National Round Table on the Environment and the Economy

Table ronde nationale sur l'environnement et l'économie

Mike Butters, Vice President Operations

CleanAir Canada Inc.

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Where do I start ?

Option	Description	Implications	
		Pro	Con
Do Nothing	Ignore the international move toward GHG reduction and carbon-constrained future	• No Cost • No Effort	•Regulations are coming •High cost of compliance •Lost financial opportunity
Act Eventually	Wait until the regulations are in place, then adjust company practices to suit the new situation	Greater sense of what is expected of you so you can plan accordingly	• No input on reg. design • Will have to react quickly, without the benefit of prior knowledge
Act Now	Assess your current emissions situation, seek appropriate expertise, and gain practical experience in ER activities	• Can directly influence the design of the system • Increased competitiveness, and possible credit from early action	• Be prepared to take short-term risk for longer term gain. • Commit resources now

NOT AN OPTION

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Basic System Types

	Cap and Allowance	Baseline & Credit
Sector	Capped	Non-Capped
System	Closed	Open
Units	Permits	Credits
Appl'n	Power Generation Industrial Processes Oil and Gas	Renewable Energy Carbon Sinks Landfill

Overview

Evaluation	Technical, financial, environmental, and operational considerations for making decisions
Reporting	Tracking actual emissions, posting on registry or reporting, and tracking ownership
Transaction	Trading and contractual considerations

1. Evaluation

Assess Regulatory Outlook

- Determine current or future reduction requirements, both regulated and voluntary

Create an Emissions Profile (Inventory)

- Measure the *amount*, and determine the *composition* of the emissions
- If capped sector, then it's an indication of your reduction requirements
- If non-capped sector, then it's an indication of reduction potential and revenue generation

Assess Abatement Technology Options

- Add technology (e.g. waste diversion)
- Make process changes (e.g. improve efficiency)
- Make input/output changes (e.g. fuel switch or secondary energy production)

Determine Financial Implications of Abatement and/or Trading

- Cost of abatement vs. credit/permit market cost, expressed as per emission unit
- Revenue generation as a combination o f output value and credit value

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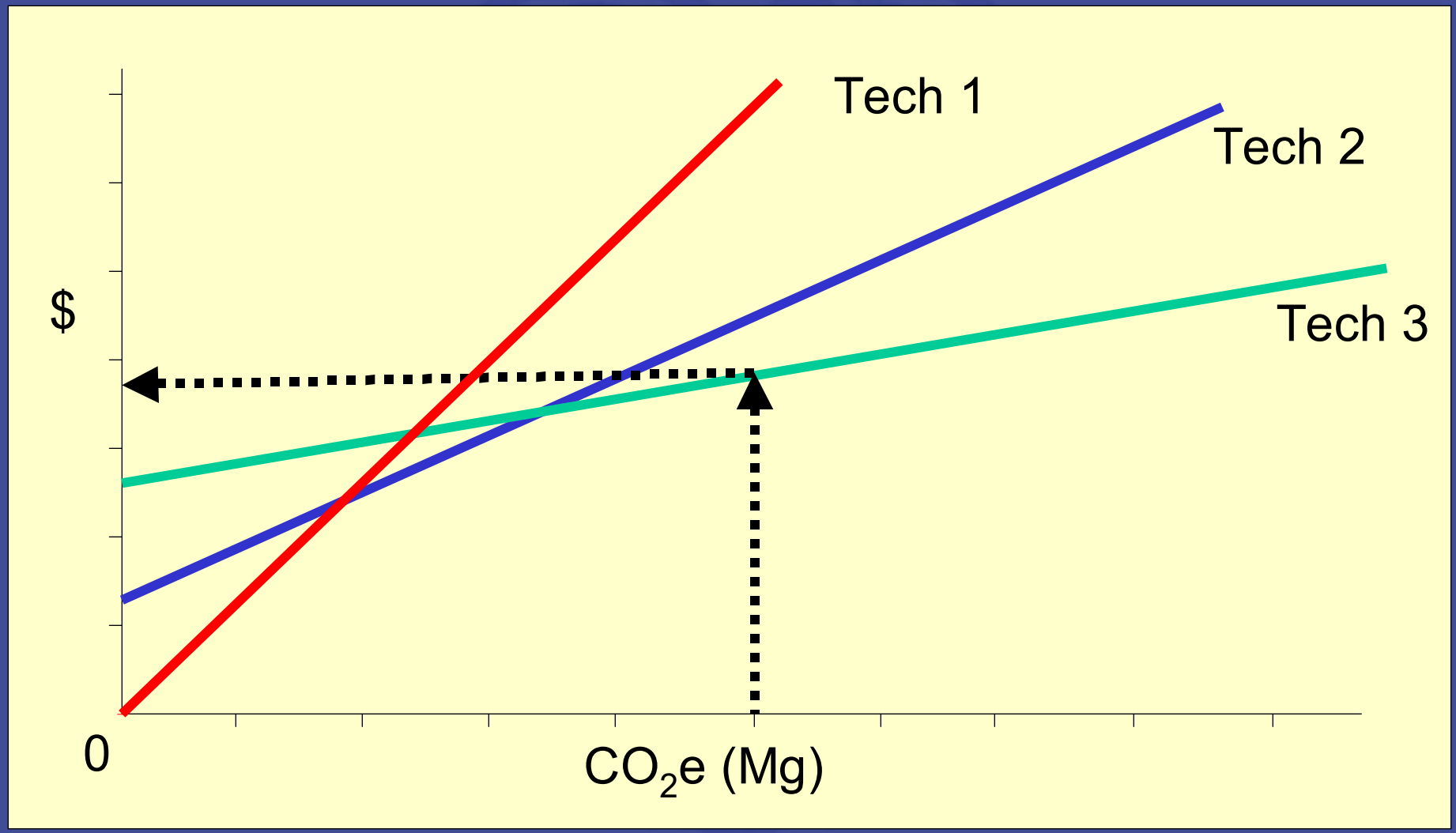
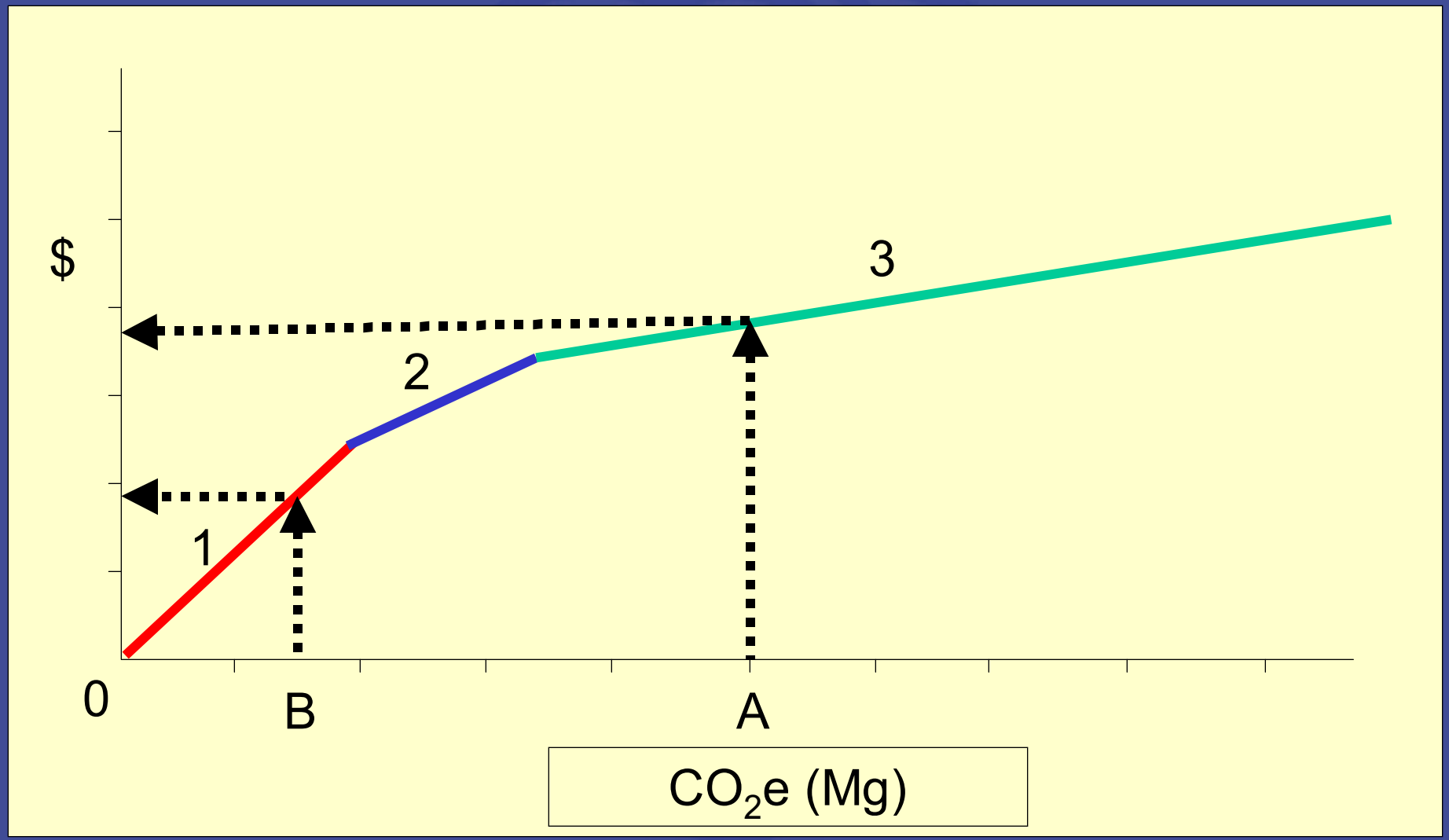
Individual Abatement Curves



Combined Abatement Curves



Analysis and Decision

- Excess Emissions = total inventory - permits
- If excess emissions = A, then compare Technology #3 to the market value of permits
- If excess emissions = B, then compare Technology #1 to the market value of permits

2. Reporting

Purpose: To quantify actual reductions to government agencies, and the public

Process:

a) **Capped Sector:** Company reports its total emissions to the government

b) **Non-Capped Sector:** Company establishes baseline, describes the action taken, registers the credits, and posts them on a registry

3. Transaction

- World GHG market is expected to be worth $10 billion - $3 trillion (USD) by 2010
- Approximately 160 million tonnes transacted to date
- **Presently**: all contracts are negotiated
  Future: expected to be standard bid/offer
- **Brokers**: build the relationships and manage the transactions (CO2e.com, NatSource etc)
- **Electronic Exchanges**: likely increase in popularity as volumes increase (KEFI Exchange, Emissions Exchange, etc.)

The trading tools are the same as for any commodity. There are four basic types:

1. **Spot Transaction**: Delivery and payment occur during a standard timeframe shortly after the agreement has been executed

2. **Forward Settlement**: Delivery of reductions and payment are deferred to a future specified date

3. Options: Contracts that give the options-buyer/seller the right (but not the obligation) to enter into a specific transaction on or before a specific date. The price of the ER is locked in up front, along with the option's exercise date. The buyer pays a premium for this flexibility

4. Project Investment: Buyers may also choose to invest in projects that will produce an acceptable rate of return along with emission reductions

Contractual Considerations

Ownership: Sellers must provide proof of title/ownership of the GHG emissions reductions

Additionality: Seller must demonstrate that emission reductions would not have otherwise occurred through business-as-usual

Liability: Sellers are often asked to guarantee delivery of the ER's (e.g. financial payment guarantee, replacement of contracted reductions etc.). Typically covered in the warranties or liquidated damages sections of the contract

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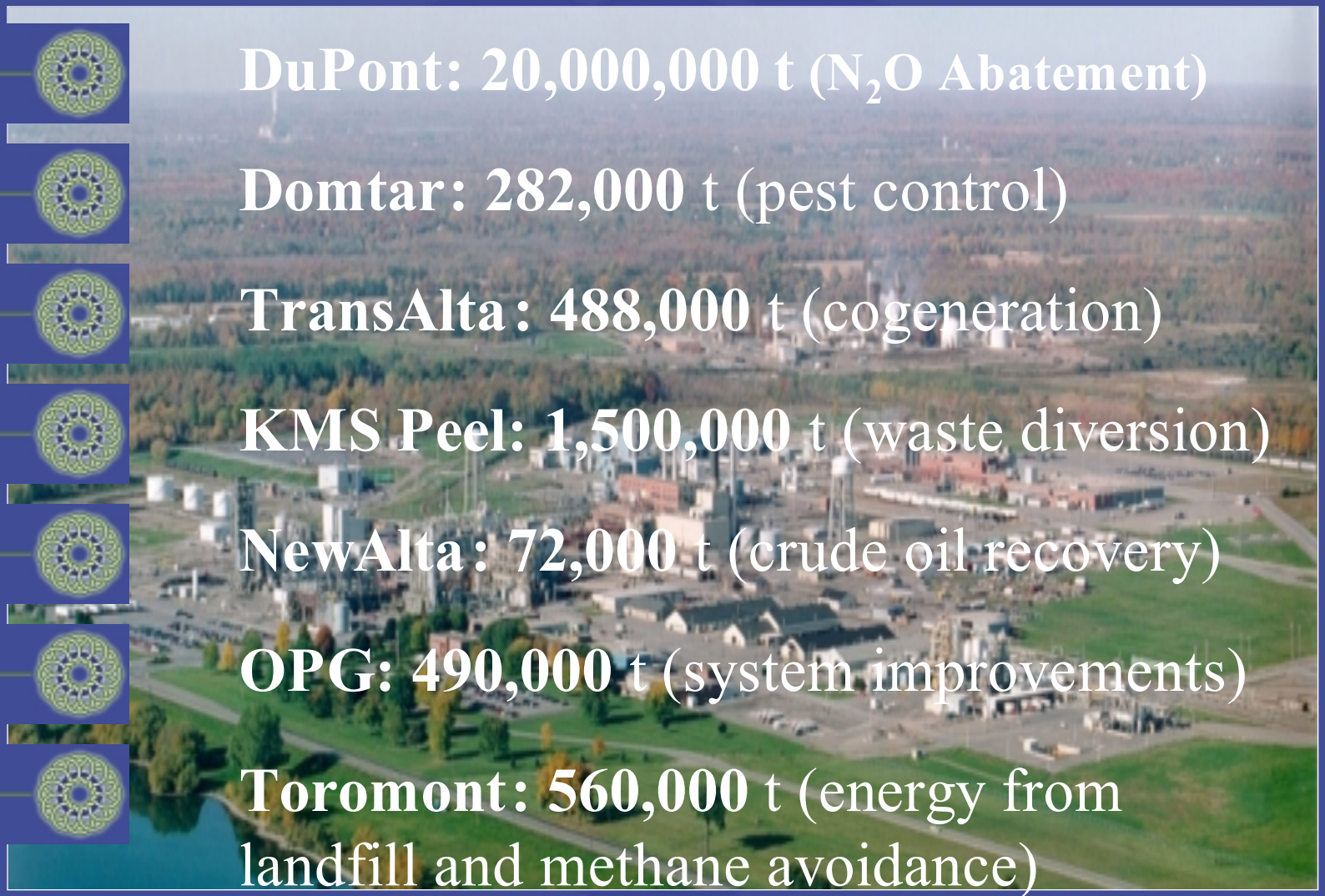
Examples



DuPont: 20,000,000 t (N_2O Abatement)

Domtar: 282,000 t (pest control)

TransAlta: 488,000 t (cogeneration)

KMS Peel: 1,500,000 t (waste diversion)

NewAlta: 72,000 t (crude oil recovery)

OPG: 490,000 t (system improvements)

Toromont: 560,000 t (energy from landfill and methane avoidance)

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