensures full participation in the market and the recognition of the value of allowances on the balance sheet, whilst still allowing policy goals to be attained

What's happening outside of the EU?

- Norway will adopt the EU ETS Directive as apart of the EEA agreement
- Switzerland is focusing on putting in place a tax first (an exemption from the tax will be possible if take on an emissions cap); otherwise design likely to be similar to EU ETS
- Australia's initial design is promising; similar to EU ETS; may be up and running by 2010; likely to give access to UN project credits, in particular Clean Development Mechanism credits
- California and Northeast US States (Regional Greenhouse Gas Initiative) may also be up and running by around 2010
- Northeast US similar in design to EU ETS; but unclear whether system will be over-allocated out to 2015; initial link to international market uncertain since complex process for accessing UN project credits
- California may still adopt a design very different from EU ETS (not source-based but load-based); considering giving access to UN project credits
- Canada further behind in designing system: substantially different from EU ETS e.g. price cap, not cap and trade but intensity-based targets etc.

Section 4

Conclusions

Conclusions

- Carbon tax not a simpler policy instrument, and not appropriate for addressing a global problem
- The EU ETS has been a success and is the major driving force behind the international carbon market
- As a result, investors are actively searching out emission reduction opportunities worldwide
- This market is growing at a rapid pace and presents numerous investment opportunities into the future
- Both the successful design features of the EU ETS, and lessons learned in its development, are highly relevant to other regions developing schemes
- On basis of experience to date, no region faces issues particularly different from other regions: so no need to start re-inventing the wheel and start designing a trading scheme from scratch

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