



**Climate Change Strategy Development**  
*managing risks and taking advantage  
of opportunities*

BCRIMA

17 March 2010



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# Outline

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## Objectives of this session:

- ▶ Update on the regulatory context of climate change
- ▶ How climate change is changing the business landscape
- ▶ Introduce a framework for developing a climate change strategy
- ▶ Provide insight into how companies are responding

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# Why is climate change a business concern?

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Rising temperatures and our dependency on fossil fuels will ultimately lead to increased economic, social and environmental instability, problems include:

- ▶ Rising prices and financial market instability impacting economic growth
- ▶ Social instability and humanitarian issues arising from increased natural disasters
- ▶ Impact on our food chain and agricultural yields
- ▶ Increased likelihood of drought and prolonged water shortages

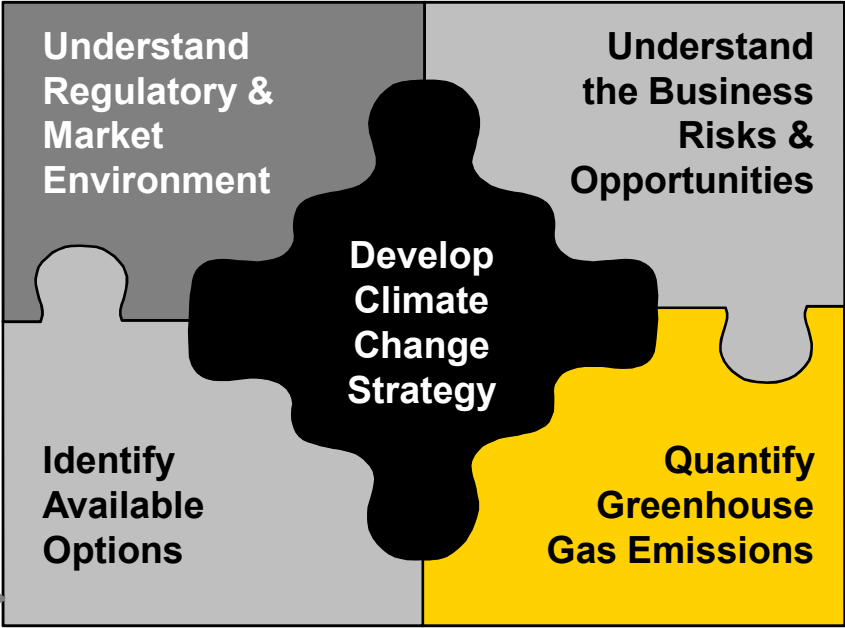
*Impacts highlighted by the Fourth Assessment Report of the Intergovernmental Panel on Climate Change (IPCC 2007) include:*

- ▶ By 2020, in some African countries, yields from rain-fed agriculture (the dominant method) could be reduced by up to 50%;
- ▶ Worldwide, approximately 20-30% of plant and animal species are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5-2.5°C;
- ▶ Widespread melting of glaciers and snow cover will reduce melt water from major mountain ranges (e.g. Hindu Kush, Himalaya, Andes), where more than one billion people currently live;
- ▶ In 2008 alone, more than 20 million people were displaced by sudden climate-related disasters. An estimated 200 million people could be displaced as a result of climate impacts by 2050;
- ▶ Climate change currently contributes to the global burden of disease and premature deaths. Adverse health impacts will be greatest in low-income countries, including from heat stroke, malaria, dengue and diarrhoea.

Source: UNFCCC

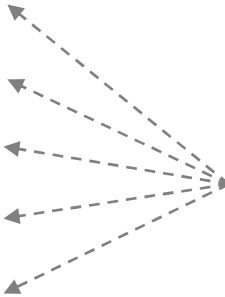
# Ernst & Young's framework for developing a climate change strategy

Political,  
Economic/Market,  
Social, Technology



Market and  
Regulatory Risks  
Physical Risks

Reduce  
Avoid  
Accept  
Exploit  
Transfer



Greenhouse  
emissions to be  
measured and  
verified

# Market and Regulatory Drivers

Understand  
Regulatory &  
Market  
Drivers

## Political

- ▶ Government regulation and incentives (Tax, Stimulus, Penalties, Subsidies, Funds)
- ▶ Pressure from international organizations
- ▶ NGOs, industry/ corporate organisations
- ▶ Political power of green debate and policies

## Economic/Market

- ▶ Market growth in carbon trading and renewable energy
- ▶ Revenue generation 'green' product market
- ▶ Supply chain and customer push for 'green' credentials
- ▶ Push for cost reductions
- ▶ Competition

## Social

- ▶ Increased awareness of climate change as a critical issue
- ▶ Employees and customers want accountability
- ▶ Shareholder activism
- ▶ High media coverage
- ▶ Public expectations of accountability

## Technology

- ▶ Clean energy technology
- ▶ Green IT
- ▶ Further development in clean coal, renewable energy, energy efficiency

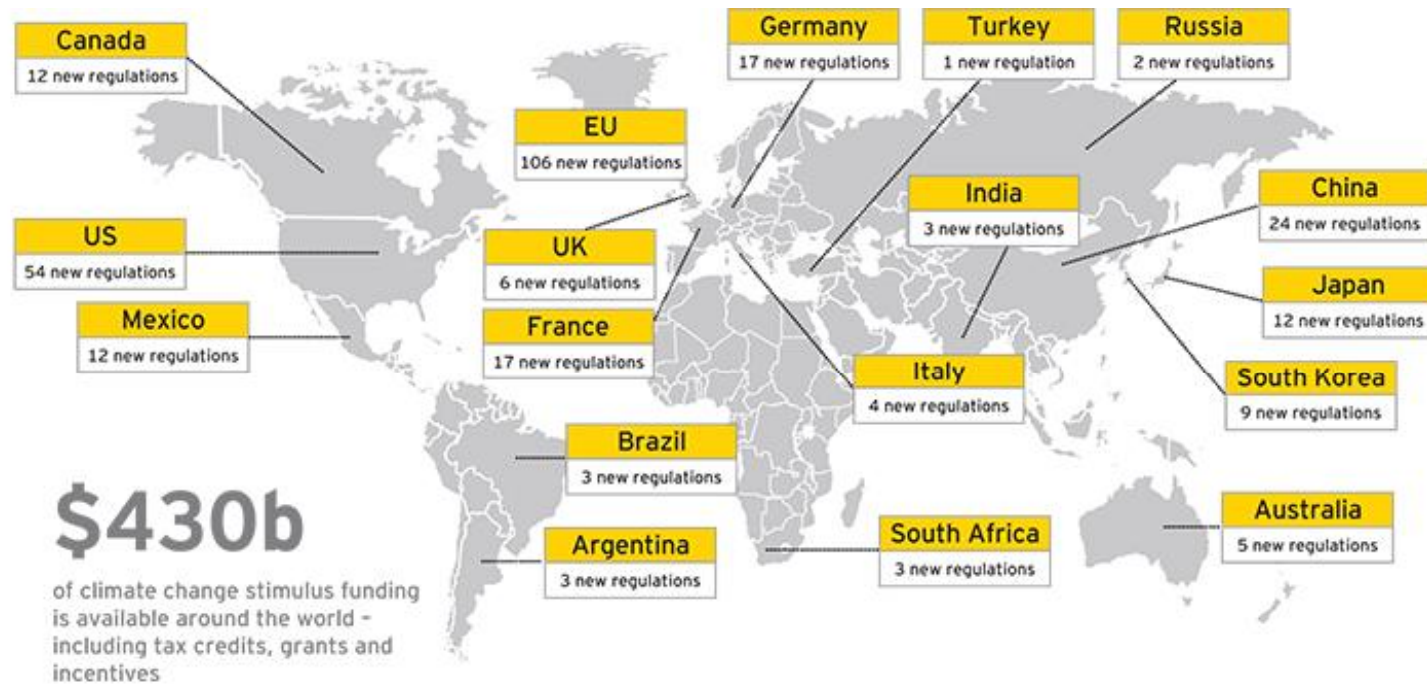
**Strategic and Operational Risks and Market Opportunities**

# Regulatory drivers

Understand  
Regulatory &  
Market  
Drivers

## Geographic considerations

Country and local regulations, taxes and stimulus packages will impact your approach.

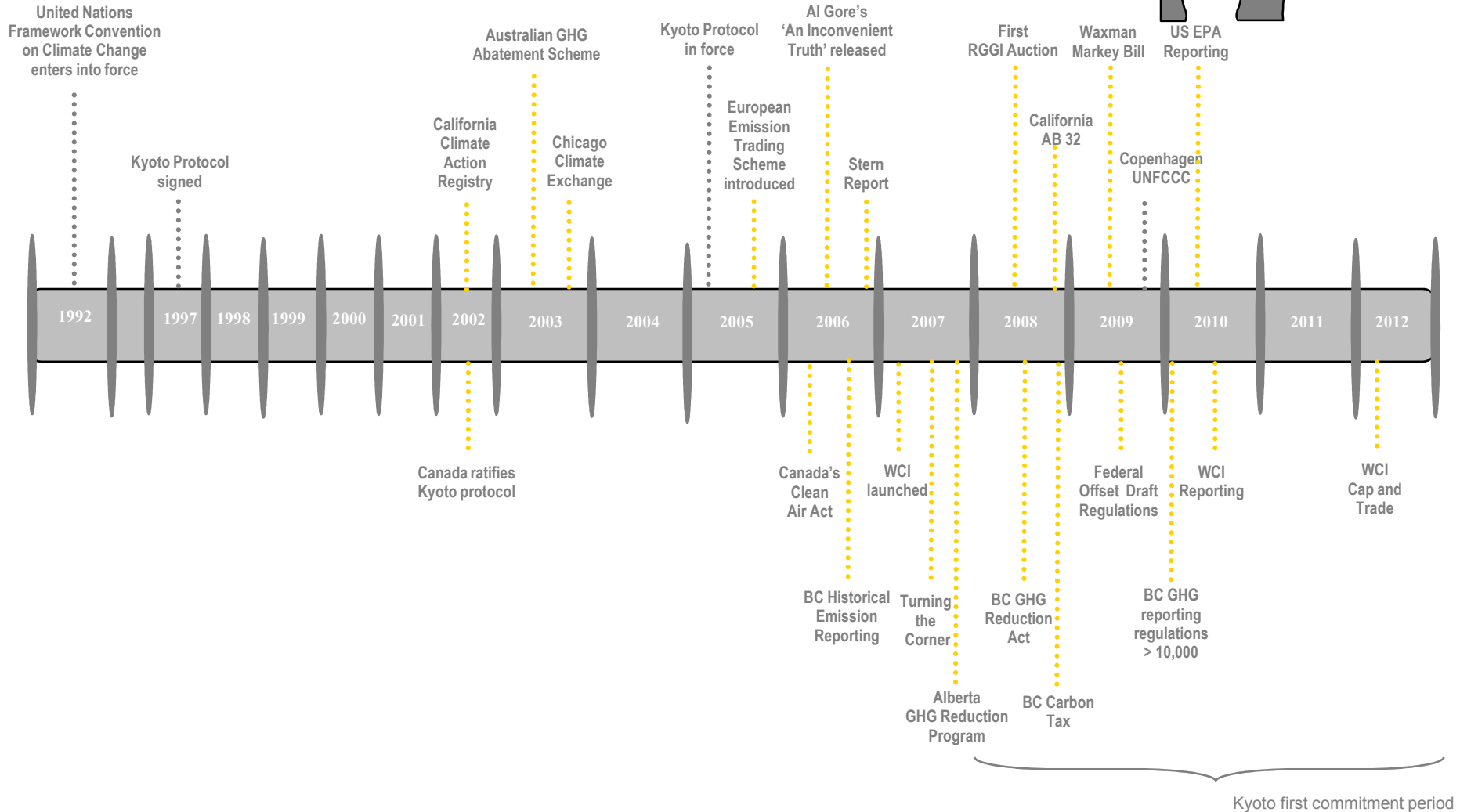


Regulatory changes between July 2008 and February 2009

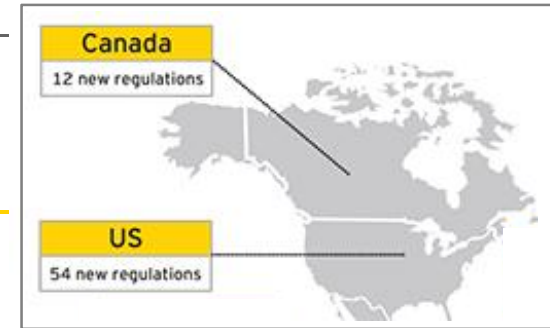
Sources: Deutsche Bank Climate Change Advisors, Potsdam Institute, Grantham Research Institute, HSBC Global Research, Factiva, UNEP, New Energy Finance, Ministry of Environment websites for respective countries.

# Climate change context

Understand Regulatory & Market Drivers

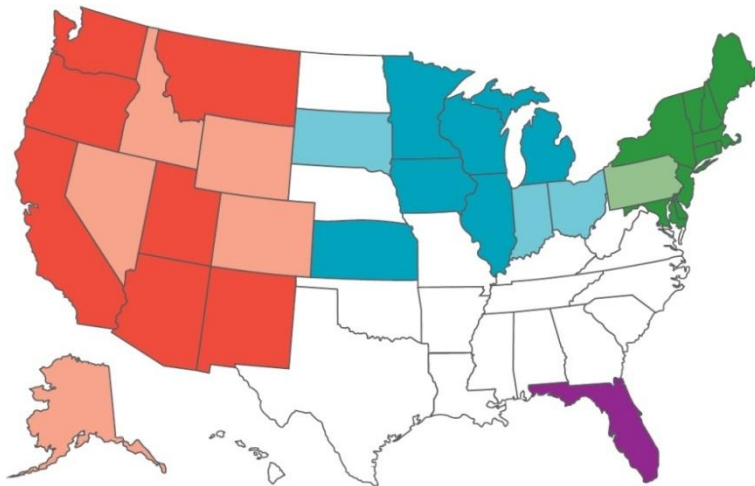


# Regulatory drivers - North America



## US

- ▶ Waxman-Markey bill
- ▶ EPA GHG reporting regulations
- ▶ WCI - California leading the charge
- ▶ Midwest GHG Accord
- ▶ RGGI
- ▶ Individual state based programs
- ▶ Incentives



## Canada

- ▶ Changeable climate change policy
- ▶ Recent re-focus on climate policy action
- ▶ Align with US GHG policies by 2012
- ▶ Draft Federal GHG Offset Rules
- ▶ Carbon capture and storage funding

## British Columbia

- ▶ Existing Carbon Tax
- ▶ GHG Reporting Regulations (WCI)
- ▶ Innovative Clean Energy (ICE) Fund
- ▶ Proposed Clean Energy Act

# Increasing stakeholder expectations

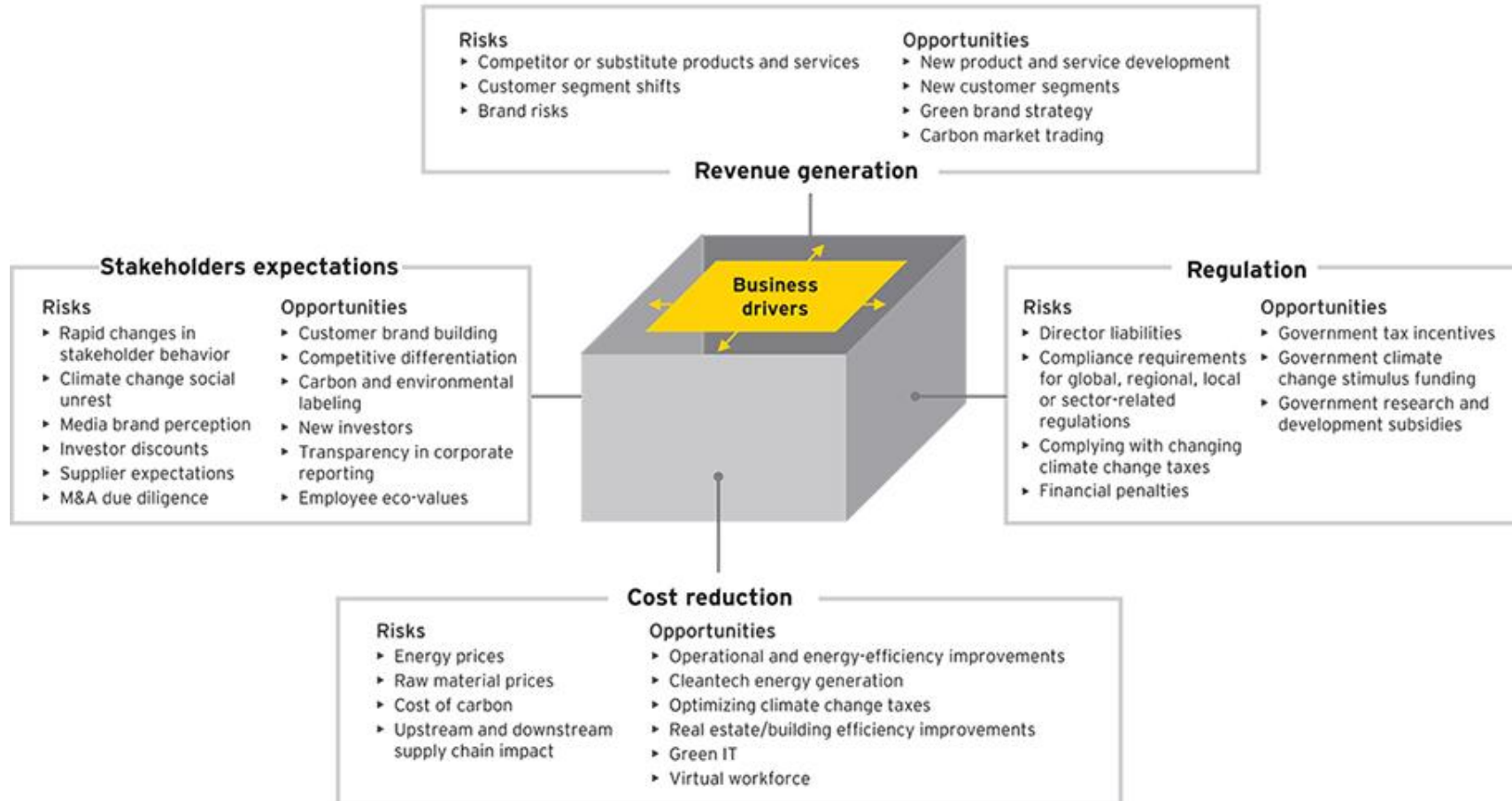
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Understand  
Regulatory &  
Market  
Drivers

- ▶ Investors and other stakeholders want external assurance and future-looking, balanced reporting on carbon / environmental disclosures
- ▶ Regulators may hold directors responsible for climate change statements that carry misleading or untrue information
- ▶ Consumers are starting to avoid carbon intensive products and are willing to pay a premium for low carbon alternatives
- ▶ Governments are increasing the amount of regulations and penalties for emissions and waste disposal
- ▶ Shareholders increasingly expect organizations to have a carbon strategy and effective carbon risk management
- ▶ Shareholders also expect organizations to embrace low carbon technologies and be able to compete effectively in low carbon economies

# Climate Change Risks and Opportunities

Understand the Business Risks & Opportunities

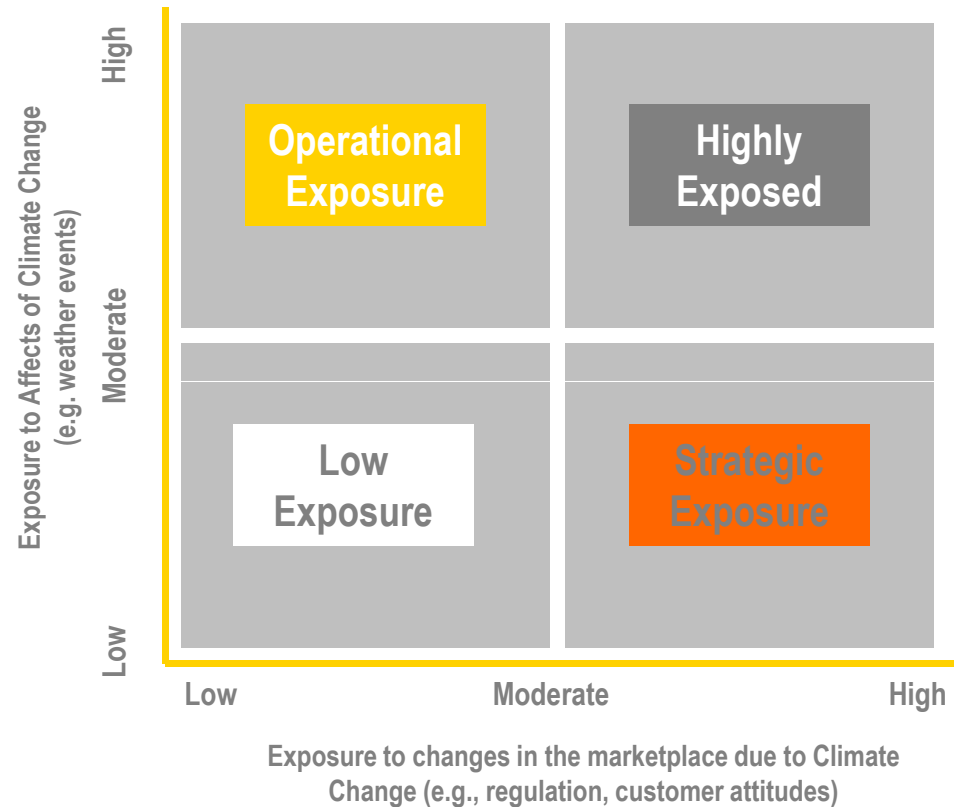


# Assess exposure

Understand  
the Business  
Risks &  
Opportunities

Exposure to climate change risks can be measured in a number of ways. For example if we consider two types of Climate Change risks: physical risks due to the affects of climate change (e.g. weather events) and the marketplace risks due to changing regulation, product demand and business reputation.

Where a company sits within this matrix determines the most appropriate approach to identifying and assessing the business risks and opportunities.



# Climate Change Risks and Opportunities

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Understand  
the Business  
Risks &  
Opportunities

## Risks

- ▶ Most heavy emitters, and even non-heavy emitters face some form of climate risk and therefore, many companies are undertaking a strategic analysis of climate risk. For example:
  - ▶ Physical risk (impacts of extreme weather events, increase in insurance premiums, reduced supply of resources)
  - ▶ Regulatory/compliance risk (meeting reduction limits)
  - ▶ Strategic risk (reputation risk, competitive positioning)
  - ▶ Operational risk (business interruption, loss of market share / reputation)
  - ▶ Financial risk (cost of compliance, trade and market risks, cost of capital)
- ▶ This risk analysis is incorporated into the broader corporate risk profile and audit program - part of “embedding” climate change considerations across key business functions

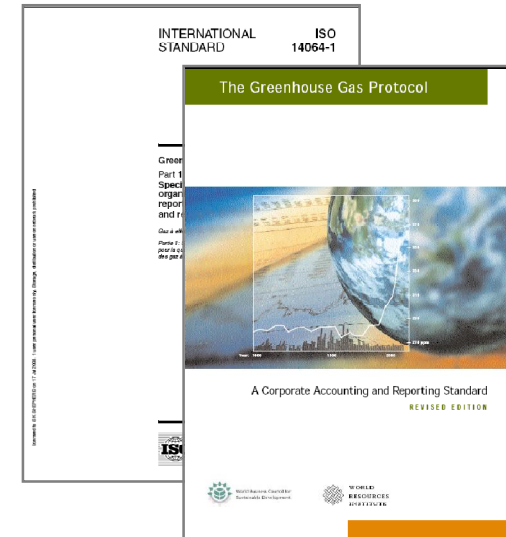
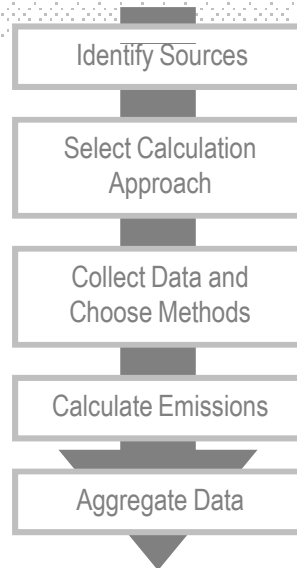
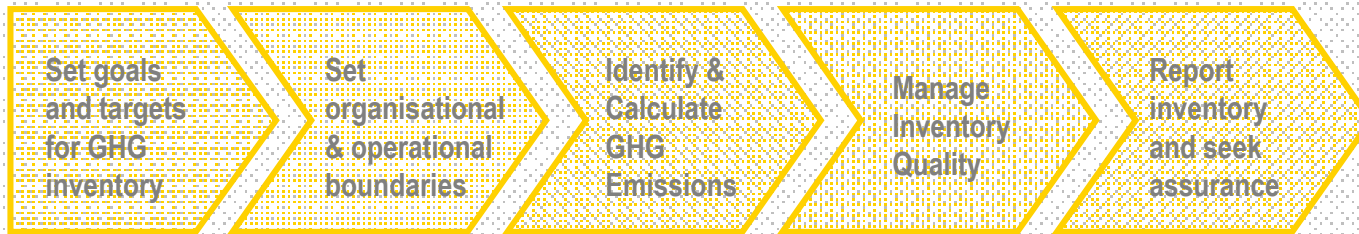
## Opportunities

- ▶ Assessments are also being performed to identify potential climate change opportunities, which as described earlier may include opportunities to:
  - ▶ Reduce costs
  - ▶ Increase markets share
  - ▶ Improve share value / shareholder perception
  - ▶ Leverage government incentives
- ▶ Leading companies are starting to recognize that climate change can provide a competitive advantage

# Quantification and Reporting Requirements

Quantify  
Greenhouse  
Gas Emissions

## Quantifying Greenhouse Gas Emissions



# Sources of a Carbon footprint

Quantify  
Greenhouse  
Gas Emissions

GHGs emissions come from a variety of sources:

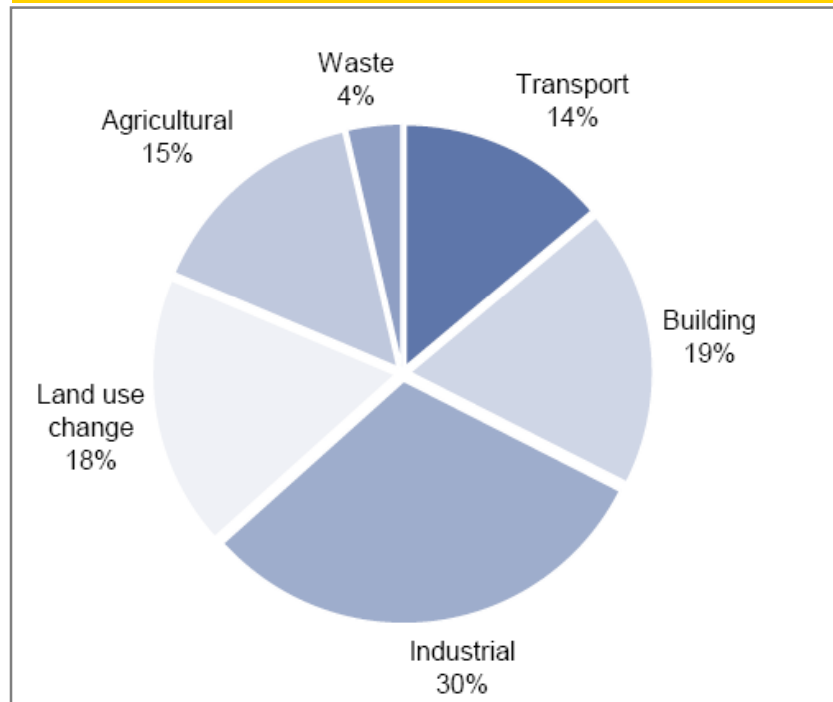


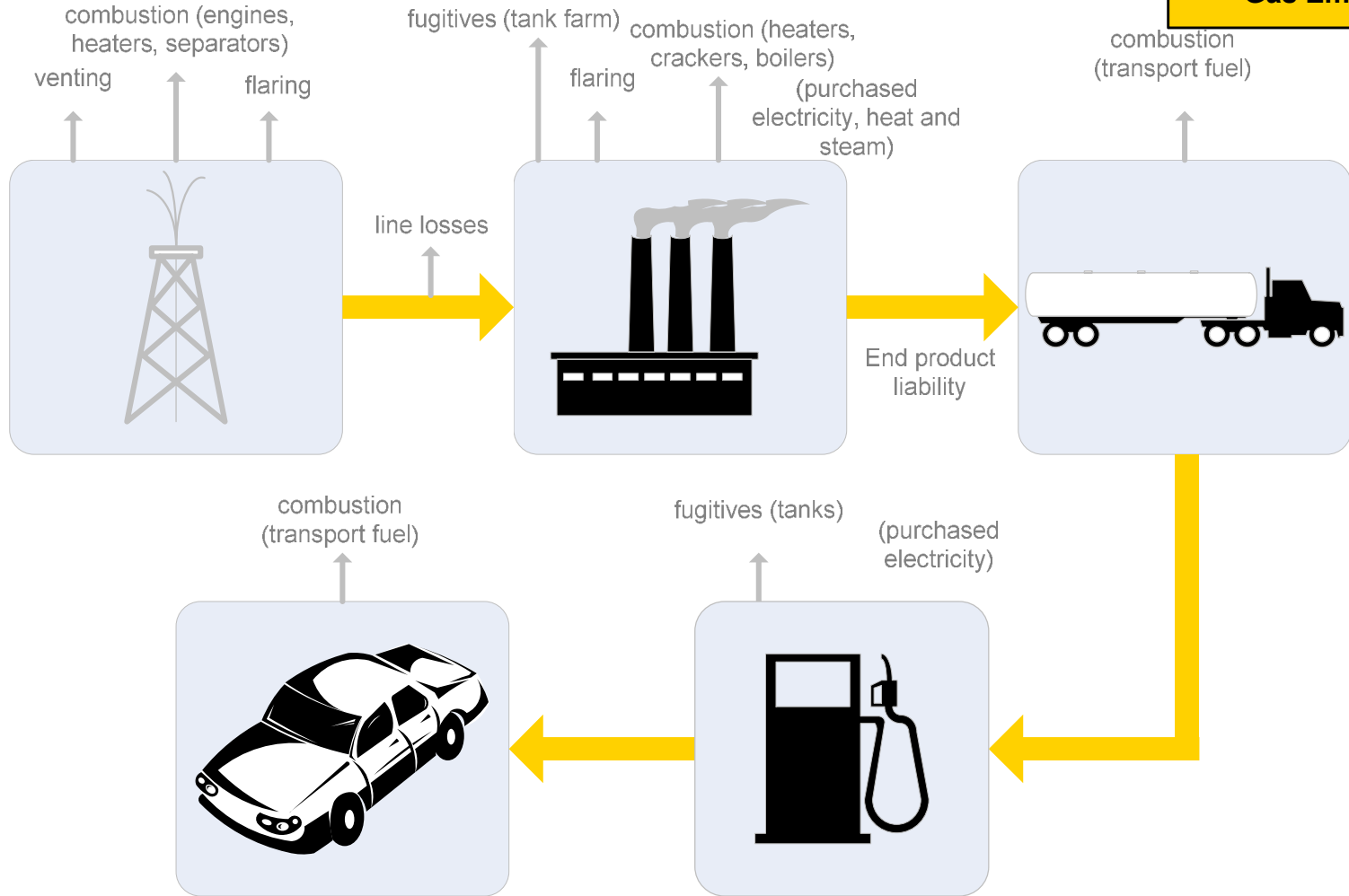
Figure 9: GHG EMISSIONS IN 2009, By Source: Goldman Sachs Sustain Report, 21 May 2009

## Carbon footprint

The term “carbon footprint” is commonly used to represent an amount of greenhouse gas emissions (measured in units of carbon dioxide) produced by people, companies or industries. A carbon footprint is a key measure used to assess and monitor environmental impact.

# Complexities of quantification

**Quantify  
Greenhouse  
Gas Emissions**



# Identify Available Options



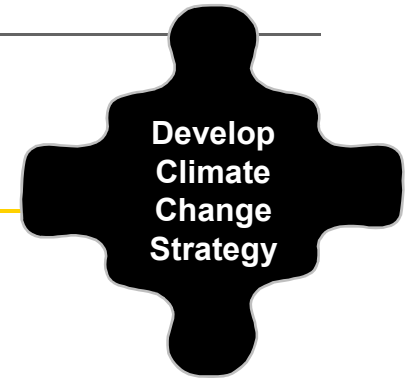
Identify Available Options

Risk Response	Examples
Reduce	<ul style="list-style-type: none"><li>▶ Mitigate risk by reducing current greenhouse gas emissions</li></ul>
Avoid	<ul style="list-style-type: none"><li>▶ Consider and attempt to avoid carbon risk in any future investment</li></ul>
Transfer	<ul style="list-style-type: none"><li>▶ Divest high risk assets or seek equity partnerships</li><li>▶ Participate in emissions trading schemes</li></ul>
Exploit	<ul style="list-style-type: none"><li>▶ Take advantage of opportunities</li></ul>
Accept	<ul style="list-style-type: none"><li>▶ Based on the level of carbon risk or current controls, accept the level of risk</li></ul>

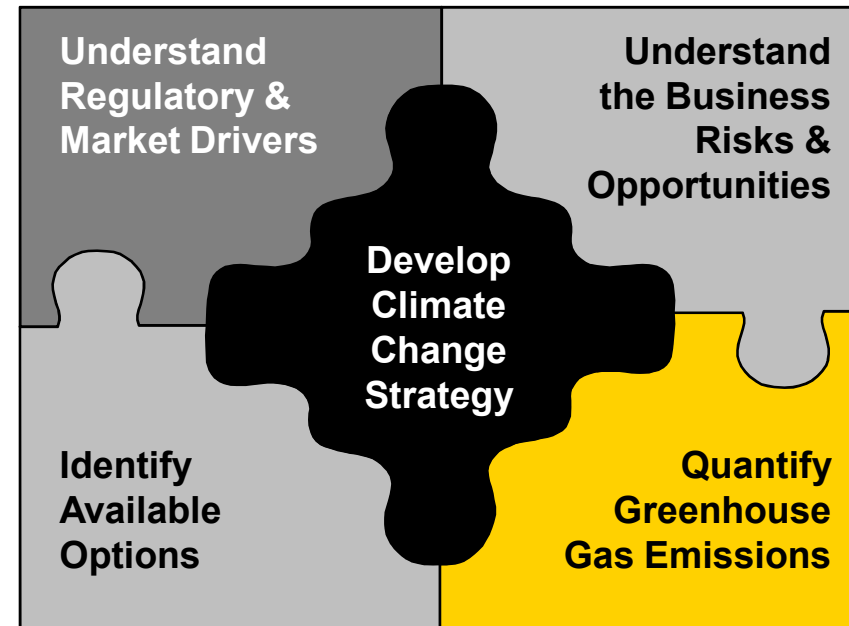
As with any business risk, there a number of ways for a company to respond to its exposure to climate change. For example, it can: **reduce, avoid, transfer, exploit** or **accept** risk.

# Develop Climate Change Strategy

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Based on an understanding of regulatory and market drivers and quantifying greenhouse gas emissions you can develop and implement strategic options focused on the key business risks and opportunities



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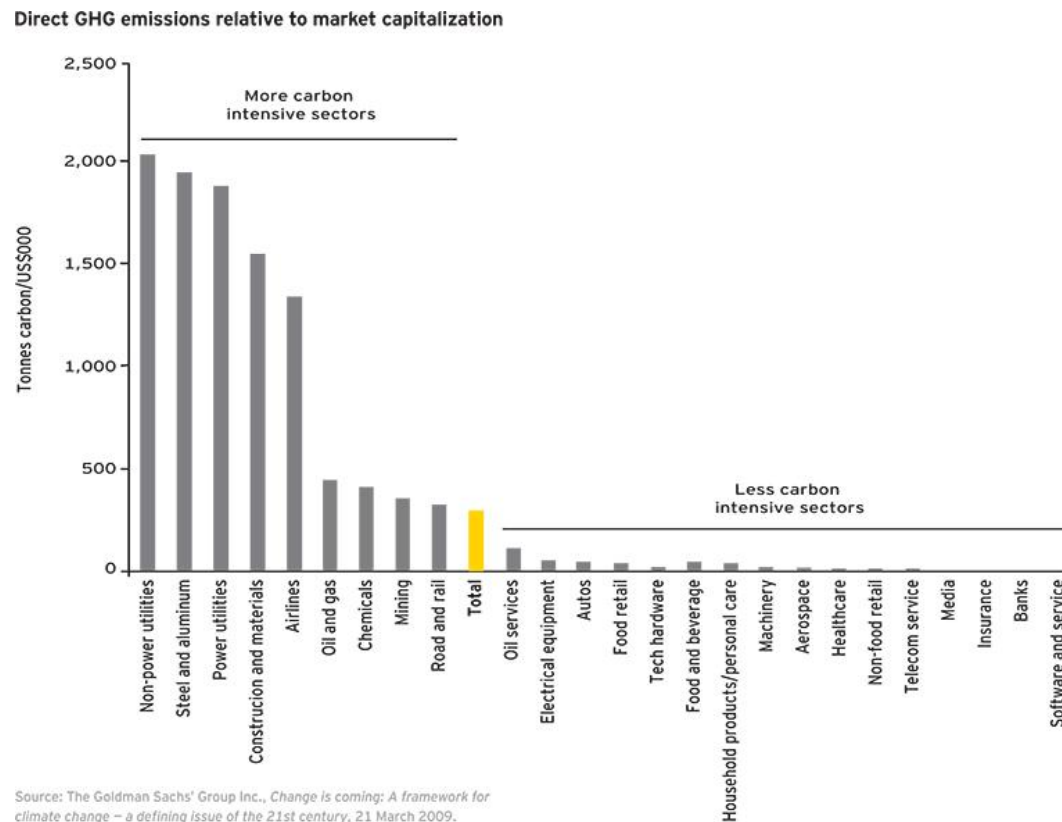
# How are businesses responding?

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- ▶ Responses we have seen from our clients:
  - ▶ Including climate change risks in corporate risk register
  - ▶ Want to understanding exposure to existing and emerging climate change regulations and policy instruments
  - ▶ Quantification of GHG emissions - voluntary carbon footprint or facility based inventory for regulatory purposes
  - ▶ Education and awareness to raise the profile and new roles and responsibilities to manage climate change
  - ▶ Focus on cost savings and revenue generation - particularly in recent times
  - ▶ Operational changes such as new systems and processes for managing climate change risk or quantifying impact
  - ▶ Redesigning products and services taking advantage of new markets

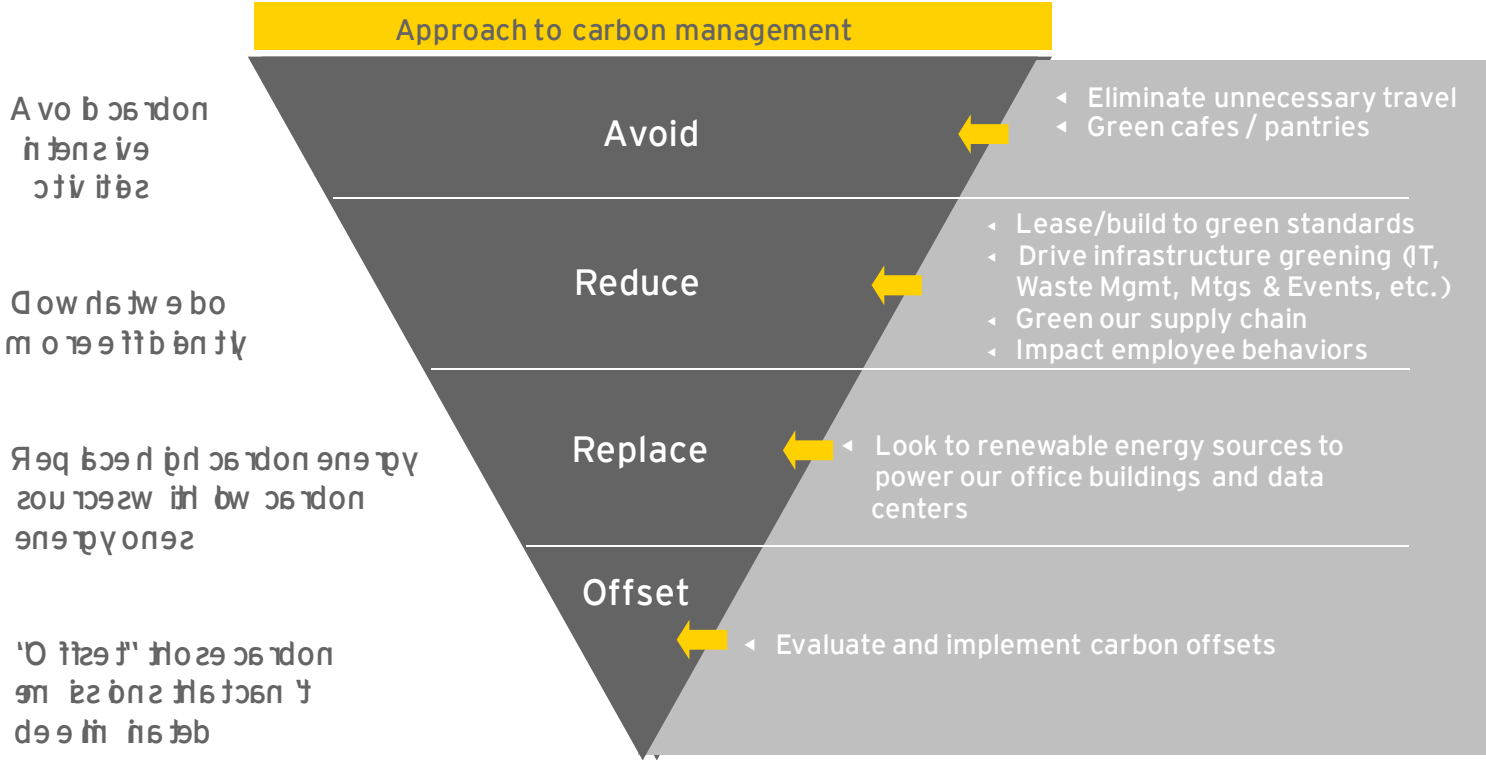
# Industry considerations

- ▶ Some industry sectors are more advanced in their response than others - ultimately all businesses will need to consider their response to climate change



# Example: Defining a governance structure and carbon strategy

- ▶ Board-level oversight is common due to increasing regulatory impact and awareness of climate risks
- ▶ Companies are responding by defining a carbon strategy, which typically considers the following approaches to carbon management:



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# Summary

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- ▶ Provided an update on the regulatory context of climate change
- ▶ Discussed how climate change is changing the business landscape
- ▶ Introduced Ernst & Young's framework for developing a climate change strategy
- ▶ Provided insight into how companies are responding

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# Appendix

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# What is climate change?

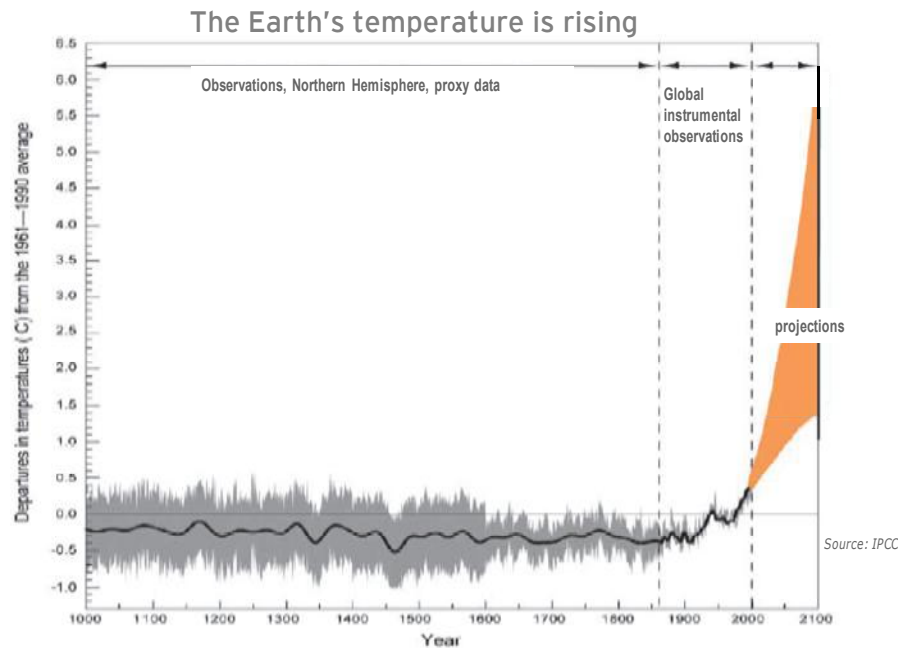
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The long-term change in weather patterns as a result of increases in the Earth's temperature

Changes in weather patterns includes temperature, precipitation, humidity, wind and seasons all of which shape natural ecosystems, and the human economies that depend on them. A change in climate can affect:

- ▶ Where and how people, plants and animals live
- ▶ Food production and pollination
- ▶ Availability of water for drinking and irrigation
- ▶ Human health and living conditions

# Is climate change really happening?



The world's climate is changing and will continue to change at rates unprecedented in recent human history. The impacts and risks associated with these changes are real and are already happening in many systems and sectors essential for human livelihood, including water resources, food security, coastal zones and health

- ▶ Warming during the past 100 years was 0.74C, with most of the warming occurring in the past 50 years. The warming for the next 20 years is projected to be 0.2C per decade.
- ▶ The world faces an average temperature rise of around 3°C this century if greenhouse gas emissions continue to rise at their current pace and are allowed to double from their pre-industrial level.
- ▶ Continued greenhouse gas emissions at or above current rates would cause further warming and induce many changes in the global climate system during the 21st century that would *very likely* be larger than those observed during the 20th century.

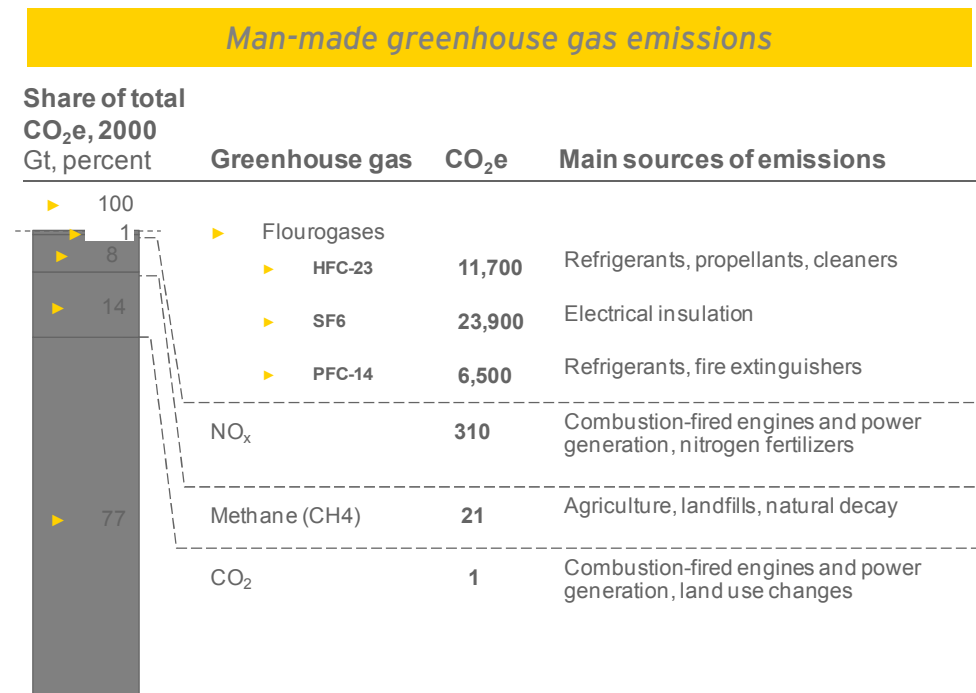
# What is causing climate change? - the 'greenhouse effect'

Life on earth depends on energy from the sun. About 30 percent of the sunlight that beams toward Earth is deflected by the outer atmosphere and scattered back into space. The rest reaches the planet's surface and is reflected upward again as a type of slow-moving energy called infrared radiation.

The heat caused by infrared radiation is absorbed by "greenhouse gases" (GHGs) such as water vapor, carbon dioxide, ozone and methane, which slows its escape from the atmosphere.

Although greenhouse gases make up only about 1 percent of the Earth's atmosphere, they regulate our climate by trapping heat and holding it in a kind of warm-air blanket that surrounds the planet.

Therefore, more greenhouse gases means more trapped heat - this phenomenon is what scientists call the "greenhouse effect."



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# Thank you

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# Climate Change and Sustainability Services

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