

CARBON DISCLOSURE PROJECT

**Climate Change:
CDM. EU-ETS. JI. EAU. CDP. CER. PCF.
CO2. SF6. CH4. HFC. PFC. N2O. CCX.**



Briefing by: Gail Kendall
**Marking the September 2005 launch of
Carbon Disclosure Project**

HSBC 
The world's local bank

Three take-away messages:

The **climate** is **changing**.

It will affect the investment world.

There is something we can do about it.

Kindly note that this presentation does not contain investment advice!

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Climate Change

Cause of **climate change**:

- accumulation of greenhouse gases
- emitted by anthropogenic activities

Indicators of **climate change**:

- increasing average global temperature
- rising sea levels
- reduced snow or ice coverage
- increased precipitation or storm activity

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Anthropogenic Greenhouse Gases

Greenhouse Gases	Chemical Formula	Atmospheric Lifetime (years)	Anthropogenic sources	Global Warming Potential (for 100 years)
Carbon Dioxide	CO₂	5 to 200	Fossil fuel combustion Land use conversion Cement production	1
Methane	CH₄	12	Fossil fuels, Rice paddies Waste dumps, livestock	23
Nitrous Oxide	N₂O	114	Fertilizer Industrial processes Combustion	296
HCFC 22*	CHClF₂	11.9	Liquid coolants	1,700
Perfluoro-Methane**	CF₄	50,000	Production of Aluminium	5,700
Sulphur hexafluoride	SF₆	3,200	Dielectric medium	22,200

* a Hydrofluorocarbon (**HFC**)

** a Perfluorocarbon (**PFC**)

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International Cooperation

- United Nations Framework Convention on Climate Change (**UNFCCC**) provides the forum for international agreement
- Intergovernmental Panel on Climate Change (**IPCC**) reviews the studies of climate change (but does not perform its own studies).
- Kyoto Protocol went into force on 16 February 2005 after ratification by Russia 6 months earlier.
- China, India, Australia, US, Japan and South Korea created the technology-focused Asia-Pacific Partnership for Clean Development and Climate in July 2005.

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Kyoto Protocol Targets

Country	Target (1990 - 2008/2012)
EU-15, Bulgaria, Czech Republic, Estonia, Latvia, Liechtenstein, Lithuania, Monaco, Romania, Slovakia, Slovenia, Switzerland	-8%
US	-7%
Canada, Hungary, Japan, Poland	-6%
Croatia	-5%
New Zealand, Russian Federation, Ukraine	0
Norway	+1%
Australia	+8%
Iceland	+10%

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Measures of regulatory risk

- Kyoto jurisdiction
- Total **GHG emissions**
- **GHG emissions per unit**
 - Revenue, earnings, capitalisation
 - Productive output (relative to peers)
 - Depending upon regulatory jurisdiction
- Cost of **GHG emissions reduction** (5%, 10%, 20%) per unit
 - Revenue, earnings, capitalisation
- Business opportunities?

Allocating responsibility for emissions

- World Resources Institute (WRI) and World Business Council for Sustainable Development (WBCSD) created the Greenhouse Gas Protocol (GHG Protocol)
- Protocol accountability is with the actual emitter – which might be a foreign entity
 - But social accountability may be attributed to others – particularly with big companies or companies with a large market share

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Cost of emissions reductions

Costs can range from

- Savings from reduced waste, etc
- Modest process enhancements and upgrades
- Major retrofits, renovations or conversions
- High due to closure of assets rendered non-competitive due to their emissions

But **emissions trading** favours least cost

Kyoto Protocol Flexible Mechanisms

The three Kyoto emission reduction mechanisms are:

- Joint Implementation (JI): emission reductions which arise from project investments in other countries when both countries have their own Kyoto emission targets (Annex I countries)
- Clean Development Mechanism (CDM): certified emission reductions (**CER**) arising from project investments in developing countries which don't have their own Kyoto emission targets - non-Annex I countries
- International Emissions Trading: portions of Annex I country's emission allowance units (**EAU**) can be bought and sold on an international carbon trading market.

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Mechanics of Emissions Trading

Cap & Trade

- Target determines the cap (i.e. maximum emissions)
- Companies get allocations
- European Union Emissions Trading Scheme (**EU-ETS**): Companies must tally up their emissions against a combination of their allocations, and their purchase of a) allocations from others & b) allocations or credits from other eligible schemes, possibly in other countries
- Giving rise to project developers, brokers, etc
- Chicago Climate Exchange (**CCX**) is a voluntary scheme for domestic emission reductions in the absence of a binding target in the US.

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Climate-Related Business Risk

A few companies, such as insurance (CDP3 p 22-23), may have exposure to risk of the direct impacts of climate change in the near to mid term.

For energy and energy-intensive companies (CDP3, p33-37, 78-87), or other GHG-intensive businesses (metals & mining), the business risks in the near to mid-term are typically dominated by regulations and associated costs of emissions reductions.

Many companies will have secondary or tertiary impacts from the above two effects (physical and regulatory changes).

Indicators of Risk Management

Accountability

- Quantify, independently verify, report emissions
- Designated responsibilities to individuals or departments (e.g. management, executive, or even board / committee)

Management

- Integration into decision-making process
- Efficiency programmes (energy and water)
- Initiatives, projects, programmes
- Targets for total emissions, intensity, renewable energy ...

Indicators of Risk Management

Leadership

- Stated position on government policy
- External collaboration and/or external advice
- Facing the dilemma:
 short term profit vs. long term sustainability

Other

- Technology development
 - Non-petrol vehicles
 - Coal gasification with carbon capture and sequestration
 - Safe nuclear power
 - Low-cost solar power

CDP3 Findings

- Businesses in non-Kyoto jurisdictions are asking for clear regulations
- Litigation and shareholder resolutions
- 54% quantified emissions
- 51% have emissions reductions programmes
- 45% set targets
- 35% took early action on emissions trading
- 13% reduced emissions
- 17% increased emissions