



# Lessons learned from GHG measurement and reporting of technologies with ISO 14064 part 2

UNIVERSITY OF  
**WATERLOO**



Steven B. Young

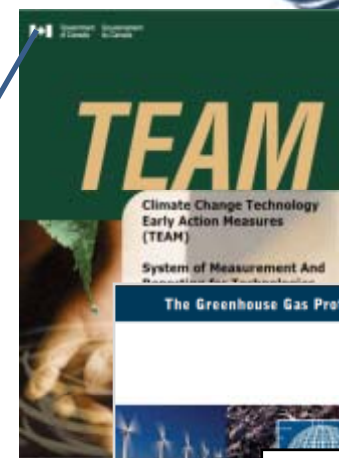
# Summary

- Method: ISO 14064 – part 2 for GHG projects
  - “SMART” method part of Canada early measures
  - Originated from LCA methods, CDM, and other efforts
  - Serves as an excellent standard for offsets programs
  - Requires additional guidance to incorporate into a program
- Our examination of >50 technology projects
  - Power of the TRACCC principles
  - A logic to the standard’s process on baselines vs. projects
  - A spectrum of project types, with challenges
  - Solutions to problems like *de minimis*

# ISO 14064 – part 2 for GHG projects

Originated from LCA methods, CDM, Canadian early measures and other efforts

- *TEAM*  
\$1 billion in funds to over 300 companies in 131 projects
- *SMART method*  
“System for measurement and reporting of technologies”



SMART  
Techn



ISO 14040:1997  
Life Cycle Assessment



GHG Pro  
Project



PAS 206  
Product  
Foot



ISO 14064-2  
Project quantifi

GHG Protocol 2011  
Product guide



# ISO 14064-2:2006 project-level GHG standard

- Requires additional guidance to incorporate into a program
  - Timing
  - System rules
  - Eligibility
  - Relevance criteria
  - Etc.

- Serves as an excellent standard for offsets programs



*ISO 14064-2:2006  
Project quantification*

- “shalls”
- “shoulds”

Testing on hundreds of projects for  
GHG technologies  
( $>50$ )



Carbon credits?



# Power of the TRACCC principles

*“true, faithful and fair account” (WRI/WBCSD 2004)*

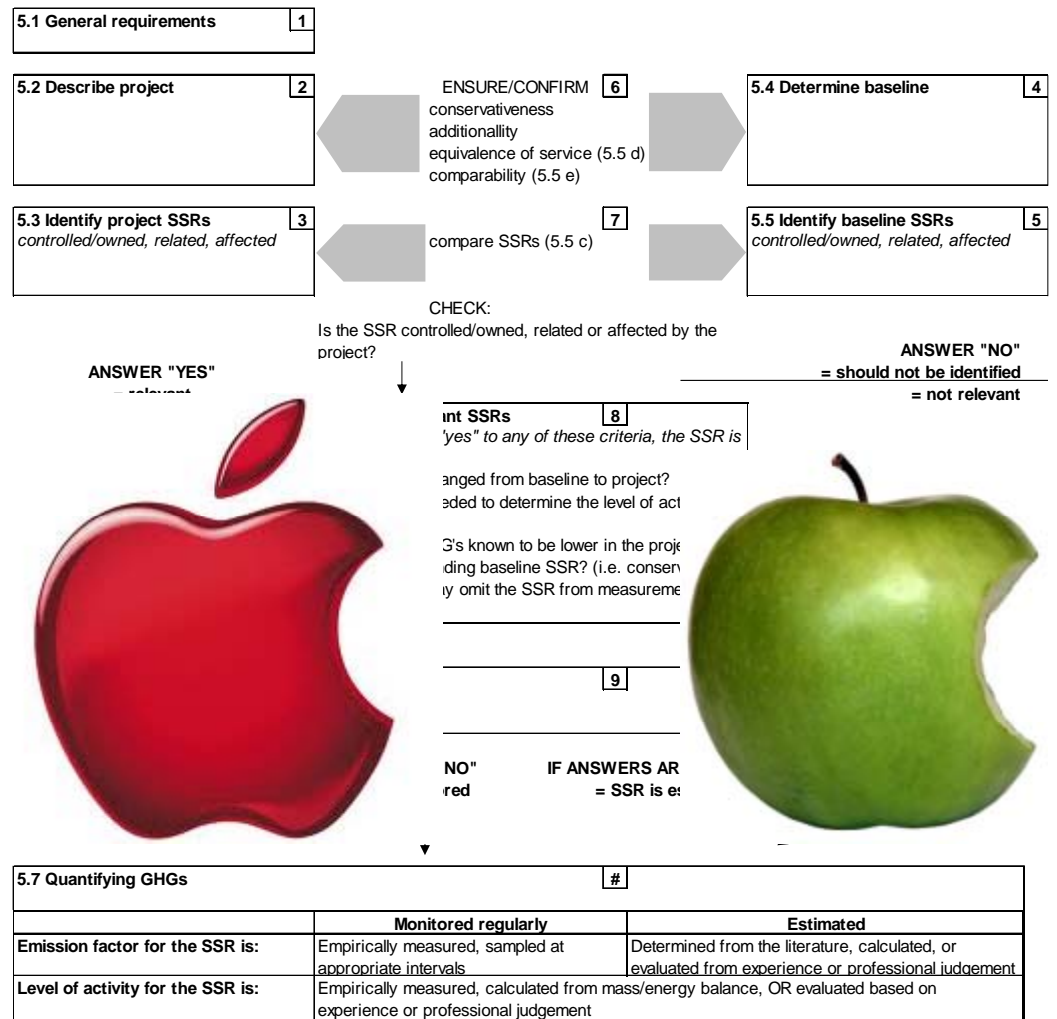
- Transparency
  - clarity on what was done
  - assumptions, data choices, potential limitations
- Relevance
  - inclusion of information that is meaningful and appropriate
- Accuracy
  - actual emissions are reported
  - reduces uncertainty and bias in results
- Completeness
  - all necessary GHG’s and sources included
- Consistency
  - meaningful and even approaches in measurement, reporting and verification
- Conservativeness
  - overstatement is avoided in claims of GHG emissions reductions
  - **Additionality?**

# ISO 14064-2

## a logical process for baselines

### vs. projects

- Describe project and its activities
- Determine baseline and activities
- Check TRACCC principles
- Compare functional equivalence
  - “apples to apples”
- Select **relevant** SSR's
  - Process by process
  - Criteria for relevance
- Monitor or estimate GHGs



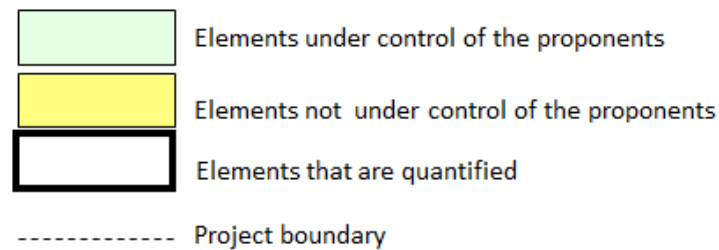
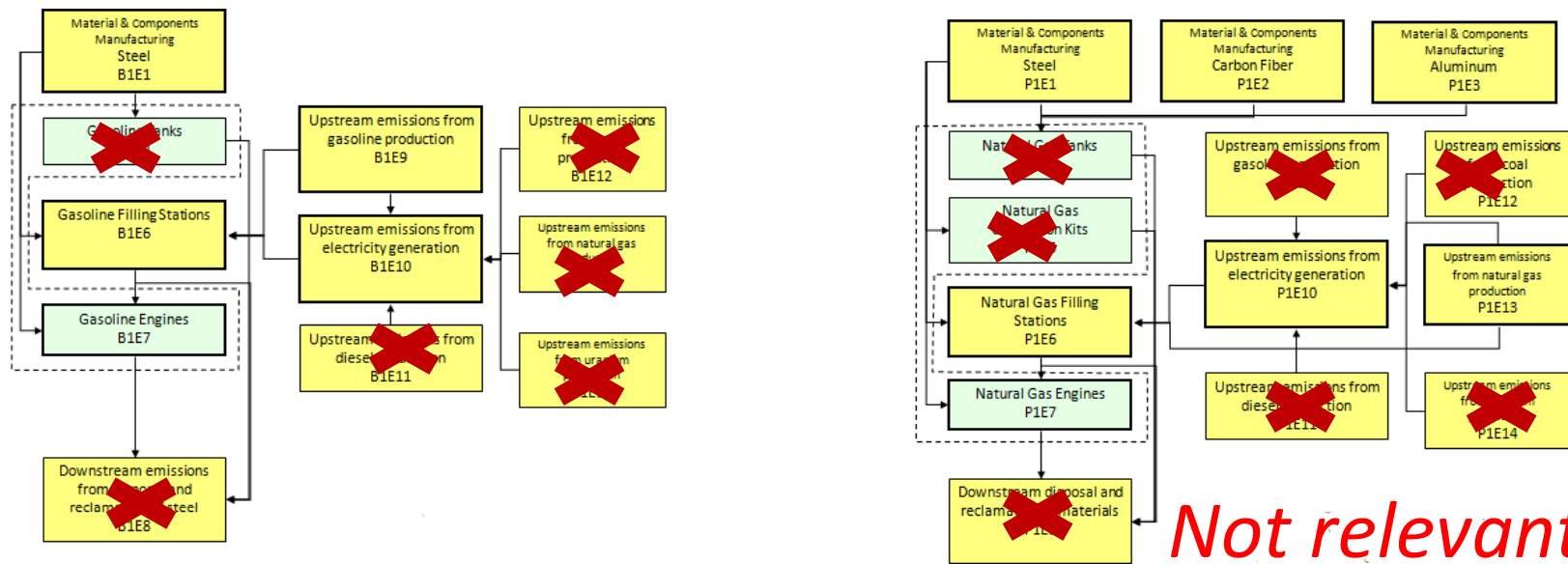
#### Relevant principles for quantification

- Conservativeness
- Complete
- Accurate

# GHG technology assessment

## Baseline Project

*Exclude processes "not relevant" to the DELTA.  
consistent with ISO 14064-Part 2*



*Not relevant  
if:  
no change*



# Learnings: a spectrum of project types

## General challenges

- Activity data availability
- Emissions factors, relevance
- Accuracy & uncertainty
- Documentation & transparency



Image: SB Young

## Protocol and program challenges

### *3 types of technology projects*

- **Project and Baseline on same site**
  - One owner controls activities, data
  - Easiest if incremental change from baseline
  - E.g., landfill gas, manure, fossil fuel switch
- **Baseline is remote to Project**
  - Substitutive technologies
  - Baseline and project are asymmetrical
    - activity and ownership
  - E.g., renewable energy on grid, energy efficiency, biofuels, materials recycling
- **Reservoir and sinks projects**
  - Require modeling of baseline emissions
  - Often complex time-dependent biological systems
  - E.g., forestry, agriculture no-till soil carbon

# *de minimis*

- Key challenge
  - ISO 14064-2 provides a solution ...
- Issue of cost and resources for measurement
- *de minimis*
  - “Negligible”
    - Emissions that can be omitted without compromising overall accuracy of the quantification
    - e.g., 1%
  - What about aggregate?
- Inherent contradiction
  - To determine negligibility, quantification is necessary
  - Therefore why not include?!
- Solution lies in conservativeness principle:
  - Underestimate the real GHG reduction benefit
  - To increase requires greater effort/cost – and increases GHG reduction/benefit of credits
    - Do it if it's worth it

# Summary

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  - Originated from LCA methods, CDM, and other efforts
  - Canadian early measures “SMART method
  - Serves as an excellent standard for offsets projects
  - Requires additional guidance to incorporate into a program
- Early testing on hundreds of technology projects
- Results >50 analyses
  - Power of the TRACCC principles
  - A logic to the standard’s process on baselines vs. projects
  - A spectrum of project types, with challenges
  - Solutions to problems like *de minimis*

# FYI – Scholarly and professional communities for GHG people



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- RGGI
- UNFCCC
- Kyoto Protocol Compliance
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- World Bank

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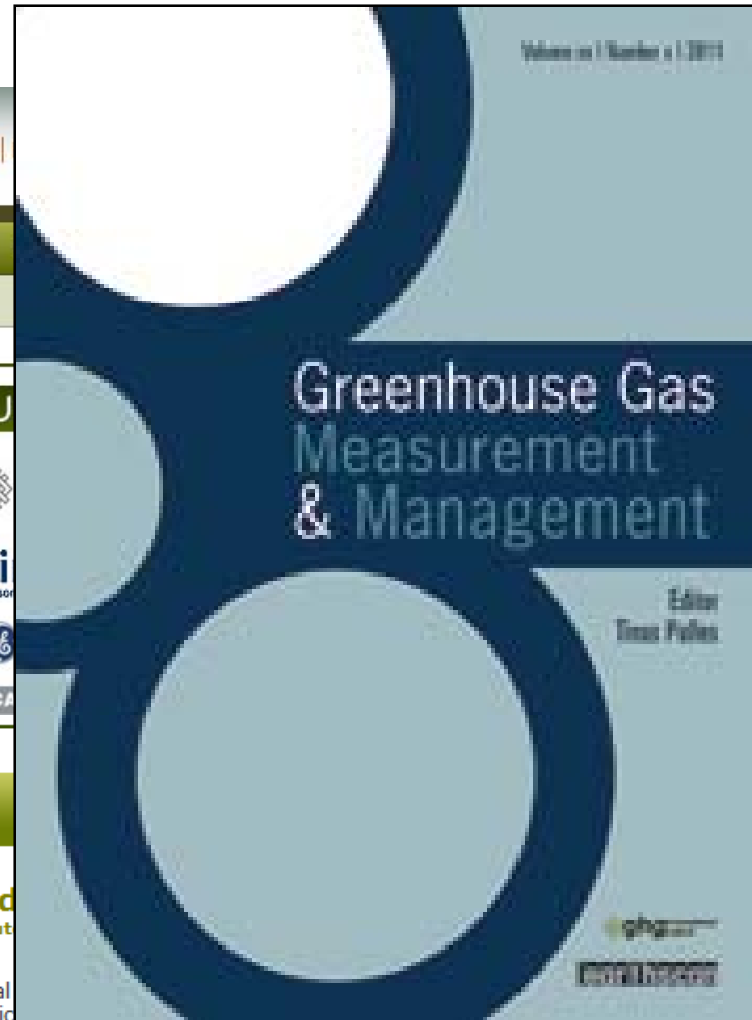
## Inside the Institute



Mar 24

**Defining Ad**  
Inside the Institute

The professional climate science terminology, esoteric (TLAs), carbon works are known to dialogue in an inaccessible jargon so rich it may, to the uninitiated, appear to border on another language. Yes, by this hollow measure, climate policy would seem to have the trappings of more established professional fields. Yet, a cursory look at the definitions associated with carbon's work bank rather nakedly



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Editor  
Thomas Patten

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# Thank you

THURSDAY 1:30 pm

Session 12: Greenhouse Gas Reductions and  
Mitigations

*Abstract #32: Greenhouse Gas Mitigation from  
Waste Materials Recycling*

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