

The Carbon Trading Market: Opportunities and Challenges

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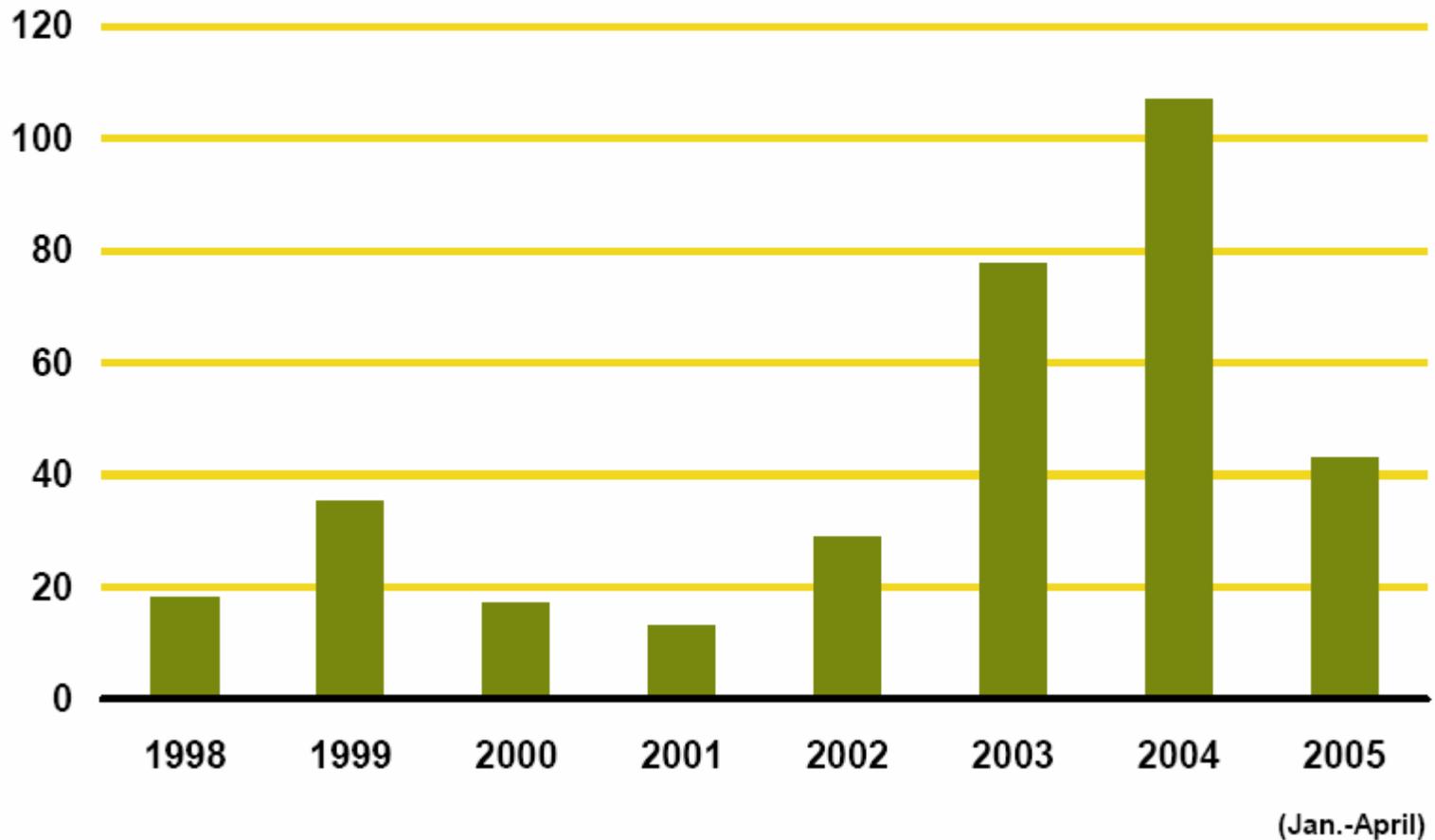
The Kyoto Protocol

- Requires EU, Canada, Japan (Annex 1 countries) make mandatory cuts in emissions of carbon dioxide and other gases.
- By 2012 EU must reduce CO₂ 8%; Canada 6%; Japan 6% from 1990 levels.
- Kyoto came into force on February 16, 2005 (90 days after Russia ratification).
- Countries require large emitters to reduce GHG emissions.

Clean Development Mechanism (CDM) & Joint Implementation (JI)

- Kyoto allows Annex I countries to reduce emissions by investing in GHG reduction projects in non-Annex I states through CDM and JI.
- Western investors look for cheaper GHG reductions than can be found in their countries.
- CDM operates predominantly in developing and JI countries in Eastern Europe/FSU.

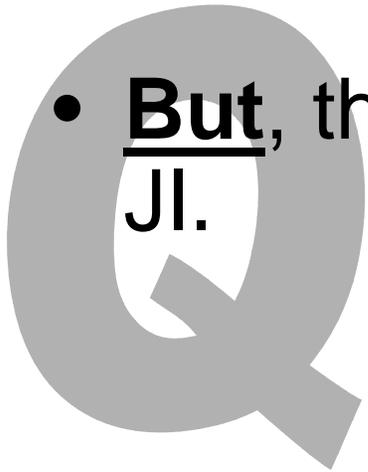
FIGURE 1: ANNUAL VOLUMES (million tCO₂e) OF PROJECT-BASED EMISSION REDUCTIONS TRADED (up to 2012 vintages)



Source for this and next slides: IETA and World Bank

What Does All This Mean?

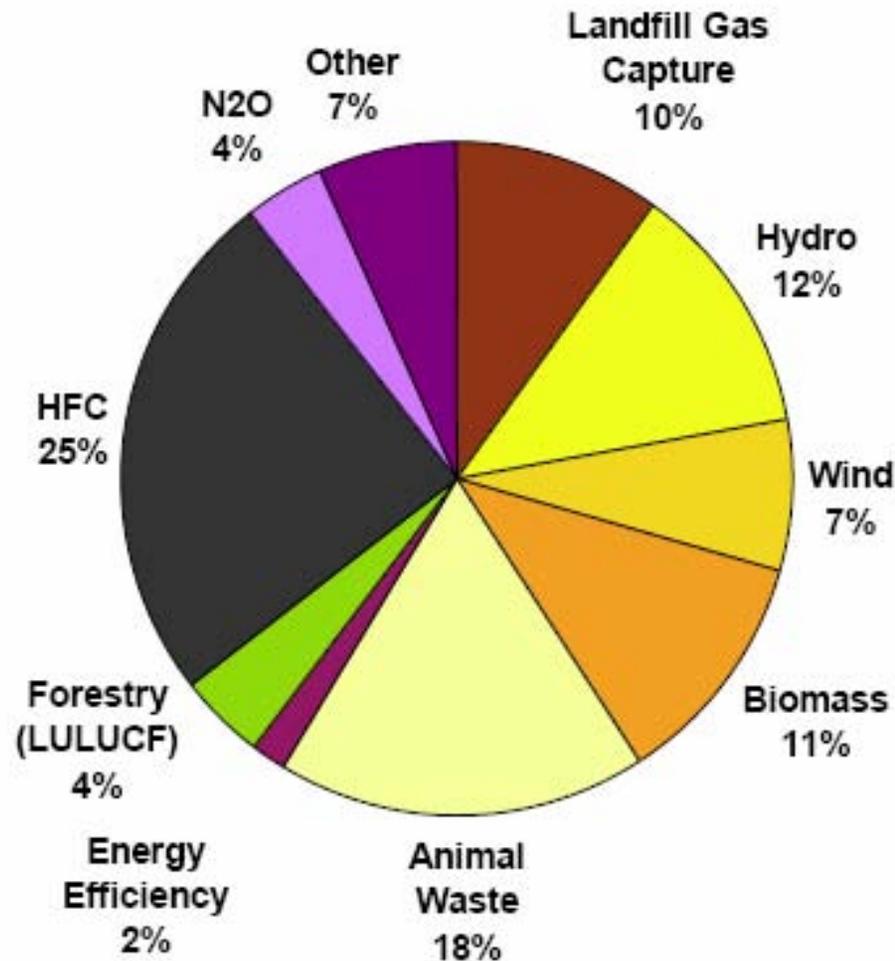
- If you have a project – preferably not implemented – that reduces GHGs, you may be able to “**monetize**” these reductions.
- These projects are “**carbon assets**” that bring in extra revenue each year until 2012 and possibly beyond.
- **But**, these projects must be eligible under JI.



Methane Reduction Projects

- Projects need to demonstrate a reduction in GHG emissions from the business as usual scenario.
- For every tonne of methane reduced, 21 tonnes of CO₂ credits can be generated.
- One of the most popular CDM projects is landfill gas recovery
- Oil and gas companies for various reasons have not taken advantage of this potential opportunity.

Breakdown of Projects by Type



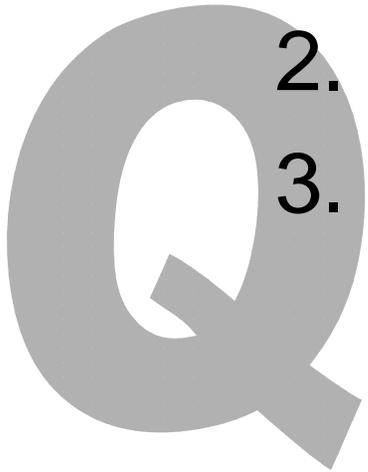
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CDM vs. JI

- CDM is more advanced
- Process is clear, although very bureaucratic
- CDM Board, regulator exists, unlike JI Supervisory Committee
- 24 CDM methodologies approved, but only 2 in oil and gas sector
- Project development in CDM (PDD, baseline, monitoring, etc. will be similar for JI)
- So useful lessons can be learned from CDM

How to Develop a JI Project

- Track 1 vs. Track 2
- Develop a PDD – similar to the CDM process – 3 key issues:
 1. Baseline
 2. Monitoring
 3. Additionality



Project cycle (Track 2)

1. **Project Proponent (PP) identifies project idea and screens for JI eligibility**
2. **Preparation of Project Design Documentation (PDD)**
3. **Submission of PDD to Independent Entity (IE)**
4. **IE**
 - **makes PDD publicly available for comments**
 - **determines if the PDD meets requirements**
 - **makes publicly available summary of comments & how they were taken into account**
5. **Possible review by JI Supervisory Committee**
6. **Final project approval if**
 - **review is positive**
 - **no review requested after IE makes PDD public**
7. **Registration of the project with Parties involved**

Developing a PDD: Baseline

- Case of Moldova Project (AM0023)
- Calculating baseline emissions in compressor station leaks – leak survey (# of leaks and leak rate).
- Adjust for changes in pressure, hours of operation, etc. – always good to be conservative
- Alternative scenarios analysis – could this project or something similar result anyway?
- Do national policies require this activity?



Distinguish from Business As Usual

- Clear analysis of leak reduction already taking place.
- Distinguishing between what is done anyway (emergency leaks, leaks in certain areas, etc.)
- Separating by category leaks that have never been looked at (maybe leaks that are hard to reach or in certain categories of components or detected using certain technologies).



How to Determine Additionality

- Financial – maybe transmission entities have no financial incentive other than ERUs
- Technological – new technology, staff not familiar
- Other Barriers – monitoring can't be done without a partner; lack of staff or money
- Common practice: technologies rarely used in country or region
- Have documentation available – start drafting it now!



Other Issues

- Assess environmental impacts (and how they are mitigated)
- Leakage (does the project itself generate GHG emissions). This will be in monitoring plan.
- How have outside stakeholders been engaged and how have their concerns been taken into account?



Monitoring Plan

- Need to list data that will be collected (leak rate in baseline, leak rate during project year).
- Frequency of monitoring, who will collect, what management structure will be established to do the monitoring
- How will the data be archived and organized for a verifier?
- Goal is to make things as easy as possible for a verifier since they write the reports upon which ERUs issuance is based.



MONITORING REPORT

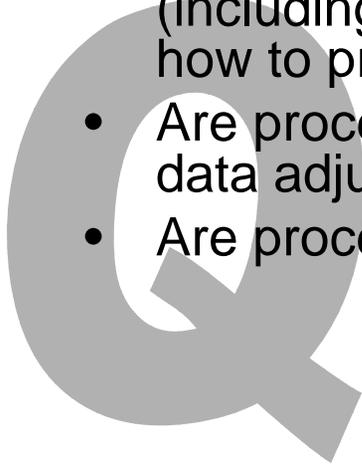
Date of Survey:

Station Name and Location:

Component	Leak Number as written on tag	Location (blow down vent, or Engine No. 1, No. 2, etc.)	Leak Rate in m ³ /hr (Baseline)	Estimated dates for repair or replacement of component	Leak rate at monitoring, Period 1	Rate at Period 2	Rate at Period 3....
Centrifugal seal – oil (Number 1)	1		X cubic meters		X cubic meters baseline – Y actual leak = <u>leak reduction</u>		
Flange (Number _)	2						
Ball/Plug valve (No. _)	3						
Centrifugal seal - dry	4						
Reciprocating seal - running	5						
Control valve (No. _)	6						

Other Questions a Verifier Will Ask

- Is the authority of project management clearly described?
- Is the authority for registration, monitoring, measurement and reporting clearly described?
- Are procedures identified for training of monitoring personnel?
- Are procedures identified for emergency preparedness for cases where emergencies can cause unintended emissions?
- Are procedures identified for calibration of monitoring equipment?
- Are procedures identified for maintenance of monitoring equipment and installations?
- Are procedures identified for day-to-day records handling (including what records to keep, storage area of records and how to process performance documentation)?
- Are procedures identified for dealing with possible monitoring data adjustments and uncertainties?
- Are procedures identified for review of reported results/data?



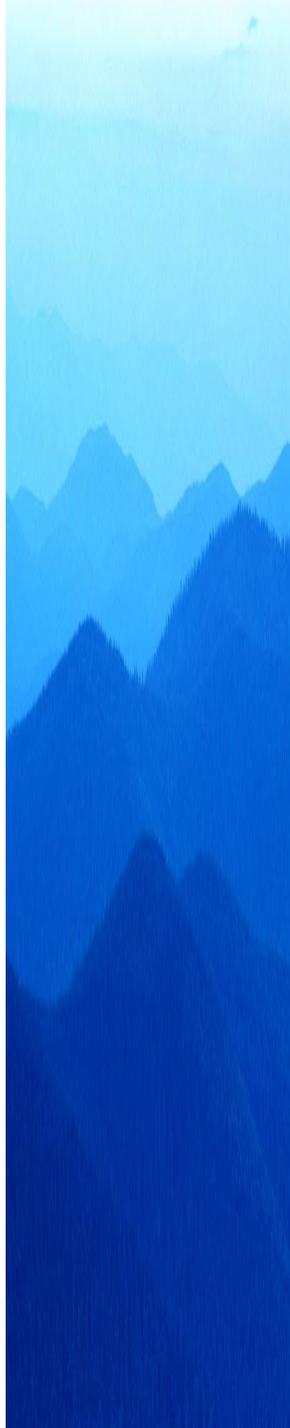
After Verification, Selling the Credits

- Most carbon projects to date have included sales of forward CERs.
- Contract typically stipulates # of tons to be traded, price, money upfront (if any), penalties if verifiable tons are not delivered.
- Some buyers will not have penalties, but they pay lower price.
- A nascent brokerage industry has developed to assist sales.
- Current buyers include Japanese, and European companies, governments and World Bank/IFC/.



Who is QT?

- Specializes in helping projects get accreditation from CDM
- Design baseline and monitoring methodologies
- Evaluating different GHG mitigation options for companies
- Full time office in Russia
- Drafted AM0023



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