



# Organization Carbon Management

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## Structure of Presentation

- ▶ Bureau Veritas Profile
- ▶ Languages & Introduction
- ▶ Sample Cases → Nike, Coca-Cola, Walmart, CRC/UK
- ▶ Concept → GHG Management Hierarchy; Characteristics of Carbon Performance Leadership
- ▶ Organization Carbon Management → Key Issues, Opportunities & Risks
- ▶ Carbon Measurement and Report → Concept; How to
- ▶ Guidelines & Standards
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# Bureau Veritas Certification



- ▶ Founded since 1828 (2371).
- ▶ Head office in Paris.
- ▶ Formerly known as **BVQI**.
- ▶ **Now referred to as BVC or BVCH.**
- ▶ Operates in Thailand since 1993 (2536).
- ▶ Expert in QHSE SA (Health, Safety, Environment and Social Accountability), including GHG and energy management.
- ▶ A worldwide presence in 140 countries.
- ▶ A global network comprising more than 700 offices and laboratories.
- ▶ 26,000 employees and more than 100 nationalities.
- ▶ More than 280,000 customers.
- ▶ Financially stable - 2009 revenue 2,648 M€.
- ▶ Listed corporation in France.



# What we are doing?



## ► Quality Assurance

- ISO 9001:2000
- ISO/TS 16949:2002
- AS/EN 9100
- TL 9000
- Tick IT
- IECQ HSPM

## ► Environment

- ISO 14001:2004
- EMAS
- FSC
- **GHG, CDM, VCS, GS**
- **ISO 14064**
- **Carbon Management**
- **ISO 50001 Energy Management**

## ► IT / Security

- ISO27001
- TAPA

## ► Social Accountability

- **SA 8000, WRAP**
- **Codes of Conduct**



## ► OH&S

- OHSAS 18001 / TIS 18001

## ► Food

- GMP, HACCP
- BRC, IFS
- ISO22000

## Medical Devices

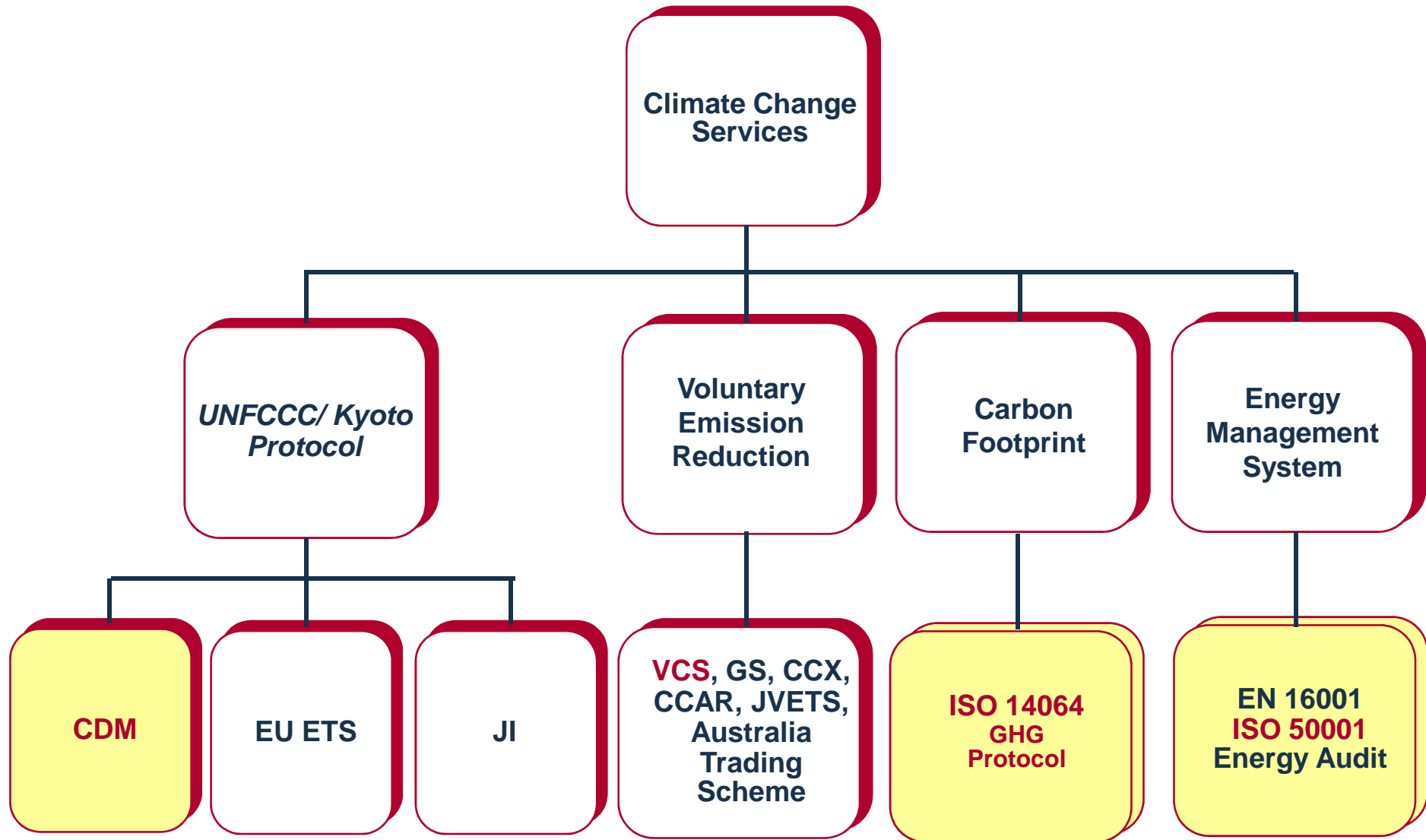
- ISO 13485

## ► Customized Solution

- Network/dealership/franchise audit.
- Supplier Audit.
- Internal Audit.
- CSR Assurance.
- VeriSelect Cert – customer service certification.
- VeriCert – Risk based audit for key process improvement.

## ► Training

# Climate Change Services Family



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# Climate and Carbon Management Language

climate change management	global warming	UNFCCC	COP/MOP	NAMAs
carbon neutral	CO <sub>2</sub> e	global warming potential-GWP	Kyoto Protocol	
carbon inventory	IPCC	Carbon dioxide equivalent	EU ETS	CDM
carbon intensity	low carbon economy (LCE)	VCU	AAU	EB
carbon trade	Low-fossil-fuel economy (LFFE)	ISO 14065	CER	DNA
carbon tariff	carbon capture and storage (CCS)	VER	CCX	DOE
carbon offset	renewable-energy economy	ISO 14064	ECX	GRI
cap-and-trade	GHG accounting	ISO 14067	PAS 2050	ISO 26000
carbon tax	GHG report	GHG management	ISO 14001	ISO 15001
validation	verification	GHG protocol	product carbon footprint	
chief carbon officer (CCO)	DEFRA	organization carbon footprint		
	Supply chain emission			

# Organization Carbon Management

## ► ENVIRONMENTAL SCIENCE:

- GLOBAL WARMING = Higher Temperature Sounds >> ALARMING
- CLIMATE CHANGE = Cooling OR Warming. Sounds > > AMBIGUOUS
- CLIMATE CRISIS >> Sounds RIGHT FOR COMMUNICATION ??

## ► ECONOMICS & BUSINESS MANAGEMENT:

- CARBON MANAGEMENT
- Carbon is also a risk and opportunity.
- Economic value associates with a unit of CO<sub>2</sub>e.
- Boundary and Ownership.



# Organization Carbon Management

- ▶ The process to determine where and how much the organization generates the **GHG**, and to come up with a plan and action to minimize or neutralize the emission.
- ▶ Global Warming Potential (**GWP**): Factor describing the radiative forcing impact of on mass-based unit of a given GHG relative to an equivalent unit of carbon dioxide over a given period of time.
- ▶ Carbon Dioxide Equivalent (**CO2e**): Unit for comparing the radiative forcing of a GHG to carbon dioxide.
- ▶ **Shadow carbon pricing**: Setting the financial value on the units of CO2e (e.g., trading value, allowance unit, tax rate, risk of losing business and competitive advance, reputation risk..)
- ▶ **MEASURE TO MANAGE - - > through GHG Accounting & Reporting**

GHG	GWP & CO2e
Carbon Dioxide (CO2)	1
Methane (CH4)	21
Nitrous Oxide (N2O)	310
Hydrofluorocarbon (HFC)	140-11,700
Perfluorocarbon (PFCs)	6,500-9,200
Sulfur hexafluoride (SF6)	23,900



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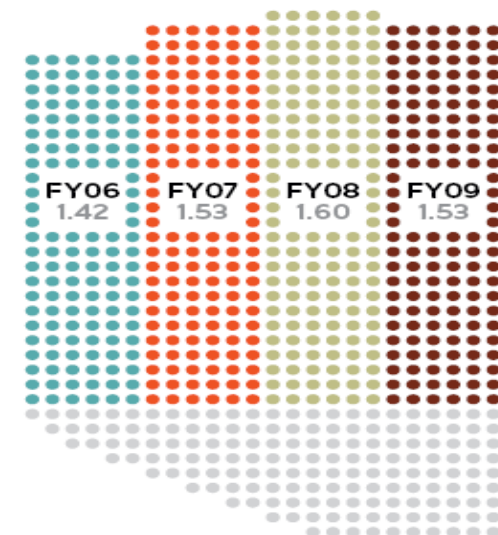
# Sample Cases on Organization Carbon Management

## ► Nike - -



- Integrate Carbon Management as part of corporate environment & sustainability missions.
- Evaluate overall energy use & GHG missions.
- Drawn distinction between what Nike owns and controls vs. what Nike can influence.
- Link energy with climate change management for more tangible management and monitoring of business partners.
- Network with internal climate organization, business association and NGOs.
- Assess overall emissions/footprint.
- Report GHG data/activities.

Total GHG Emissions – Nike & Supply Chain, excluding Materials (million ton of CO<sub>2</sub>e)



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# Sample Cases on Organization Carbon Management

## ► Nike - The operation of Carbon Management

- Products Creation & Innovation: e.g.,
  - Use concept “*Consider Design*” - -“Consider your impact. Consider your choices, Consider design, consider innovation, consider solutions” - - to reduce waste and CO2 emissions across the whole supply chain.
  - Redesign shoebox – made from 100% recycled fiber, reduce fiber content about 30%, more cost saving.
  - Air Jordan XX111 – made from post-manufacturing wasted.
- Manufacturing:
  - Account for about 90% of mfg. footprint.
  - Influence suppliers in on the location with greatest impact (China, Vietnam, Indonesia) through footwear energy efficiency program - - the participant contract factories achieved 7% reduction in CO2 and increase production by 10%.
  - The Nike Water Program - - influences the supplier to collect more specific production vs. water use, and improve water management.

## ► Nike - The commercialization of Carbon Management

- Engage customers on climate change through connection to sport. E.g., “Climate Ride” 300-miles, multi-day bicycle ride from New York City to Washington DC.
- Support “Focus the Nation” US based organization with mission to empower young leaders to accelerate the transition to clean energy in their communities.

## Other sample of business cases:

### ► **Coca-Cola - Energy Conservation/Climate Change** (announced on 2007)

- *“Calculate carbon footprint in every country where we operate in 2008 & set emission reduction target.*
- *Reduce our absolute CO2 manufacturing emission by 5% compared to 2004 level by 2015.*
- *Ensure that all new sales and marketing equipment is on average 20% more energy efficient by 2010.*
- *Expand hybrid electric technology in our fleet.”*

### ► **Wal-Mart - Climate and Energy** (announced on 2010)

- Target to reduce 20million tonnes of CO2e from its products' lifecycle and supply chain by 2015 (2005 baseline)
- Make new stores 25-30% more efficient in 4 years.
- Make truck fleet 25% more efficient in 3 years, double in 10 years.
- Disclose emission data and reduction target - - The emission of Walmart's global supply chain is many larger than it's own operation emission.
- Selection - - focus on product categories with the highest embedded carbon as the greatest opportunity for reduction.
- Action - - Reduce GHGs from a product along it's lifecycle. Walmart must demonstrate it has direct influence on the reduction and show how that reduction would not have occurred without Walmart's participation.
- Assessment - - Walmart & Supplier will jointly responsible for the reductions. Assessment will be conduct if the claims on the methodology, completeness and calculation meet the quality assurance.

# Sample Case of Mandatory Requirement

## ► Carbon Reduction Commitment (CRC)

- Recently rename CRC Energy Efficiency Scheme.
- UK's 1<sup>st</sup> mandatory carbon trading scheme.
- UK commits to reduce emissions by 60% by 2050 (1990 base year).
- 2001 – Climate Change Agreement (CCA) targets energy intensive organizations to reduce emissions.
- 2010 – CRC targets low energy-intensive organization. Compulsory for organization that consumes over 6,000 MWh of half-hourly metered electricity during Jan – Dec 2008.
- Work in conjunction with EU ETS and CCA. Emission accounts by EU ETS and CCA won't be counted by CRC.
- Aim to reduce level of emission produced by low energy-intensive organization about 1.2million tonnes of CO<sub>2</sub>e/year by 2020. About 5,000 organization, 25% of total business section emission, affected.
- Jul 2011 – The organization submits Footprint Report.
- Apr 2013 – The organization purchases allowance to cover CO<sub>2</sub> emissions.

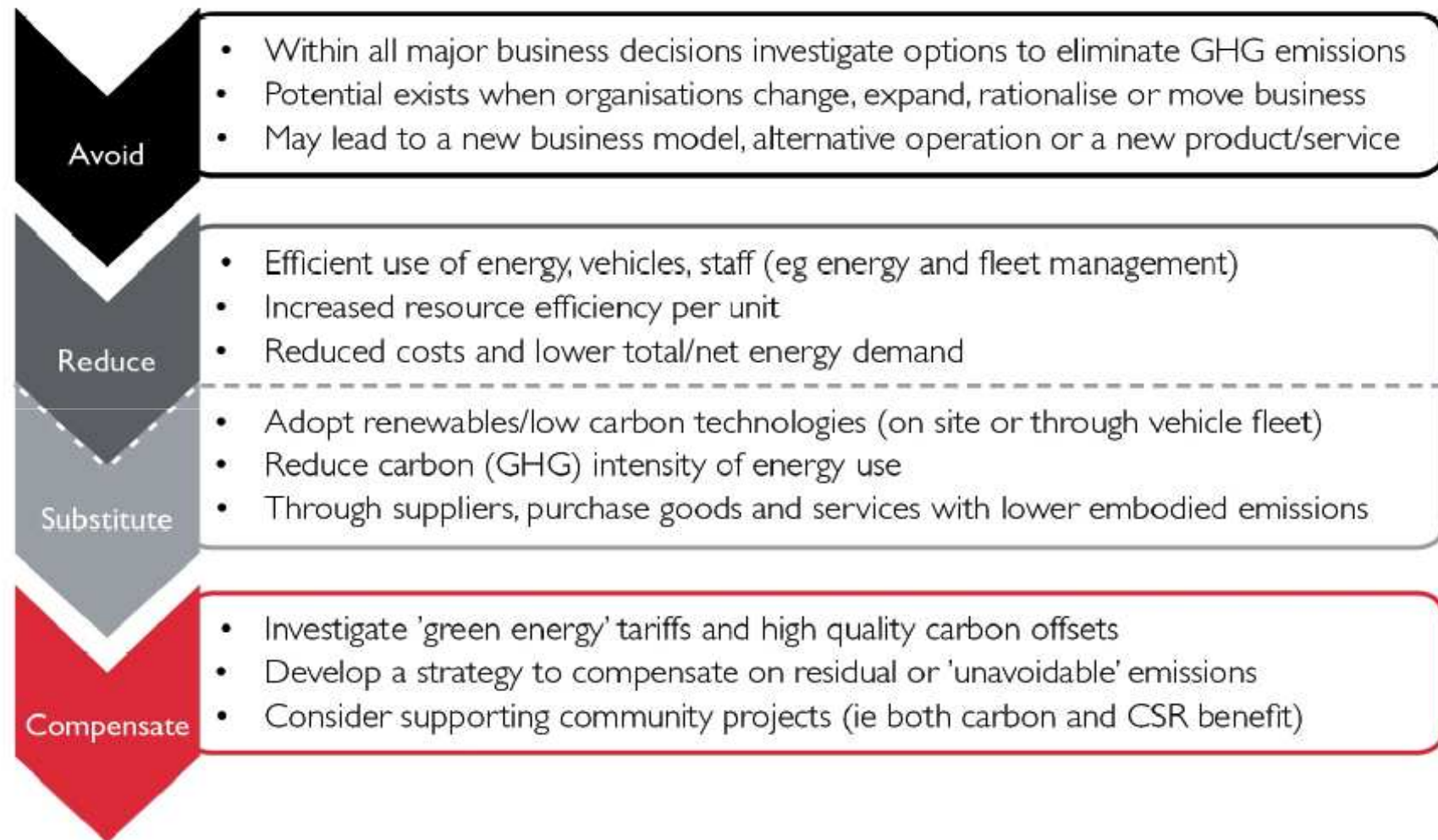


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# GHG Management Hierarchy



**Source:** "Special Report – GHG Management & Reporting" Institute of Environmental Management & Assessment.



# Characteristics of Carbon Performance Leadership

<b>Strategy</b>	<ul style="list-style-type: none"><li>• Integrate climate change risks and opportunities into overall company strategy</li><li>• Establish GHG emissions reduction target</li><li>• Engage with policy makers on climate policy</li></ul>
<b>Governance</b>	<ul style="list-style-type: none"><li>• Identify formal accountability for oversight and management</li><li>• Establish incentives for climate change related activities</li></ul>
<b>Stakeholder communications</b>	<ul style="list-style-type: none"><li>• Communicate in mainstream reporting or other regulatory filings</li><li>• Verify emissions data through an external third party</li></ul>
<b>Achievements</b>	<ul style="list-style-type: none"><li>• Implement energy or emissions reduction initiatives</li><li>• Achieve significant emissions reduction</li><li>• Capitalize on opportunities as a source of business value</li></ul>

**Source:** Figure 4: What are the characteristics of carbon performance leadership in 2010?, “Carbon Disclosure Project 2010 Global 500 Report”

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# Organization Carbon Management – Key Issues

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- ▶ Economization of carbon issues - - quantifiable as an economic value. Carbon is no longer free, but both liability and assets
- ▶ Environment concern - - Global warming impact
- ▶ Mandatory regulation - - regulation, EU ETS, CRC
- ▶ Corporate social responsibility - - moving beyond philanthropy & charity.
- ▶ Cost saving - - process improvement, waste management, energy efficiency.
- ▶ Commercialization of the new products - - design & development, green products/services.
- ▶ Supply chain management - - influence the manufacturing & trade partner.
- ▶ **Opportunities & Risks** - - next slide.

# Opportunities



- ▶ Switching traditional energy sources to low carbon energy and renewable energy.
- ▶ New market, products & services - - green product, low carbon technology, low carbon product, carbon management software, virtual communication network, carbon neutral conference.
- ▶ Carbon finance and additional revenue through cap-and-trade.
- ▶ Cost saving - - energy efficiency, process improvement.
- ▶ Enhancing brand image and reputation - - carbon management and initiatives, especially for early movers.
- ▶ Learning - - successful strategy for carbon management becomes a model to deal with other environmental impacts e.g., water, waste, public, government.

# Risks

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- ▶ Regulatory requirements - - costs of compliance.
- ▶ Higher energy price.
- ▶ Higher costs of raw material.
- ▶ Reputation risk - - emission and non-compliance to regulation and social expectation.
- ▶ Natural disaster - - disruption and damage to the operation and supply chain.
- ▶ Access to the source of finance - - green finance.



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# Carbon Measurement and Report - Concept

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- ▶ Quantifying the emission is the 1<sup>st</sup> step towards carbon management.
- ▶ What we cannot measure, we cannot manage.
- ▶ When Carbon is free, less incentive for measurement and reduction.
- ▶ Price of carbon from carbon tax, carbon trading, trade barrier, and pressure from public.
- ▶ Measure, quantify and value.

# Carbon Measurement and Report – How To

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- ▶ Identify, measure, quantify emission across the operation.
- ▶ Identify the carbon opportunity - - trading, costs saving, reputation management.
- ▶ Factor carbon into business planning & investment - - green technology investment, green product, CSR.
- ▶ Offset the emission that cannot be reduced - - not applicable for Thailand, but some sector exposed to the international market e.g., airline.
- ▶ Monitor and account for emission.
- ▶ **Use set of standard** e.g., ISO 14064, GHG Protocol to transparently report the emission.
- ▶ Demonstrate good governance, disclose and verify by independent organization.



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# ISO 26000:2010 Guidance on social responsibility.

- ▶ Neither intended nor appropriate for certification purposes.
- ▶ 6.5.5 Environmental issue 3: Climate change mitigation and adaptation.
- ▶ *“Every organization is responsible for some GHG emissions (either directly or indirectly) and will be affected in some way by climate change.”*
- ▶ **Climate change mitigation:** For example.
  - **Identify direct and indirect emission** sources and define the boundaries (scope) of its responsibility.
  - **Measure, record and report** on its significant GHG emission, preferably using methods well defined in internationally agreed standards.
  - **Implement measures** to reduce the direct and indirect GHG emissions within its control and encourage similar actions within its sphere of influences.
  - Realize **energy** saving, purchasing of energy efficiency goods, development of **energy efficiency** products/services.
  - Consider **carbon neutrality** by **offsetting** remaining GHG emissions.

# ISO 26000:2010 Guidance on social responsibility

## ► References:

- **ISO 14064-1, Specification with guidance at the organization level for quantification and reporting of GHG emissions and removals.**
- ISO 14064-2, Specification with guidance at the project level for quantification, monitoring and reporting of GHG emission reductions or removal enhancements.
- **ISO 14065, Requirement for GHG validation & verification bodies for use in accreditation or other forms of recognition.**
- ISO 14066, Competence requirements for GHG validation teams and verification team.
- ISO 14067-1, Carbon footprint of products – Part 1: Quantification.
- ISO 14067-1, Carbon footprint of products – Part 2: Communication.
- ISO 14069, Quantification and reporting of GHG emissions for organization (Carbonfootprint of organization) – Guideline for application of **ISO 14064-1.**

# GRI Global Reporting Initiatives – Sustainability Report Guideline



- ▶ To fulfill the need by providing a trusted and **credible framework for sustainability reporting**.
- ▶ Provide **performance indicators** in the areas of economic, **environment**, social, labor, human rights, society, product responsibility.
- ▶ **Environmental performance indicators:**
  - EN16 Total direct and indirect GHG emissions by weight - - **identify & report** direct and indirect GHG emissions in tonnes of CO2 equivalent.
  - EN17 Other relevant indirect GHG by weight - - **identify & report** GHG emissions from indirect energy use (e.g., business travel) in tonnes of CO2 equivalent.
  - EN18 Initiatives to reduce GHG emissions and reductions achieved - - **identify & report** emissions reductions quantitatively in tonnes of CO2 equivalent.
- ▶ **Ref: GHG Protocol** – A corporate accounting and reporting standard.

# ISO14000 family & Carbon Management

## ► Benefits:

- Technical credible
- Fulfill stakeholder needs
- Facilitate the development of uniform requirement
- Promote efficiencies
- Support regulatory compliance
- Enhance investor confidence

## ► Scopes:

- **Environmental management systems** ISO 14001
- Environmental auditing & related environment investigations
- Environmental performance evaluation
- Environmental labeling
- Life cycle assessment
- Environmental communication
- Environmental aspects of product design and development
- Environmental aspects in product standards.
- **GHG management and related activities.** ISO 14064
- Measuring of CFT of products.

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# ISO14000 family - - ISO 14001

- ▶ Environmental management systems (EMS) - - ISO 140001
  - Managing the impact of organization's activities.
  - Tool for carbon management checking - - Has your organization incorporate and consider carbon management into -:
    - ✓ Environmental policy
    - ✓ Environmental aspects
    - ✓ Legal & other requirement - - e.g., corporate requirement, customer requirement.
    - ✓ **Monitoring & measurement**
    - ✓ Objectives & targets - - continual improvement.
    - ✓ Resource & responsibility management - - including investment on energy efficiency products/services.
    - ✓ Training & awareness
    - ✓ Operational control
    - ✓ Internal audit & management review.

**QUESTION - - Is adopting ISO14K sufficient for managing the concerns on GHG emission data/inventory at the verifiable level?**

# ISO14000 family – ISO 14064

- ▶ International GHG Accounting and verification standards
  - Development begun in 2002 - > Issued on 2006.
  - Developed by committees of 175 experts from 45 countries.
  - Developed with reference to financial accounting and environmental audits as well GHG schemes (e.g., CDM, EU ETS) verification.
  - **Define how to quantify & report GHG emissions as well as verification.**
- ▶ The purpose is to provide clarity and consistency for quantifying, monitoring, reporting and validating or verifying GHG inventories or projects, which will generate, among others:
  - Enhance integrity of GHG quantification.
  - **Credibility, consistency and transparency of GHG quantification, monitoring and reporting.**
- ▶ **Complement with “GHG Protocol:** A Corporate for Sustainable Development and Reporting Standard” by the World Business Council for Sustainable Development and the World Resources Institute.

# ISO14000 family – ISO 14064

## ISO 14064-1

### Title

- *Specification with guidance at the **organization level** for quantification and reporting of greenhouse gas emissions and removals*

### Purpose

- Provide principles and requirements for the development of an Organization's **GHG inventories**

## ISO 14064-2

### Title

- *Specification with guidance at the **project level** for quantification, monitoring and reporting of greenhouse gas emission reductions or removal enhancements*

### Purpose

- Provides principles and requirements for the development of **activities** specifically designed to **reduce GHG emissions or increase GHG removals**.

## ISO 14064-3

### Title

- *Specification with guidance for the **validation and verification** of the GHG assertion*

### Purpose

- Provides principles and requirements for **verifying GHG inventories and validating or verifying GHG projects**

# ISO14000 family – ISO 14064-1

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- ▶ Principle: relevance, completeness, consistency, accuracy and transparency.
- ▶ Key aspects:
  - Boundary setting - - organizational boundary, operational boundary.
  - GHG quantification & calculation.
  - GHG reporting - - determine content, structure, public availability and methods of dissemination of GHG reports, based on requirements of the applicable GHG programme, internal reporting needs and needs of intended users of the report.
  - **Independent verification** - - verification against the organization GHG assertion against the compliance to **ISO 14064-3**. The 3<sup>rd</sup> party verifier will issue the **verification statement**.



# Conclusion

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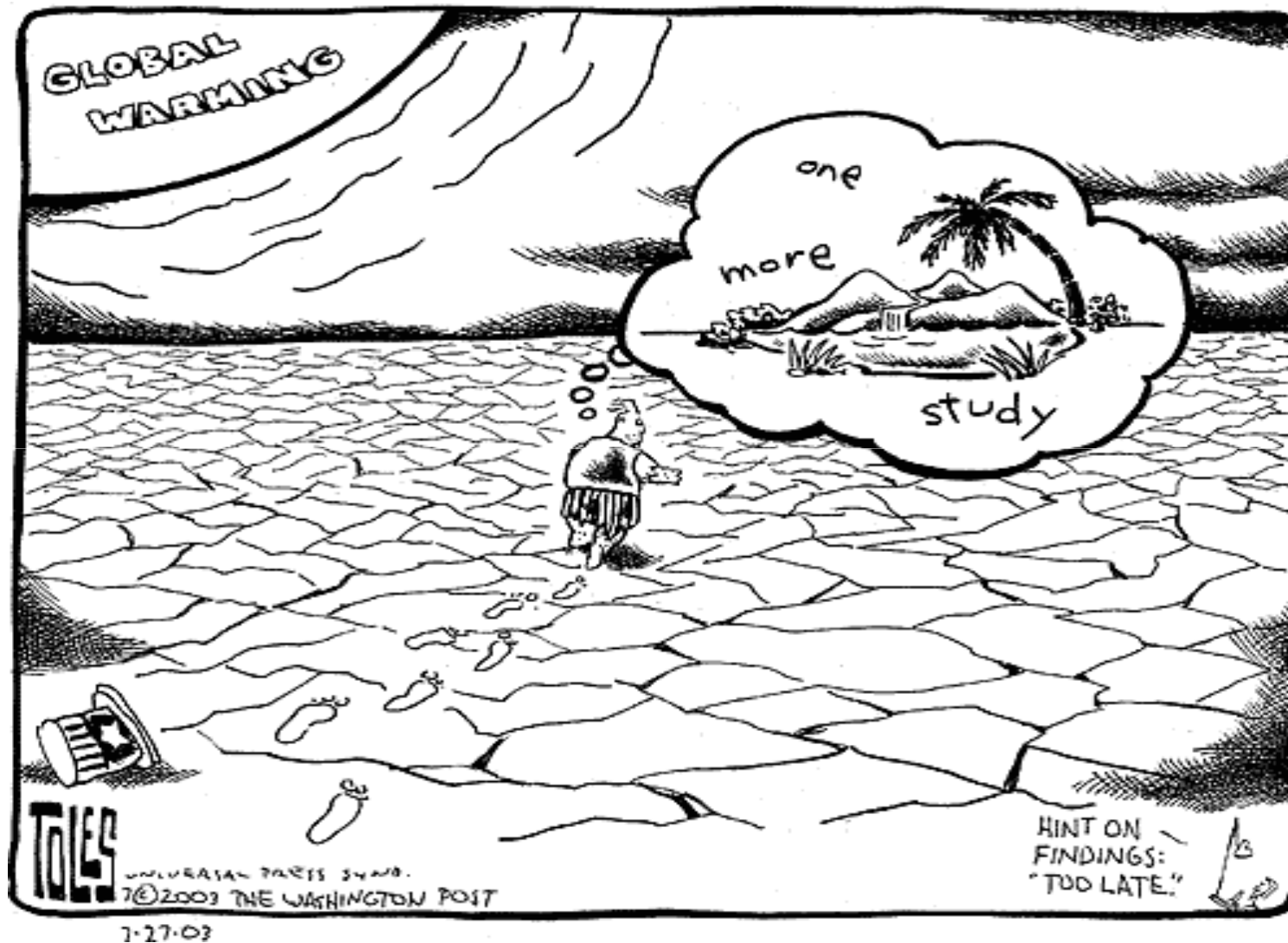
- ▶ Quantifying the emission is the 1<sup>st</sup> step towards carbon management.
- ▶ What we cannot measure, we cannot manage.
- ▶ Cross-functional carbon management. Involvement and commitment from top executive.
- ▶ When Carbon is free, less incentive for measurement and reduction.
- ▶ Use international standard for reporting framework for benchmarking and international acceptance.
- ▶ Incorporate carbon management into business risk and opportunity management.

# Recommendation

- ▶ Create more awareness.
- ▶ Move toward low carbon economy.
- ▶ Provide incentive to the first movers.
- ▶ Focus on carbon-intensive sector first.
- ▶ Moving beyond environment science to business strategic management and enterprise carbon management.
- ▶ Need organizational wide effort.
- ▶ Carbon disclosure is an integral part of good governance.
- ▶ Link carbon management with energy management to show the tangible gain – ISO 50001.
- ▶ Government initiative - - Example:

UK – Carbon Reduction Commitment	Thailand – Energy Law
Compulsory for organization that consumes over 6,000 MwWh of half-hourly metered electricity during Jan – Dec 2008. The organization requires to submit the GHG report and purchase the allowance.	Energy Development and Promotion Act B.E.2535 (1992) & Royal Decree of Regulated Factory and Building - - > requires factory/building with electricity meter 1,000kW up, transformer from 1,175kVA up, and total electricity usage up to 20mu MJ/year to adopt the energy management and submit the energy management report. Violation is subject to the penalty up to THB200,000max.

# Recommendation



# References

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**For more information about Carbon and Energy Management audit, pls. contact us.**