

# Standardization of Carbon Footprint of Products:

background, challenges and implementation

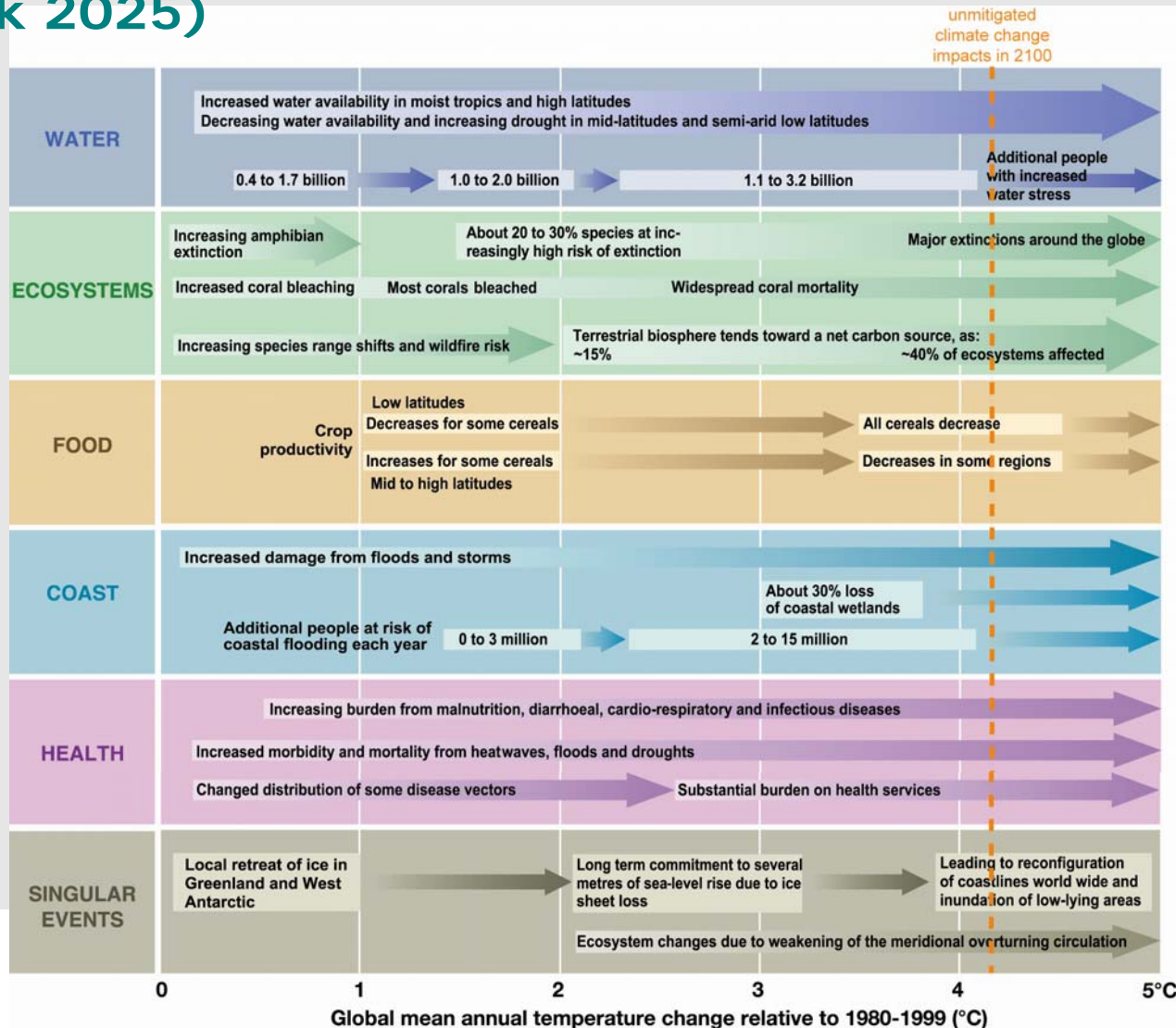
# Overview

- Background
  - IPCC
  - Stern report
  - G8/G20/MEF summits
  - Carbon Disclosure Project
- Potential role of CFP
- Examples CFP
  - IBM
  - Other
- Standardization efforts
  - PAS2050
  - WRI/WBCSD
- ISO 14067
  - Challenges
  - Next steps

# Background - IPCC

- **IPCC – AR4 (2007):**
  - Warming of the climate system is unequivocal
  - Discernable human influences extend beyond average temperature to other aspects of climate

# POTENTIAL RESIDUAL DAMAGE : ie not avoided by adaptn funding of c £100bn pa + delayed mitign action (peak 2025)



## Background - IPCC

### IPCC (30<sup>th</sup> plenary) – work on new scenarios:

- 2.6 and 2.9 W/m<sup>2</sup> consistent with the 2°C target
- Probability of staying below 2°C
  - 30-70% for 2.9 scenario
  - 50-95% for 2.6 scenario

# Background - IPCC

## Conditionalities 2.6 W/m<sup>2</sup> scenario:

- Intermediate emission baseline scenario (B2)
- Target achieved after an initial overshoot (requires availability of negative emissions in the second half of 21<sup>st</sup> century)
- Application of a wide portfolio of abatement options and significant changes in energy system (including CCS, nuclear; woody biomass and second generation technologies need to emerge over the next decades)
- Emissions need to peak between 2010 and 2020 and decline thereafter (requires immediate participation of developing countries)
- Net negative emissions from land use change and bio-energy use in the long term (beyond 2040)
- Carbon prices: around 100\$/t CO<sub>2</sub>eq in 2050; 300-1000\$/t CO<sub>2</sub>eq by 2100
- Investments needed 7-9 trillion \$ over next 30 years compared to B2 baseline for the 2.6 scenario

# Background - OECD&Kaya equation

**OECD 2008**

**costs of climate change = costs of mitigation + costs of adaptation + costs of residual damage**

**Professor Kaya**  
(World Summit 1992)

$$\text{GHG} = \frac{\text{GHG}}{\text{TOE}} \times \frac{\text{TOE}}{\text{GDP}} \times \frac{\text{GDP}}{\text{POP}} \times \text{POP}$$

Greenhouse Gas Emission = Carbon contain X Energy X Wealth X Population

## Background - Stern report (1)

- “Winning the Battle” & Stern Review: benefits of limiting Climate Change outweigh costs of action
- Costs of inaction: 5-20% of global GDP (Stern Review)
- Costs of global action (2030):
  - Investment costs: 0.5% of global GDP / year
  - Reduce global GDP growth by 0.19% / year  
(Expected global GDP growth of 2.8% / year)
- Co-benefits:
  - Increased energy security
  - Improved competitiveness through innovation
  - Health benefits from reduced air pollution

## Background - Stern report (2)

- Unless emissions are curbed, climate change will bring high costs for human development, economies and the environment
- Decisive and strong international action is urgent: delay means greater risks and higher costs.

## Background - G8/G20/MEF (1)

- **G8 Summit Gleneagles (2005):**

*"Promote innovation, energy efficiency, conservation, improve policy, regulatory and financing frameworks, and accelerate deployment of cleaner technologies, particular lower-emitting technologies".*

- **G8 Summit Hokkaido (2008):**

*"Seek to share the vision of achieving at least a 50 percent reduction in global emissions by 2050".*

- **G20 Summit London (2009):**

*"We reaffirm our commitment to address the threat of irreversible climate change, based on the principle of common but differentiated responsibilities, and to reach agreement at the UN Climate Change conference in Copenhagen in December 2009" and "We agreed to make the best possible use of investment funded by fiscal stimulus programmes towards the goal of building a resilient, sustainable, and green recovery. "*

## Background - G8/G20/MEF (2)

### Major Economies Forum on Energy and Climate (MEF), L'Aquila, Italy, July 2009

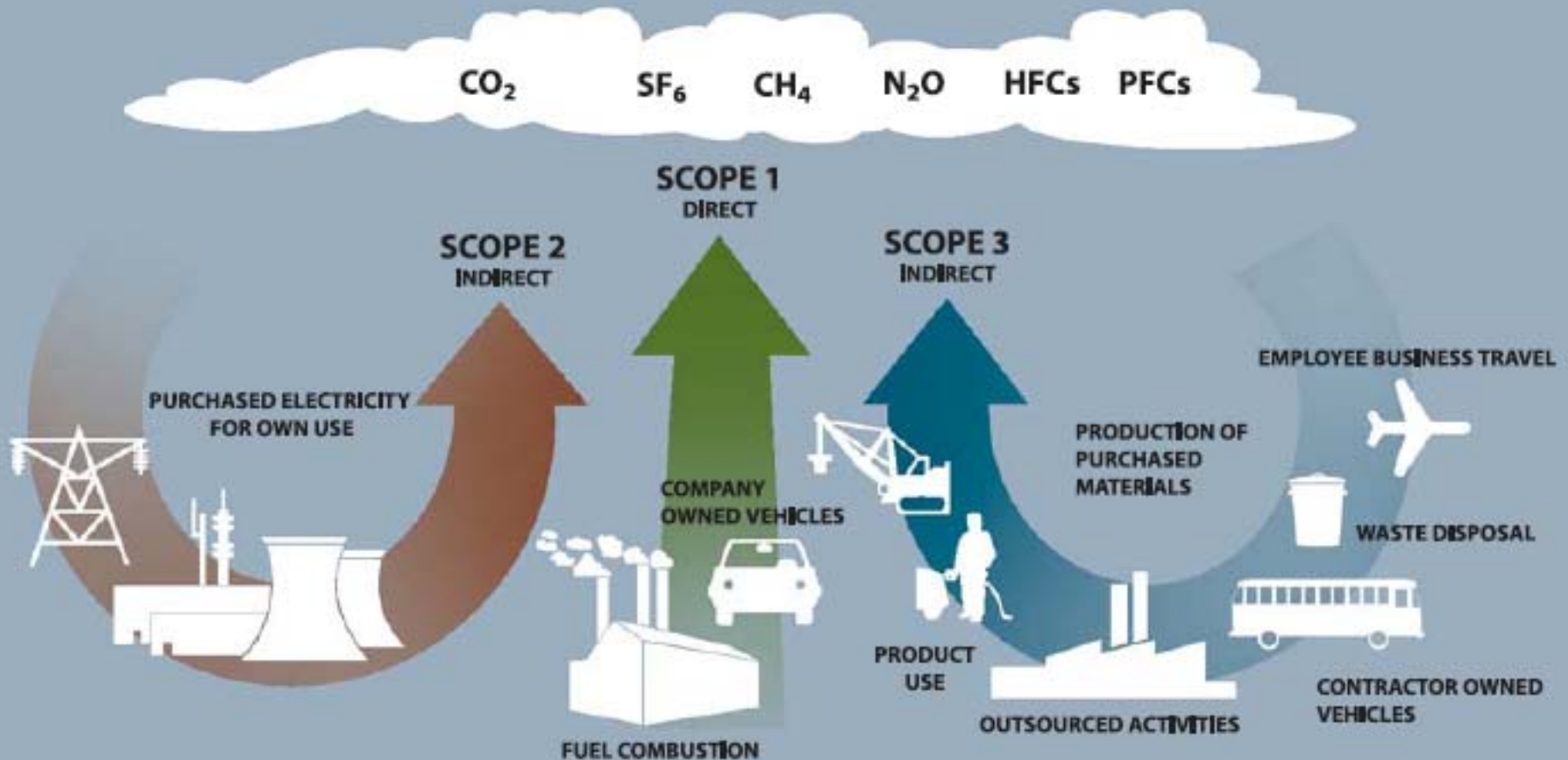
- *Reach agreement in Copenhagen*
- *Prepare low-carbon growth plans*
- *Take the lead by promptly undertaking robust aggregate and individual reductions in the midterm*
- *Recognize 2 degrees C goal.*
- *Immediate need to assist the poorest and most vulnerable to adapt; further support need to be mobilized;*
- *Increase public sector investments in research, development, and demonstration, with a view to doubling such investments by 2015.*
- *Lead countries will report by November 15, 2009, on action plans and roadmaps and make recommendations for further progress.*

# Background – CDP (1)

## The Carbon Disclosure Project

*“ CDP’s mission is to facilitate a dialogue between investors and corporations, from which a rational response to climate change will emerge.”*

# Background – CDP (2)



## Background – CDP (3)

CDP5



CDP6



0 500 1000 1500 2000 2500 3000

Disclosed emissions (million tonnes of CO<sub>2</sub> equivalent)

■ Scope 1 ■ Scope 2 ■ Scope 3

# Role of CFP (1)

## Carbon footprint of products

- Refers to the calculation of the amount of GHG emissions associated with a company, event, activity, or the lifecycle of a product/service,
- Enables to ascertain and **manage GHG emissions along the supply chain**
- Safeguards the survival of companies in the changing regulatory and economic business landscape
- Furthers the understanding of the risks and opportunities in the supply chain
- Allows to focus effort in response to new regulatory, shareholder and consumer pressures

## Role of CFP (2)

### **Objective: Delivering Financially Sustainable CFP Reduction**

- Consumers are more aware of climate change than ever before
- Adopt a financially sustainable approach to carbon footprint reduction that meets the needs of the business, as well as the market
- Apply supply chain management (SCM) – optimal financial carbon restructuring across extended partner community

## Role of CFP (3)

### Strategic business responses:

- immediate: deep review and reform of existing practices, with retrofitting and replacement, assuming tCO<sub>2</sub> shadow price
- novel low-carbon solutions for technologies, business models, value-chains
- lobby for **global standards**, good regulation, incentives for innovation and to reduce market barriers

# Examples CFP (1)

## IBM

- Complex supply chain
  - 30 000 suppliers
  - 60 countries
- ISO 14001 on global level
  
- Goals:
  - Minimize impact of IBM's own action
  - Bring innovative ideas to markets, partners
  - Low imbedded carbon in IBM's products
  
- Results:
  - 4.6 bio KWh saved from 1990 to 2007
  - 12% reduction target for CO<sub>2</sub> from 2005 to 2012

## Examples CFP (2)

- Acer
- Banco Bradesco
- Boeing
- BT Group
- Cadbury
- Carrefour
- Celesc
- Colgate Palmolive
- Dell
- Exelon
- Fiji Water
- Heinz
- HP
- IBM
- Imperial Tobacco
- Johnson & Johnson
- Johnson Controls
- Juniper Networks
- Kellogg's
- L'Oréal
- Merrill Lynch & Co.
- National Grid
- Nestle
- Newmont Mining
- Pepsi Cola
- Procter & Gamble
- Prudential
- Reckitt Benckiser
- Royal Mail
- SSL International
- Tesco
- Unilever
- Vale
- Vodafone

## Examples CFP (3)

- ISO: NWIP on CF of organizations
- WRI/WBCSD: common draft document on CFP
- UK: PAS 2050 and pilot accreditation program for PAS 2050
- NZ: Measurement methodology for CF of agricultural products
- JAP: Updated guidelines for assessment and labeling of CFP
- US: Product Carbon Disclosure Program in Clean Energy and Security Act
- F: implementation of carbon tax from 2011
- G: PCF Pilot Project goes into next phase
- S: Climate labeling project launches website
- SF: Climate Bonus Project concluded

## Vision

- Need for a **zero-carbon economy implies** that the **CFP of all products** and services have **to be managed**
- Reducing the risks of temperature increase will drive society after 2050 even to a global economy with negative emissions on a global scale in order to suck CO<sub>2</sub> out of the atmosphere ("**overshooting scenarios**")
- The current **economic crises** can never deliver the emission reductions of GHG as required but it offers a unique **opportunity to restructure the supply chains** of the products consumed in a more sustainable manner
- **Bottom-up efforts along supply chains complement top-down efforts** at national and international level in order to **meet the ultimate objective under the Climate Convention (Article 2)**

## Role of ISO (1)

**International standards** are a powerful tool for

- Disseminating new technologies and good practices,
- Developing global markets,
- Supporting the harmonization of government policies on a global scale.

# Development of ISO 14067 (1)

- Apr 2008: 1<sup>st</sup> meeting of ISO/TC 207 WG 2 (Vienna)
- Jun 2008: 2<sup>nd</sup> meeting of ISO/TC 207 WG 2 (Bogota)
- 28 Jul 2008: NWIP Carbon Footprint of products
- 28 Nov 2008: NWIP on CFP agreed
- 16 Dec 2008: WD of ISO 14067-1 and 14067-2
- 14 Jan 2009: Collated comments to WD
- Jan 2009: 3<sup>rd</sup> meeting of ISO/TC 207 WG 2 (Kota Kinabalu)
- 22 Apr 09: WD 1 of ISO 14067-1 and 14067-2
- 27 May 09: collated comments to WD 1
- 19 Jun 09: WD 1 of ISO 14067-1 and 14067-2 comments included

## Development of ISO 14067 (2)

- 22 -25 Jun 09: 4<sup>th</sup> meeting of ISO/TC 207 WG 2 (Cairo)
- 2 Sept 09: ISO/WD2 ISO 14067-1 released
- 21 Sept 09: ISO/WD2 ISO 14067-2 released
- 15 Oct 09: WD 2 of ISO 14067-1 and 14067-2 comments included
- 19 – 21 Oct 09: 5<sup>th</sup> meeting of ISO/TC 207 WG 2 (Vienna)

# Progress on ISO 14067-1 (2)

- INTRODUCTION
- SCOPE
- NORMATIVE REFERENCES
- TERMS AND DEFINITIONS
- PRINCIPLES
- METHODOLOGICAL FRAMEWORK
  - GENERAL
  - GOAL AND SCOPE DEFINITION OF THE QUANTIFICATION OF CFP
    - GOAL OF CFP STUDY
    - SCOPE OF CFP STUDY (FUNCTIONAL UNIT, BOUNDARIES, OFFSETTING, DATA & DATA QUALITY, USE STAGE & USE PROFILE)
  - INVENTORY ANALYSIS OF CFP
    - GENERAL
    - TIME PERIOD FOR ASSESSMENT OF GHG EMISSIONS
    - TREATMENT OF SPECIFIC GHG EMISSION SOURCES AND SINKS (ELECTRICITY SUPPLY, LAND USE CHANGE)
    - ALLOCATION TO CO-PRODUCTS
  - IMPACT ASSESSMENT OF CFP
- INTERPRETATION OF CFP
- REPORTING
- PREPARATIONS FOR COMMUNICATION AND VERIFICATION
- CONFIDENTIALITY
- ANNEXES A, B, C, D, E

## Progress on ISO 14067-1 (3)

**Discussion Paper** for carbon storage and delayed emissions:

Two approaches:

- a) Treat all emissions, no matter when they occur, as having been produced when the product was produced
- b) Treat delayed (future) emissions differently to those emissions occurring today

Three aspects considered:

- a) LCA perspective (time boundary: y or n)
- b) Value choice perspective (priority to reduce now: y or n)
- c) "Incentivizing behavior" perspective (e.g. with regard to land management)

# Progress on ISO 14067-2 (1)

- **INTRODUCTION**
- **SCOPE**
- **NORMATIVE REFERENCES**
- **TERMS AND DEFINITIONS**
- **OBJECTIVE**
- **PRINCIPLES**
- **USE OF PRODUCT CATEGORY RULES**
- **GUIDANCE ON COMMUNICATION**
- **REQUIREMENTS AND PROCEDURES FOR COMMUNICATION OF CFP**
  - General
  - Declaring overall emissions
  - Declaring emissions for specific stages of the life cycle
  - Declarations communicating reduction in carbon footprint
  - Declarations making Comparisons
  - Simplification of Claims
- **VERIFICATION**

## Progress on ISO 14067-2 (2)

The **objective** of this Part of this International Standard is to **specify** the communication of the carbon footprint of products and any resulting GHG reduction coupled to the product.

# Outstanding issues - challenges

- Basic challenge: right balance between practicality – environmental integrity/credibility
- Requirements with regard to PCRs
- Labeling
- Carbon storage – delayed emissions
- Need for further clarification on the status of ISO 14065 in the context of ISO 14067
- Terms and definition
- Harmonization with WRI/WBCSD and PAS 2050

# Development of ISO 14067 (1)

## Target dates:

- |                       |               |
|-----------------------|---------------|
| ■ WD 3                | 2009-12-11    |
| ■ Comments to WD 3    | 2010-01-17    |
| ■ 6th meeting of WG 2 | 2010-02-08/12 |
| ■ CD registration     | 2010-03-09    |
| ■ DIS registration    | 2010-09-09    |
| ■ FDIS registration   | 2011-09-09    |
| ■ IS publication      | 2012-03-09    |

# Development of ISO 14067 (2)

## Additional momentum

- Very good progress under WRI/WBCSD and better harmonization with WRI/WBCSD
- Growing interest (more nominations/participation, activities in additional countries, companies)
- Recognition in media (Wall Street Journal)
- International process
  - G20
  - Copenhagen?

## Development of ISO 14067 (3)

### Stock take:

- CFP is a powerful tool for management of mitigation of GHG in the coming decades
- CFP adds value to the current management of GHG mitigation
- Significant progress in development of ISO 14067 but still a long way to go
- Full use of the potential of CFP will be only possible with more specific product category rules
- CFP might be misused – user should be aware of limitations
- Growing worldwide interest in CFP

## Summary

- The ISO process demonstrates its strength to facilitate mutual understanding of various constituencies
- There are good prospects that the vision of CFP becomes reality

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