

# Verification of Carbon Footprint for Organization

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## Agenda

- What is LRQA?
- What is a Carbon Footprint, why do you need one, what are the benefits?
- Scoping, boundaries, quantification, baseline, external statements
- 3<sup>rd</sup> party verification
- Common Pitfalls



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## Lloyd's Register Quality Assurance (LRQA)

- Established 1985
- We provide independent conformity assessment / assurance to various international standards
- 41 offices, 1,500 employees
- Accredited by more than 45 accreditation bodies
- 45,000 clients
- Issued approvals to 50% of the Top 200 Financial Times Global Index of companies



## Climate Change & Sustainability Services in Asia

- Carbon footprinting
  - ISO 14064, PAS 2050
  - Certified Emissions Measurement And Reduction Scheme (CEMARS)
- CDM and JI
- Corporate social responsibility (CSR)
- World Commission on Dams (WCD) Assessment
- EU ETS Aviation
- National schemes in Japan, Korea, Taiwan
- Training services – government and industry



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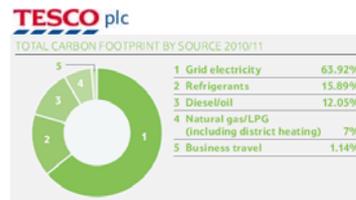
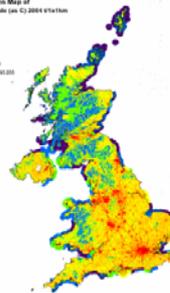
- 278 offices in 228 countries
- 7,500 employees
- 250<sup>th</sup> anniversary in 2010
- Four business divisions:
  - Marine
  - Transportation
  - Energy
  - **Management Systems (LRQA)**
- Annual turnover \$1bn
- Independent - no shareholders / non-profit distributing



## What is a Carbon Footprint?

- Carbon footprint is the total GHG emissions of an organisation / entity / individual
- Usually expressed in terms of amount of CO<sub>2</sub> equivalent (CO<sub>2</sub>e)

UK Emissions Map of Carbon Dioxide (in G) based on 2008



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## Why calculate your carbon footprint?

- **Growing consumer and market pressure**
  - Carbon risk, investors want greater and better disclosure from large companies of their climate-related risks and opportunities (e.g. Carbon Disclosure Project)
  - Reputation
    - Dow Jones Sustainability Index, BITC CR Index, FTSE4Good Index all require carbon disclosure
    - Consumers increasingly shun products and brands that are linked to 'the problem'
    - Every marketing department wants to 'green' their company
  - Supply chain pressure, e.g. Tesco and Wal-Mart suppliers create pressure to act



## Why calculate your carbon footprint? [2]

- **Compliance**
  - More Asian governments are requiring energy efficiency improvements and carbon reductions
  - International policy is also diversifying into multiple frameworks reaching agreement on how to ensure appropriate monitoring, reporting and verification (MRV) is becoming more difficult → the use of international standards and best practise 'future proofs' your systems
- **Cost reduction, 'you can't manage what you don't measure'**
  - Create a high quality carbon baseline from which to set targets and measure progress
  - Help identify highest impact activities to prioritise abatement measures
  - Potential early action for reductions of direct emissions (Scope 1) and energy indirect emissions (Scope 2)



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## What types of companies are interested?

- Leading companies in their sector with high-value brands and reputations
- Suppliers to these leading companies
- Companies that respond to stakeholder initiatives (e.g. Carbon Disclosure Project (CDP))
- Companies listed on sustainability indices
- Companies located in countries with regulations (or proposed regulations) (e.g. Japan, Korea, Taiwan, Australia)
- Companies trading with countries with regulations (e.g. Asian airlines flying to the EU)



## Putting it together

	Financial	Non-Financial
Quantified	<ul style="list-style-type: none"> <li>Energy Efficiency</li> <li>Reduced Fines/Penalties</li> <li>CDM Credits</li> <li>Lower Transport Costs</li> <li>Value Based Product Sales</li> <li>Consumer Brand Value</li> </ul>	<ul style="list-style-type: none"> <li>Political Risk as regulations change</li> <li>Product Positioning</li> <li>Customer Satisfaction</li> <li>Compliance</li> </ul>
Non-Quantified	<ul style="list-style-type: none"> <li>Lower GHG emissions</li> <li>Employee Retention</li> <li>Shorter Planning Approval</li> <li>- process "CC Friendly"</li> <li>Risk Reduction</li> <li>Lower Product Energy Intensity</li> </ul>	<ul style="list-style-type: none"> <li>Employee Morale/Involvement</li> <li>License to Operate</li> <li>Supplier Qualification</li> <li>CERES, CDP, Dow Jones</li> <li>Sustainability Index, FTSE4Good</li> <li>Reputation</li> </ul>



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## How to obtain business benefit?

### Claims:

- We have reduced GHG emissions from 350,000 tCO<sub>2</sub>e in 2005 to 275,000 tCO<sub>2</sub>e in 2010
- We are a carbon neutral company
- We are a carbon positive company

### Credibility?

- On what basis are these claims made?
- Where any standards used?
- Have these claims been verified?



## Verification provides credibility

- LRQA carbon verification against ISO 14064 and provides assurance to both internal and external stakeholders
- Our verification process comprises 3 stages:
  - Stage 1 – strategic risk analysis to generate a detailed verification and data sampling plan
  - Stage 2 – site visit, data verification, review of evidence, check conformity with the principles and requirements of ISO 14064
  - Stage 3 – preparation of our Assurance Statement



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## Benefits of verification

- Critical for companies to have an accurate GHG inventory
- Ensures best international MRV practices and standards – “future proof” your systems
- Emission reduction programs require management not just installing new technologies
- Centralised data management systems enable good data flow and analysis
- Verification has shown to have important benefits
  - Improve the quality and reliability of data
  - Effectively link energy and material costs with reduced emissions
- Verification is highest in the first year but this cost often decreases in following years.
  - Biggest determinant of verification costs is usually how well organised a company is



## ...also critical for carbon markets



- Fundamental to achieving credible emissions reductions
- Key to ensuring that a “ton of carbon” has the same meaning throughout the world, and that the units are fully fungible
- Enable greater cooperation, accountability and trust to develop within carbon markets
- Carbon buyers need to know the emission reduction credits they are buying are real
- For an expanded global carbon market verification requirements will only grow
- Requires companies to provide reliable systems for monitoring, reporting and verification
- Value for credits increases if there is a high level of transparency → data quality is the key



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## Some of our clients

LRQA holds UKAS (global) accreditation for ISO 14065, enabling accredited ISO14064-1 verification for our clients

- Shell
- Repsol
- Seoul Metropolitan Government
- Carnival Corporation
- Tai Power
- SK Energy
- Welspun



## CSR verification experience

- British Energy
- BT - British Telecom
- BP Shipping
- Cathay Pacific
- Celbi
- Chevron
- Environment Agency, UK
- ExxonMobil
- Honda Belgium
- Innogy plc (formally National Power)
- Japanese Tobacco Industry
- Shell UK Stanlow
- SK Corporation
- Umicore
- Marubeni Corporation

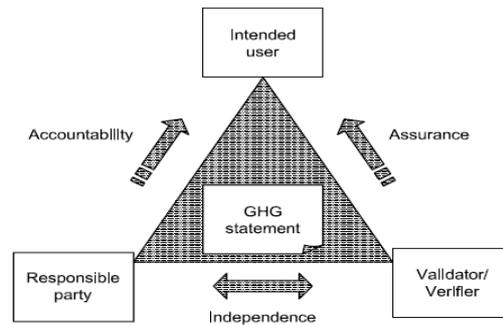


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## Key stakeholders involved in credible claims

The responsible party is held accountable by the intended user for the accuracy and completeness of the information



The validator or verifier provides comfort to the intended user that the report is accurate and complete

The validator or verifier must be independent from the responsible party to give an unbiased opinion to the intended user



## Scoping your GHG Inventory

Decisions to be made to scope your GHG inventory

- Standard to use
- Parts of the organisation to be included (organisational boundary)
- Parts of your operation and the nature of emissions and removals (if any) to be included (operational boundary)
- Baseline setting
- How to communicate your inventory
- Level of assurance to be applied by verification



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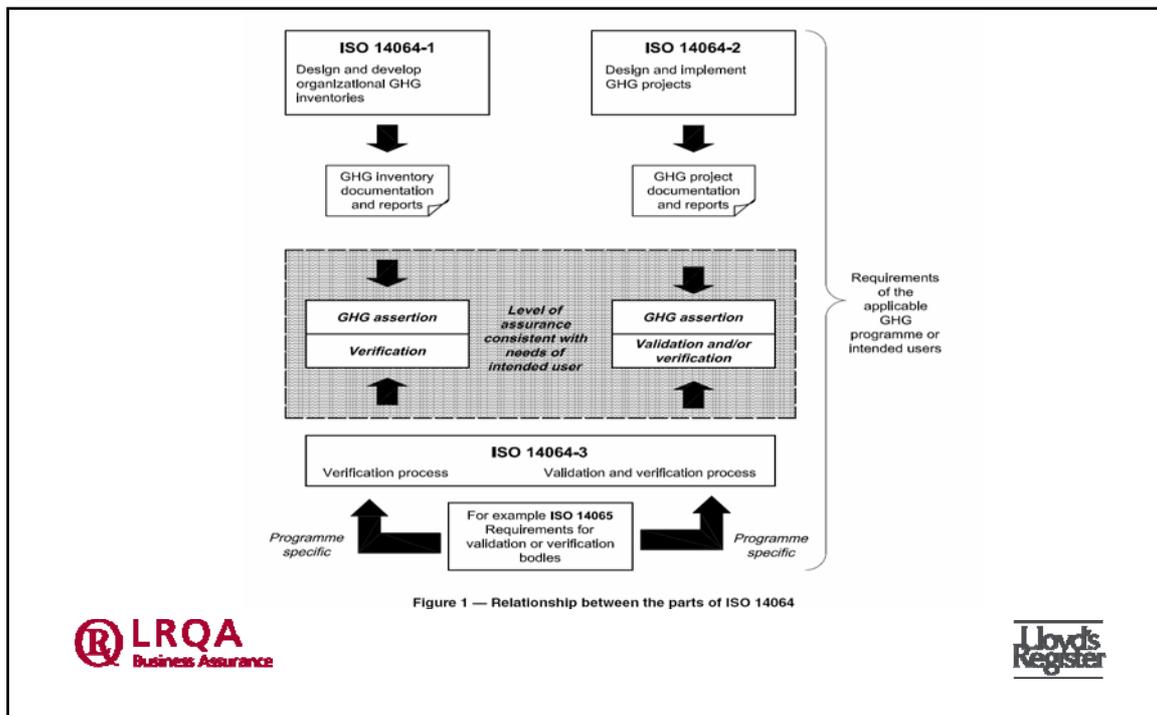
## Standards to Use

To define your inventory and be verified against:

- ISO 14064:1; and/or
- The GHG Protocol – Corporate Accounting and Reporting Standard

To define the verification process:

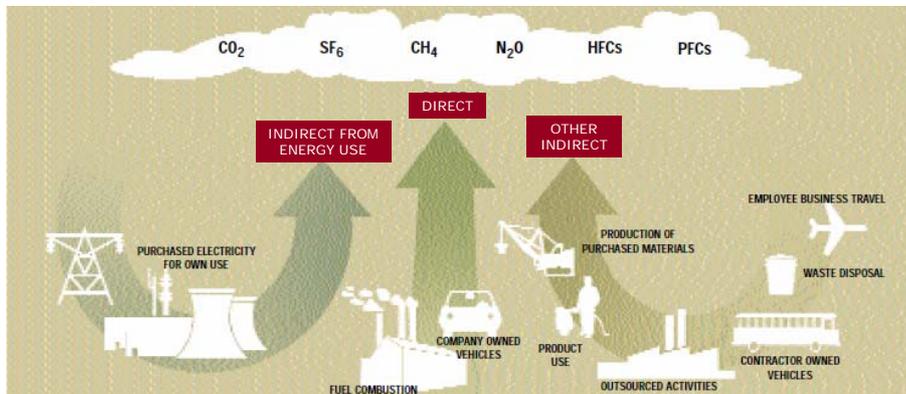
- ISO 14064:3; and
- ISO 14065 (accreditation criteria)



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## Defining the Organisational / Operational Boundary



## Organisational GHG Inventory Quantification



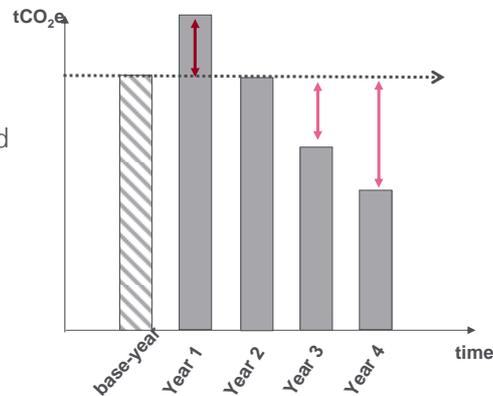
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## Deciding the baseline period to use

### Baseline

- Usually a 12 month period, e.g. calendar, business, fiscal year
- Must be defined, quantified and documented
- Must use a consistent approach to quantification in later years (or the baseline must be re-calculated)
- Must be complete with regard to all sources
- Must be verifiable



## Deciding how to communicate

### GHG Assertion

- A factual, objective statement made by the organisation
- Can be stand alone or presented within a wider Environmental or CSR Report; and
- Can include data.

### GHG Report

- Has more demanding requirements with regard to the reporting systems, quality management, training, reporting frequency etc.;
- Stand-alone document intended to communicate an organisation's GHG emissions information to its intended users; and
- Must include data;



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## Verification principles

Verification is the process of confirming whether a statement about actual circumstances or past performance is true and correct. Only statements about actual performance, events or circumstances can be verified. Verification focuses on data, information, facts and records.

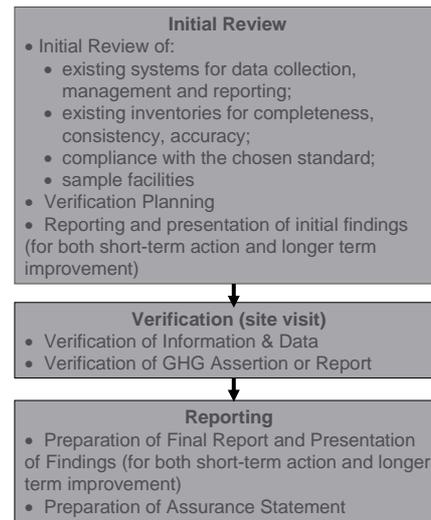
- Independence
  - Independent from the GHG program authority and the project proponent
  - Free from bias and conflict-of-interest
- Ethical conduct
  - Trust, integrity, confidentiality and discretion
- Due professional care
  - Skills and competencies
- Fair presentation
  - Truthful, accurate verification findings
  - Report significant obstacles encountered during the verification process and unresolved opinions



## Our approach

To ensure:

- A detailed review of your existing systems
- We can assist you to implement robust mechanisms which build upon existing mechanisms such as financial systems and ISO 14001



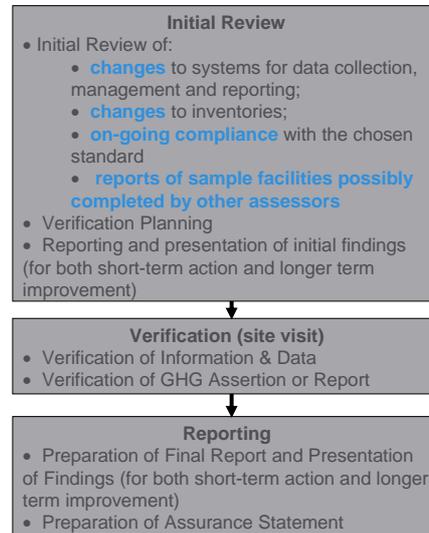
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## Our approach for future years

To ensure:

- Best use of external audits;
- Limited disruption to operations;
- Detailed confirmation of practices.



## Assurance

- A positive declaration intended to give confidence.
- Assurance is a formal guarantee: a positive declaration that a thing is true (Oxford English Dictionary).
- Assurance is an evaluation method that uses a specified set of principles and standards to assess the quality of organisation's subject matter and the underlying systems, processes and competencies that underpin its performance.
- Assurance is fulfilled during an Assurance Engagement, such as a ISO14064-1
- Assurance includes the communication of the results to give the subject matter credibility for its users. (ISO14064 Assurance Statement)
- LRQA is an Assurance Provider (a polite reminder...)



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## Deciding the Level of Assurance to apply

- There is no absolute level of assurance
- A high/moderate degree

of scrutiny and sampling = REASONABLE ASSURANCE



- A restricted degree of scrutiny and sampling =

LIMITED ASSURANCE



### LRQA process delivery

Reasonable assurance engagement is to conduct systematic and thorough evidence gathering procedures to confirm the statements being made by the client.

Limited assurance engagement is to answer if there are any reasons to conclude that the statements being made by the client do not meet the requirements of the stakeholders.



## Level of confidence in Assurance Statement

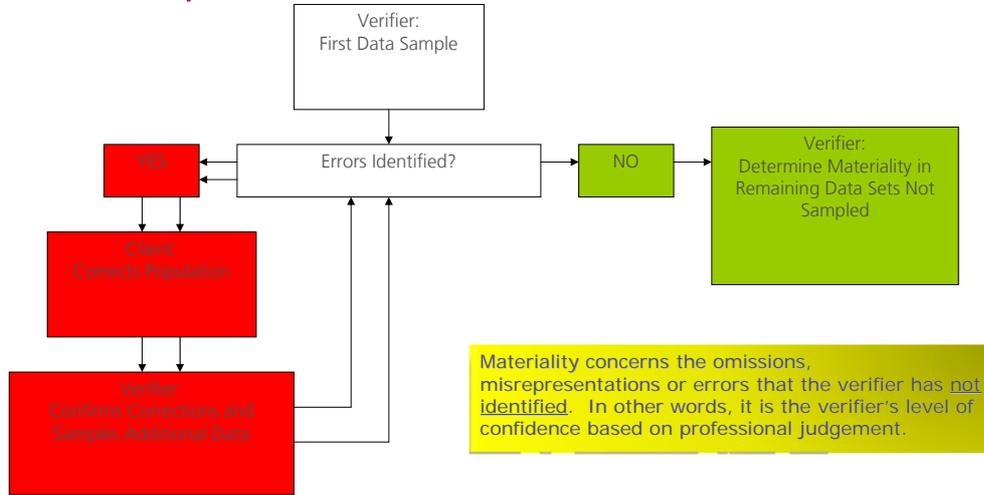
- Due to the different depths of verification undertaken, assurance statements must be worded differently
- **Reasonable Assurance:** Assurance Statement expressed in the positive form
  - "In our opinion internal control is effective, in all material respects, based on XYZ criteria" or
  - "In our opinion the responsible party's assertion that internal control is effective, in all material respects, based on XYZ criteria, is fairly stated."
- **Limited Assurance:** Assurance Statement expressed in the negative form
  - "Based on our work described in this report, nothing has come to our attention that causes us to believe that internal control is not effective, in all material respects, based on XYZ criteria" or
  - "Based on our work described in this report, nothing has come to our attention that causes us to believe that the responsible party's assertion that internal control is effective, in all material respects, based on XYZ criteria, is not fairly stated."



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## Verification process



## Sampling plans

Sampling plan describes the amount and type of evidence requires to potentially issue a 'positive' opinion. It is usually impossible for a verification body to examine every record.

Example: in landfill gas projects, flow and CH<sub>4</sub> concentration data is recorded every 2 minutes which could mean over 520,000 records for a year.

The sampling plan sets out:

- The number of records to be examined.
- The type of records to be examined.
- The methodology used to determine the sample and its justification.

Tools include **statistical** methods: Random number selection, Systematic selection, Stratified random selection. **Non-statistical** methods: Purposive selection, Quota selection, Convenience selection



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## Conclusions

- After the verification, the validator/verifier will produce detailed 'findings' on the various aspects of the project. These findings will assess whether or not the criteria have been met

The verifier considers 2 issues in order to reach a conclusion:

- the appropriateness & sufficiency of the evidence ('findings')
- the materiality of any detected misstatements in the assertion.

There are 2 possible outcomes from this evaluation:

- the assertion is **free** from material discrepancies and the context of the assertion is appropriate.
- the assertion is **not free** from material discrepancies and/or the context of the assertion is not appropriate.

Issue Assurance Statement as appropriate

- Positive, qualified, fail



## Common pitfalls while implementing

- Omissions and incomplete identification of GHGs within the organisational and/or operational boundaries;
- Errors and mis-match of fuel quantities between invoices, weigh bridge records and fuel metering systems in use;
- Electricity meter readings not read at the start and end dates of monitoring period;
- Inconsistent use of emission factors – IPCC, National, State, Local;
- Selection of emission factors from unrecognised sources; and
- Failure to establish and maintain GHG quality management processes and procedures to ensure conformity to the principles of ISO14064-1



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