SUSTAINABLE FINANCE GENEVA

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Emissions Markets Post Copenhagen: Opportunity and Risk

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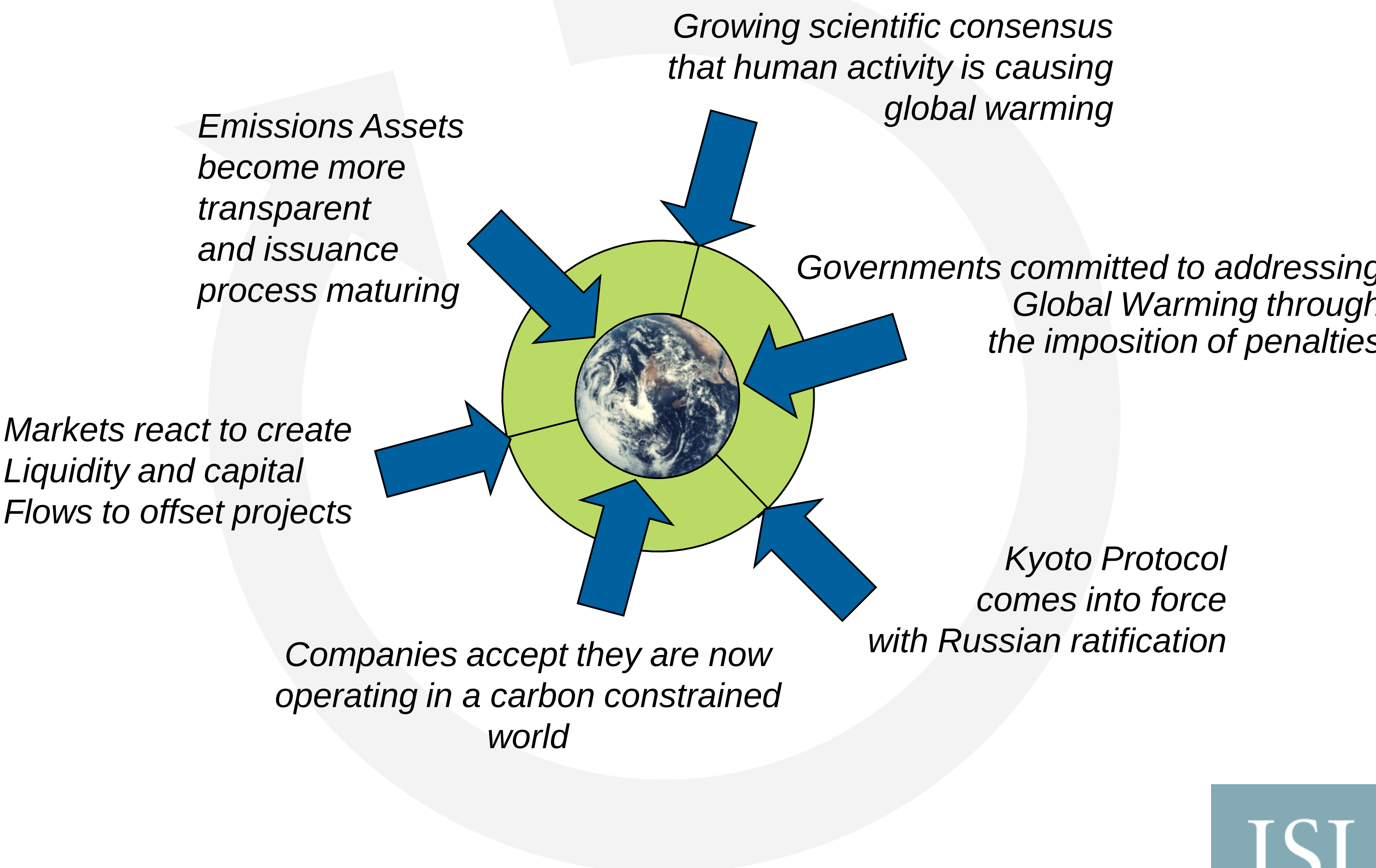
Consensus on Global Warming

A **convergence** of factors creates a significant investment **opportunity** in the Carbon Emissions area:



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Market Development Post Copenhagen

- The **European Union Trading System** is the key global market.
  - **75% of global market** value and 65% of volume
  - Volume **increased 83%** in 2009 despite lower price
  - Accepts international project credits

- A market **post-2012 is a certainty**
  - Pressure to address climate change unabated
  - EU ETS is established and **legislated indefinitely,** Phase III runs 2012 to 2020
  - Numerous new markets in various stages of development
  - Deutsche Bank says there are **270 climate legislative policies** globally

- What the **international structure** will be is **unclear**
  - Post-Kyoto regime for offset credits still subject to negotiation
  - **Forum for discussions will change** to reduce complexity
  - Negotiable positions exist on key issues (29 countries agreed to the accord including US, China India and Brazil)
    - consensus established **around 2°C increase target**
    - Adaptation funding for emerging markets agreed in principle – **Africa Wins**
    - Reduction commitments from developed economies TBD
    - Intensity reduction targets for developing economies TBD
- **US is the big uncertainty**, but
    - Already has two cap and trade markets (SOx/NOx) and RGGI
    - EPA is moving on regulations independently from international regime
    - Shareholder pressures continues to grow change

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Investment: Risk and Opportunity

- Risks:
  - Trading in new asset classes requires **new skill set** for investment managers
  - Follow on **impact on equities** of pricing of environmental externalities
  - **Operational cost** changes: power generation, industrial operations, transport
  - **Forum shopping:** optimization by location in geography with lowest compliance costs
  - **Distorted competitive landscape** due to legislation and government attempts to influence winners and losers
  - Regulatory uncertainty
- Opportunities:
  - Macro theme: shift to lower carbon economy will cause **creative destruction** resulting in new investment opportunities
  - Significant **public capital** being put to work
  - **Risks are misunderstood** and, hence mispriced creating possibility of outsized returns.
  - **Diversification** necessary to manage risk

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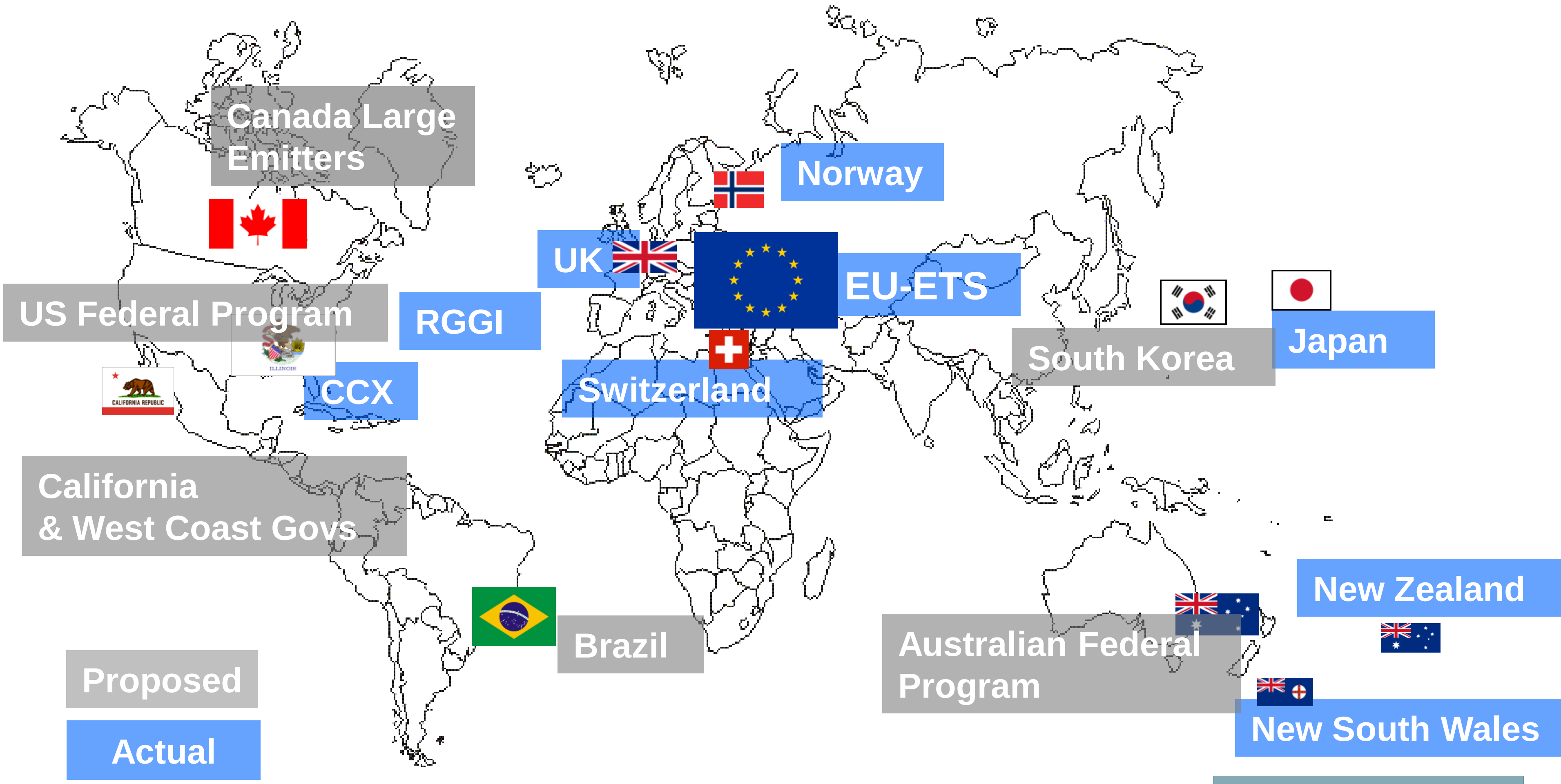
Markets for Emission Credits



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Emissions Asset Types

- **Allowances**
  - A permit for the right to emit a ton of carbon
  - Essential characteristic of “cap and trade” schemes
  - Most important allowance is the European Allowance (“EUA”)
- **Project Credits**
  - In lieu of allowances, offsets provide a safety valve in cap and trade systems
  - Creates effective link between trading systems
  - Most important credit is the Certified Emission Reduction (“CER”) under Kyoto regime
  - Issued to project owners by UNFCCC
  - Trade in a primary and secondary market
- **Commoditized**
  - All gases measured in carbon equivalents
  - Essentially fungible for compliance purposes

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Return via Direct Investment in Projects

- The cost of reducing emissions in emerging markets projects is less than **€ 4 per MT**

- **Direct investment** in projects provides the possibility to capture the value spread to the much higher market price in the EU ETS or in voluntary markets

- This spread is available only to those who can **originate** good projects and **manage the related risks**

- **Opportunities** are still plentiful

  - **High return projects** still need capital across geographies
  - Low hanging fruit and large projects no longer dominate
  - **Programmatic** CDM and **forestry** rising

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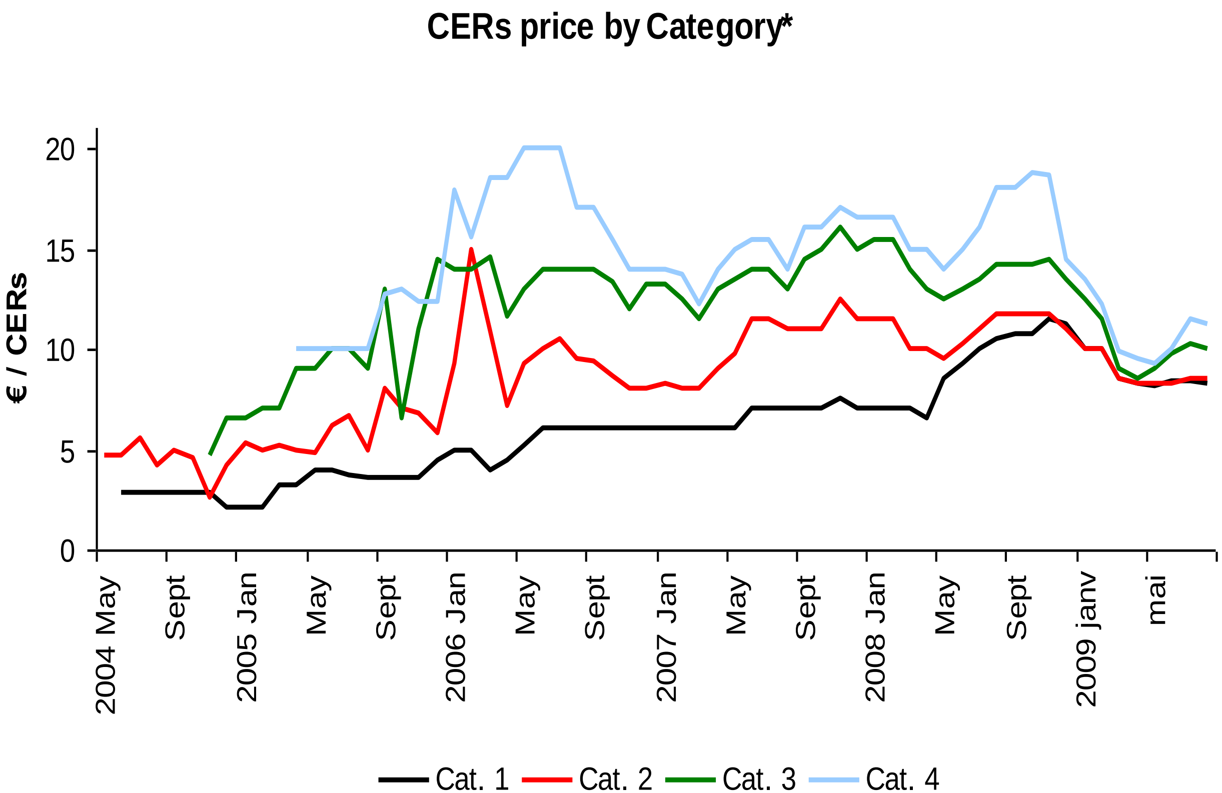
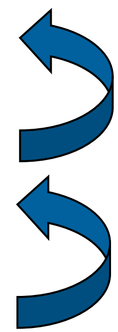
Return via Project Risk Assumption





Buying CER's in lower category and selling as a higher category will create value for those who have access to those CERs and who can manage the risks

* Point Carbon has divided the CERs in four categories where the buyer assumes maximum risk in category 1, and the seller assumes maximum risk in category 4
These prices do not reflect the entire market volume but only transactions that were known or reported to Point Carbon

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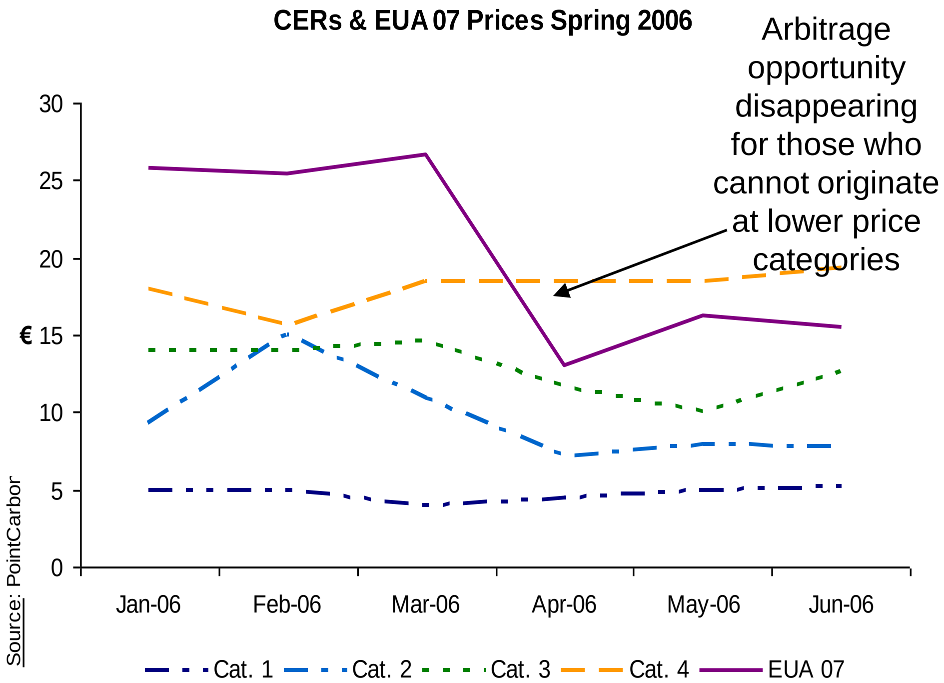
Return via trading opportunities

- Global Emissions Markets are still emerging, with extensive regulatory and inter-market inefficiencies creating arbitrage opportunities

- Examples of historical inefficiencies

  - **CER Optionality mispricing:** EUAs issued during phase one of the EU ETS expired worthless at the end of 2007. While CERs were bankable into phase two. This optionality was not priced and a significant spread between CERs and EUAs existed. Managing transaction risks, to guarantee delivery of CERs during phase one to compliance buyers generated a 60% return



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Where to from here?

- **An established market, with big potential:**
  - 2007 market value of €60 billion, 2009 market value of €100 billion
  - €300 billion investment required per year to meet climate challenge by 2030 according to UNEP
  - **mostly potential --** if emissions had the same ratio between physical market and total financial market as corn, it would be a **$4.6 trillion market**

- **Market efficiency will improve**
  - Uncertainty about post-2012 will decrease
  - **Absence of professional market regulator** the UNFCCC is a deliberative body not a market regulator
  - **Market fragmentation** both geographically and by asset type

- **Demand will increase**
  - **New entrants** into existing systems
  - Expansion of existing schemes to cover **new industries** (transport, air, chemical)
  - Expansion of existing schemes to cover **additional greenhouse gases** (ETS is just carbon)
  - **Increase** of energy consumption and emissions with global economic development

- **Supply will decrease**
  - **Tightening of caps** to achieve emissions reduction policy goals
  - **Success rates** of offset projects and access to capital will limit generation of offset credits
  - Post 2012 regimes will have stricter **quality restrictions** on project credits.

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