



Corporate GHG Verification Guideline

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At:

Climate Leaders Partners Workshop
Washington, DC
January, 2004



Overall Project Objectives

- Develop program-neutral verification guidelines, for entity-wide GHG inventories and reduction projects
- Identify and describe discrete levels of verification rigor appropriate for specific end uses
- Simplify process of developing and verifying inventories and baselines
- Make significant technical contribution to corporate users, service providers, policy makers, and stakeholders



Verification Levels of Rigor

Feature	Low Tier I	Medium Tier II	High Tier III
Verification End Use:	Internal planning; Public relations	Stakeholder reporting; External communication	External emissions trading
Typical Auditing Body:	Self	Self or 3 rd Party	Independent 3 rd Party
Audit Location(s):	Desktop, phone interviews	Desktop, phone interviews, + some site visit(s)	Central office (data system) + Field facility(s)



Targeted Elements for Verification

- Organizational boundaries
- Operational boundaries
- Quantification methods
- Activity data
- Normalization data (performance indicators)
- Emission factors
- Data management system
- QA/QC data/plan
- Baseline issues for entity wide inventory
- Data management



What's new since the June Discussion Paper?

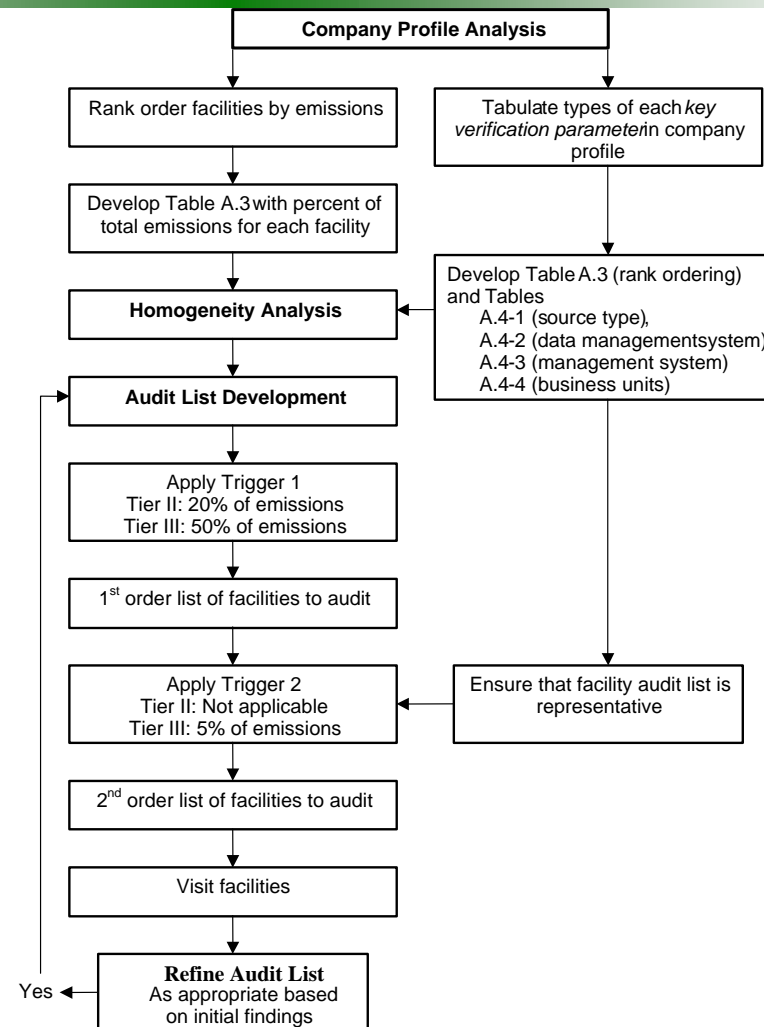
- The document is almost complete and ready for public review and comment
- Guidance added for companies with many identical facilities
- A decision tree has been introduced for selecting facilities to be audited
- Selection criteria proposed based on numeric thresholds or “triggers”



Decision Tree for Selection of Facilities to be Audited

See Figure A.2 (page 13) in the draft document for more details on:

- Company profile analysis
- Homogeneity Analysis
- Audit List development





Company Profile Analysis

- Verifier prioritizes verification activities based on unique characteristics of each company
- Key verification parameters:
 - Emission sources
 - Data management system(s)
 - Management system(s)
 - Business units or business activities



Audit List Development

- Rank order facilities by emissions
- “Homogeneous” facilities may be combined (if you’ve seen one...)

Facility	Percent of total company-wide emissions	Percent cumulative
Facility 1	30	30
Facility Type 2	12	42
Facility 3	4	46
Facility 4	4	50
Facility 5	3	53
Facility 6	2	55



Apply numeric thresholds to select facilities to audit

- Trigger 1: audit to ensure coverage of fixed percentage of cumulative emissions
- Trigger 2: audit to ensure coverage of each type of key verification parameter

Facility	Percent of total company-wide emissions	Percent cumulative
Facility 1	30	30
Facility 2	12	42
Facility 3	4	46
Facility 4	4	50
Facility 5	3	53
Facility 6	2	55





Quantification Methods: Scope and Activities

Table B.3-1		
Tier I	Tier II	Tier III
Review conducted at the “rolled up” entity level or BU level	Audit trail examined below BU level including facility specific estimates	Tier II plus field audit of key facilities
<ul style="list-style-type: none">• Identify fundamental errors or omissions	<ul style="list-style-type: none">• evaluate trends over time	<ul style="list-style-type: none">• re-compute estimates to uncover errors in algorithms
<ul style="list-style-type: none">• employ routine error checking procedures	<ul style="list-style-type: none">• review source data at select facilities	<ul style="list-style-type: none">• review alternative quantification methods and compare results



Quantification Method: Documentation to be reviewed

Table B.3-2		
Tier I	Tier II	Tier III
minimal documentation required for review	“intermediate” level of written documents	requires review of detailed emission inventory protocol plus
<ul style="list-style-type: none">• equations embedded in spreadsheets	<ul style="list-style-type: none">• focus on assumptions made in estimating entity emissions	<ul style="list-style-type: none">• supporting evidence, reference citations, justifications of key assumptions
<ul style="list-style-type: none">• may include formal documentation	<ul style="list-style-type: none">• track methods used over time; assess recalculations of previous years	<ul style="list-style-type: none">• calibration records, SOPs, fuel invoices, maintenance logs, analytical results



Quantification Method: Error and uncertainty issues

Table B.3-3		
Tier I	Tier II	Tier III
qualitative assessment of uncertainty	assessment of accuracy and uncertainty dependent on end use	statistical evaluation of inventory accuracy
qualitative assessment of accuracy	Reliance on expert judgment and ordinal ranking of uncertainties	<ul style="list-style-type: none">•investigate internal audit results•assess physical measurements (fuel composition, flow rates)•Identify methods employed to reduce uncertainty



CGVG Next Steps

- Circulate draft document for expert peer review and public comment
- Assist companies in field testing procedures
- Expand coverage to projects