

Government of Canada / Gouvernement du Canada

Making Money from Greenhouse Gas Reductions

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TECHNOLOGY EARLY ACTION MEASURES
MESURES D'ACTION PRÉCOCE EN MATIÈRE DE TECHNOLOGIE

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Outline

- Who is TEAM and why are we here?
- What is a greenhouse gas project?
- Why would you want to do one?
- How do you do one?
- Who can help you?
- Other considerations

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TEAM's Mission

Technology late stage development and first demonstration to reduce GHG emissions, nationally and internationally, while supporting sustainable development.

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TEAM Background

- Total projects: 131 (1998-2007)
- Total value: over \$1 billion
- Partners: over 335 companies, 46 federal agencies, 49 other government agencies, 15 countries
- Developed approach to assess the potential impacts of technologies = due diligence

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What is a GHG project?

An activity designed to reduce GHG emissions

- Reduce emissions of CO₂, methane, nitrous oxide, other
- Measured by tonnes of CO_{2e} reduced per year

Project Examples

- Replace new manufactured component with waste product (e.g. fly ash)
- Less intensive fuel (e.g. biofuels)
- Energy efficiency
- Renewable energy (e.g. wind, solar)
- Sequestration (e.g. agricultural practices)
- Reduction in use of certain chemicals (e.g. refrigerants)
- Gas capture (e.g. from landfills)

Cannot be business as usual activity
Cannot create an equivalent source elsewhere

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TEAM SMART background

"If you can't measure it, you can't sell it"

System of Measurement And Reporting for Technologies (SMART)

- Provides a rigorous, transparent, cost effective means of evaluating & measuring technical performance and GHG emission reductions for demonstration projects
- \$30K vs. \$200K+ (comparable cost of other approaches)

TEAM co-chair on development of the new ISO 14064 standards for GHG assessment (2001 – 2006)

SMART stages:

- SMART-Lite
- SMART Project Master Plan (ISO 14064 part 2)
- Final SMART report
- SMART Verification (ISO 14064 part 3)

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Why do a GHG project?

- **Economic value:**
 - Selling results as credits or offsets
 - Reducing costs
- **Social value (reputation):**
 - Recognition in voluntary programs
 - Marketing
- **Environmental value:**
 - Reduction of emissions

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What's the market value?

- **GHG trading vs. retail market**
 - Also called Carbon Trading, CO₂ or CO₂e Trading
- **Regulated trading**
 - EU-ETS (2008) \$20/\$30 / tonne
- **Retail market**
 - \$5 - \$100 / tonne
 - Average: \$20 / 30
 - Price variation based on
 - type of offset
 - reputation of seller
 - verification
- **Estimates of market size (2006)***
 - US \$30 billion (3 X previous year)
 - \$25 billion through EU-ETS
 - \$5 billion project based in developing and EIT countries (non-annex 1)
 - Voluntary markets at US\$100 million

* State of the Carbon Market 2007, World Bank Carbon Finance Unit

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What's the market value?

Market system – responds to perceived scarcity vs. need
Chicago Climate Exchange European Climate Exchange



www.chicagoclimatex.com

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How many tonnes per project?

- **Depends on the project and baseline**
 - Fly ash in concrete*:
 - 0.3 tonne CO₂e/tonne cement
 - 120 079 tonne CO₂e/full construction
 - At \$20/tonne: \$2,401,508 (\$6/tonne cement)
 - Bio-fuels use and energy efficiency (mixed-use application)
 - 5,527 tonnes CO₂e / year
 - At \$20/tonne: \$110,540 / year

*SMART PMP estimate for EcoSMART in Dubai

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Validation vs. Verification

Validation:

- process of assessment of the **reasonableness** of the project proponent's assertion regarding **future** GHG performance, undertaken **before** the GHG project
 - 'is the project proponent's plan reasonable?'

Verification :

- process of assessment **confirming** the project proponent's assertion regarding **past** GHG performance, undertaken **after** the GHG project
 - verification aims to 'confirm the truth of the project proponent's assertion'

Defined in ISO 14064 Part 3

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Validation vs. Verification

Differences	Validation	Verification
Timing	Before project start	After reductions occur
Objective	Future oriented, statements of intent and forecasts	Past oriented, statements of performance (assertions)
Subject Matter	Baselines, eligibility, capacity to comply	Emissions data, implemented in accordance with registered project document
Focus	Justification, assumptions, methodologies	Data integrity, consistency with registered project document
Frequency	Once	Periodic
Competency	Industry and technical knowledge	Assurance and audit skills
Level of Assurance	Assurance cannot be provided over future performance	Limited vs. High

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How do you make money from a GHG project?

- Find a buyer
 - Need to know if activity eligible / acceptable
- Get validated
 - Assurance that project is acceptable
- Resolve ownership of results
 - Within project partners and externally
- Do project
 - Monitor and document as per validated plan
- Get third party verified
 - Need to know number of tonnes reduced

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Who can help?

- Experts in validation and verification
 - Auditing, greenhouse gas, technical skills
- Currently certified by buyer
- New ISO 14065 (accreditation)
- ISO 14066 (certification) being developed

Assurance	
1 st party	<ul style="list-style-type: none"> • no independence/ impartiality • limited credibility
2 nd party	<ul style="list-style-type: none"> • some independence, • vested interest in successful outcome without complication • relationship of mutual interest
3 rd party	<ul style="list-style-type: none"> • must be paid, generally by seller • major interest in protecting reputation of independence • least likely to provide false, inconsistent or misleading information when a rigorous audit process is in place • the primary reason sought is to increase credibility

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TEAM validators and verifiers



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Challenges

- Market volatility
- Link to regulation and political will
- Difficulty proving additionality
- Ownership must be resolved
- A shortage of qualified verification bodies

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Conclusion

- Rapidly maturing market
- To sell and exploit this market you must:
 - Prove additionality
 - Ensure GHG reductions are verifiable
 - Resolve ownership of GHG reductions
 - Meet all detailed market requirements into which you are selling

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Thank you...

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ISO GHG Standards

<u>Standard</u>	<u>Scope</u>	<u>Title</u>
14064-1	Organizations	Greenhouse gases – Part 1: Specification with guidance at the organization level for quantification and reporting of greenhouse gas emissions and removals.
14064-2	Projects	Greenhouse gases – Part 2: Specification with guidance at the project level for quantification, monitoring and reporting of greenhouse gas emission reductions and removal enhancements.
14064-3	Validation and Verification	Greenhouse gases – Part 3: Specification with guidance for the <i>validation and verification</i> of greenhouse gas assertions.
14065	Accreditation	Greenhouse gases: Specification for greenhouse gas validation and verification bodies for use in <i>accreditation</i> and other forms of recognition.
14066	Auditor Competence	In progress

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