

# Market and Methodologies Meet Ocean Fertilization

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Ocean Iron Fertilization Symposium

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# EcoSecurities' perspective

EcoSecurities was founded in 1997 and is world's leading creator, acquirer and trader of carbon credits in the global carbon market.

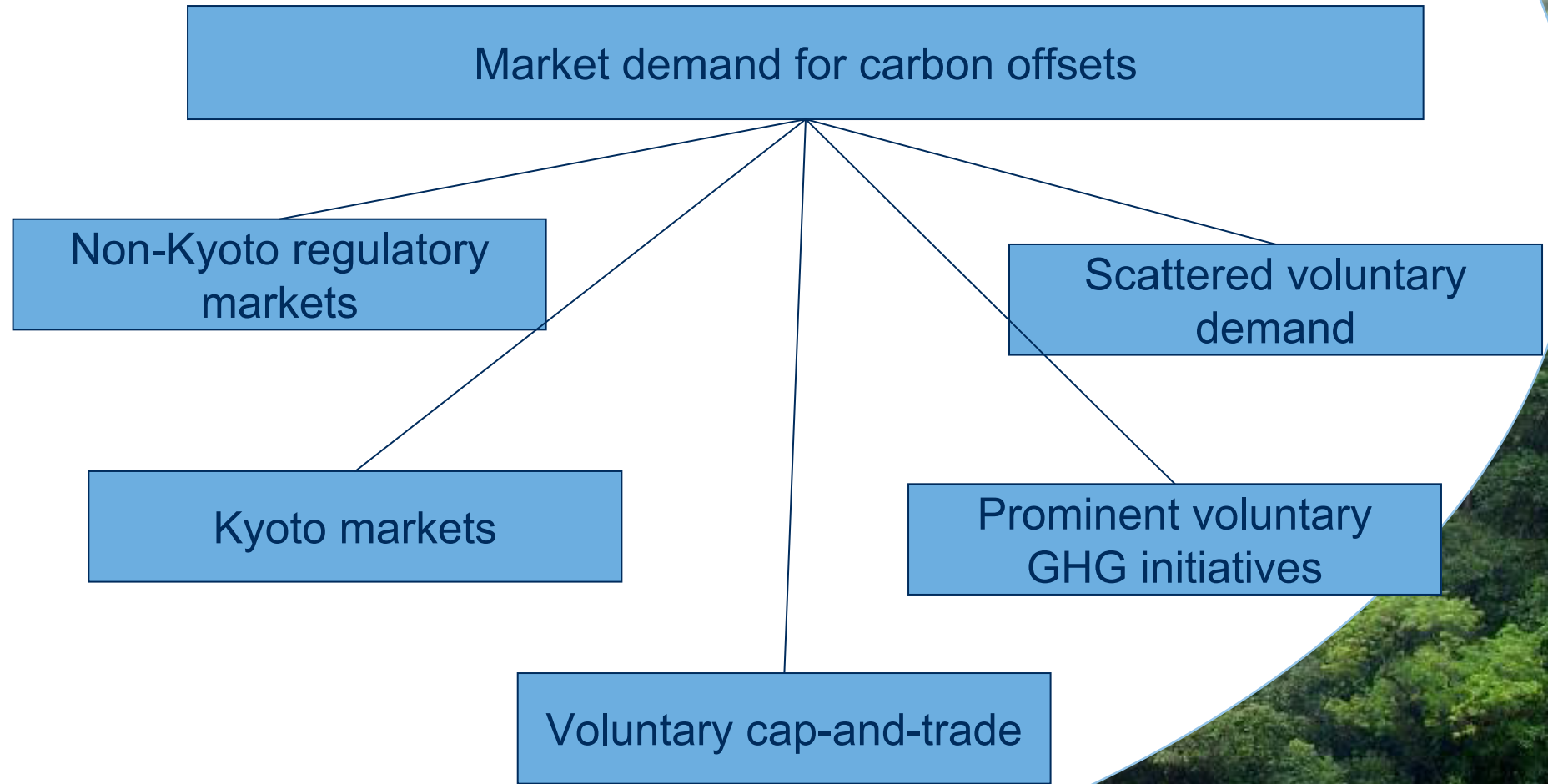
- We have 456 projects in the CDM project cycle
- Current portfolio of >185m tCO<sub>2</sub>e
- First projects to achieve registration and issuance of credits
- Offices in 21 countries
- Global Consulting Services Group focuses on corporate strategy, GHG markets, and projects

# Presentation overview

- Key market factors
  - Voluntary markets and regulatory markets
  - Where does OIF fit?
- Carbon credit projects and OIF
  - Key components of methodologies
  - Methodological challenges in OIF
- Conclusions



# The market context



# Regulatory markets

- Carbon credits are compliance instruments: carbon as a commodity
- Kyoto markets: CDM, EU ETS
  - In 2006, turned over 1.6bn tCO<sub>2</sub>e, of those 0.5bn tCO<sub>2</sub>e project based
  - Until 2012, post-2012 being negotiated
- Other regulatory markets: RGGI, AB32 (CCAR), NSW, etc.
  - In 2006, turned over <40m tCO<sub>2</sub>e, growth expected
  - Emerging and thus still being defined
- OIF does not currently access any regulatory markets
  - Ownership of carbon credits for Kyoto parties only
  - The ocean isn't part of the territory of a Kyoto party
  - Need to modify post-2012 ownership rules to allow for OIF credits

# Voluntary markets

- Voluntary offsetting for reasons of CSR and individual lifestyle choices
  - “Story” behind the project
- Market performance in 2006
  - Voluntary markets turned over 24m tCO<sub>2</sub>e, grow exponentially
  - No rigid procedural, methodological, legal framework
- Voluntary markets are small compared to OIF
  - One OIF cruise can generate Millions of tCO<sub>2</sub>e



# Importance of the public image for accessing markets

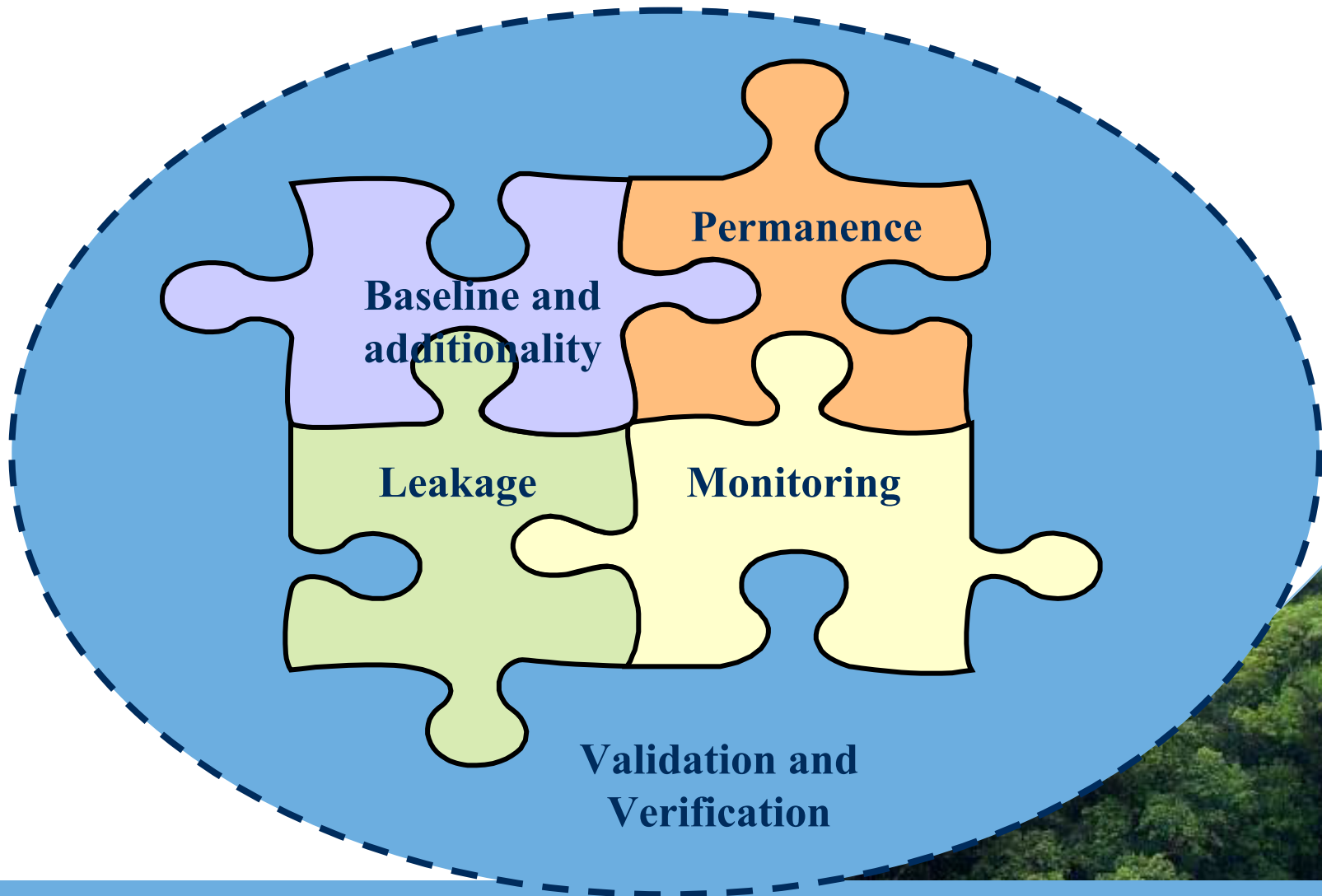
- Public image and market access
  - Demand on the voluntary carbon markets is partially driven by public image
  - Future inclusion into (new) regulatory markets will consider the public image
- OIF does not have much to offer on the socio-economic or environmental front but delivers high-quality carbon credits
- Analogue example of HFC projects under the CDM
  - Offsets are high quality (additional, measurable, etc.)
  - Huge amounts of carbon credits
  - Simple, low cost, and perception of huge profits
    - receive criticism on largely emotional terms
    - receive lower prices

# Market bottom lines for OIF

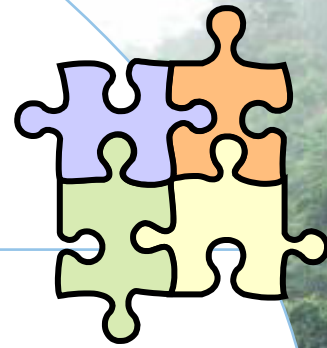
- Will regulated markets grow post-2012?
  - US participation in the UNFCCC framework?
  - Will OIF qualify for participation in future regulated markets?
    - Credit ownership a major issue for OIF
- Will growth of voluntary markets continue?
  - Will we see a public backlash against offsets generally?
  - Can voluntary markets absorb tons from OIF?
  - How will the public perceive OIF?
- Implications for the business model of project developers
  - Access to markets uncertain
  - Market size and prices uncertain
  - Market demand for OIF uncertain
- The OIF sector needs to take a strategic attitude
  - Public image is critical
  - Policy dimension of gaining access to regulatory markets



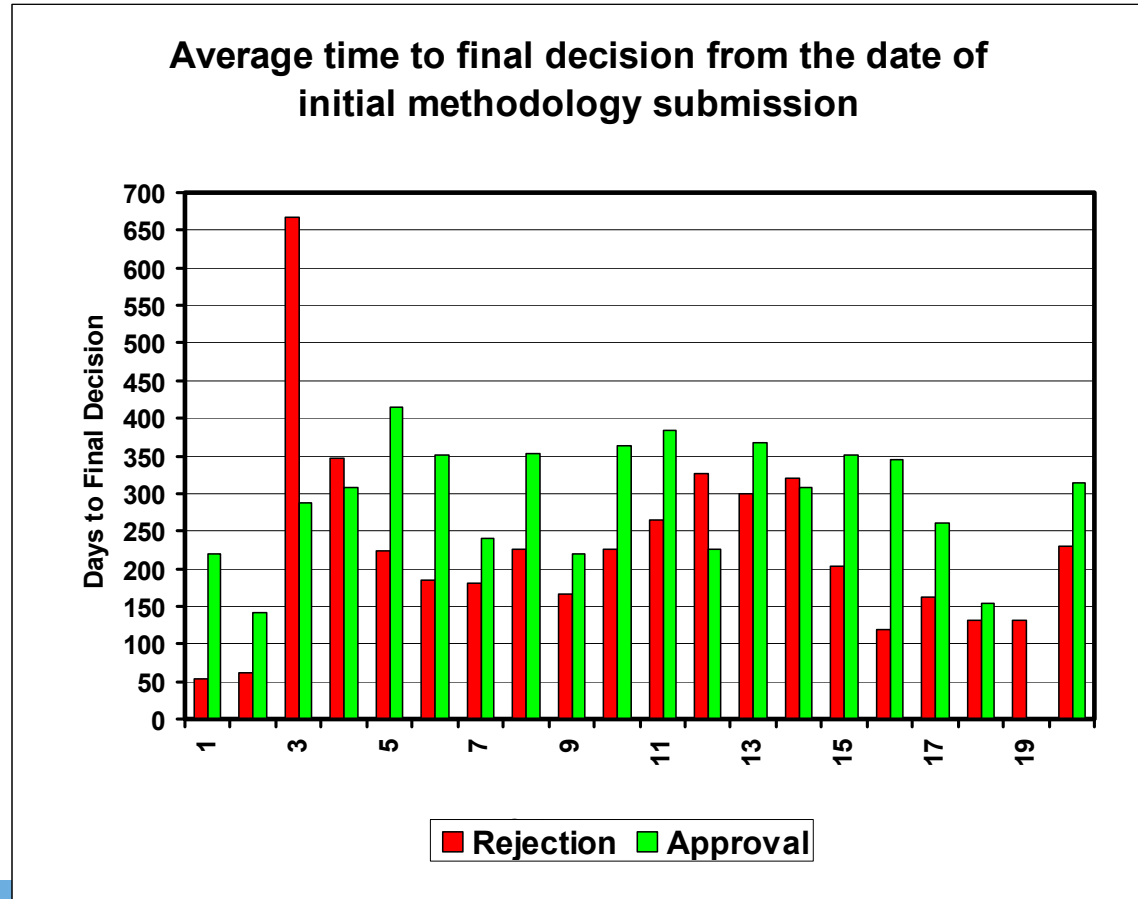
# Key components of methodologies for GHG projects

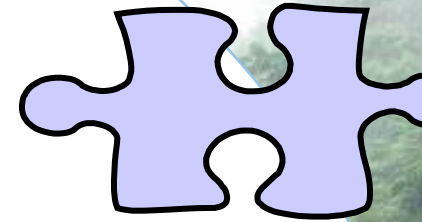


# Complexity of methodologies



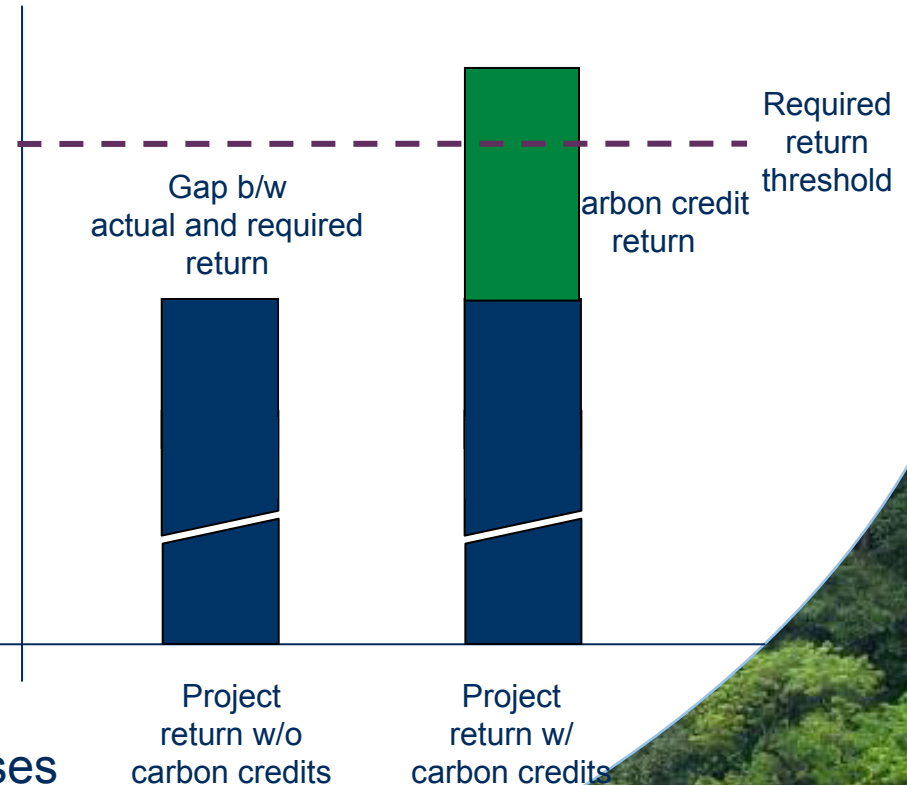
- CDM turned out quite rigorous
  - Cumbersome approval procedure
  - Methodology process as a political tool
- Chance to be more simplistic for OIF



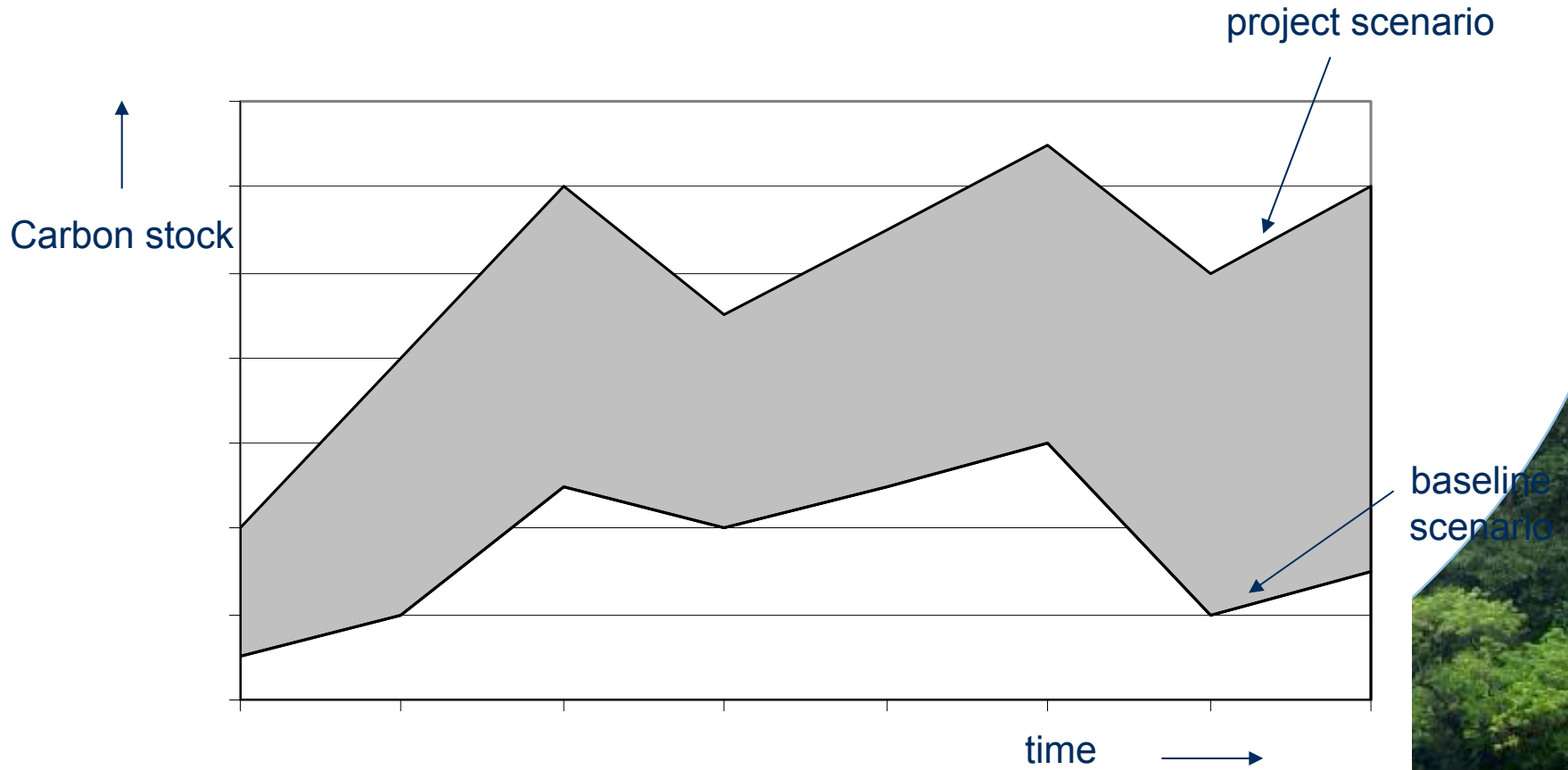
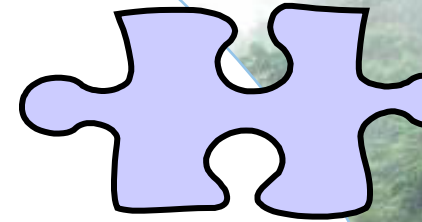


The project is not Business as Usual:

- Project overcomes barriers
  - Risk-related barriers:
    - first-of-a-kind project
    - unproven technology
    - country risk
  - Technological barriers
  - Investment barrier
- Financial additionality
  - Compare financial returns of a project with a benchmark
  - Carbon-credit cash flow increases the project return
- Additionality in OIF not complicated



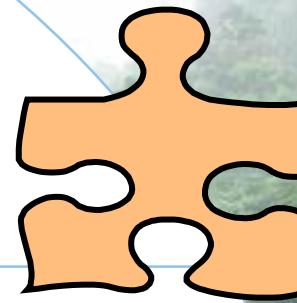
# Project baselines



# Leakage

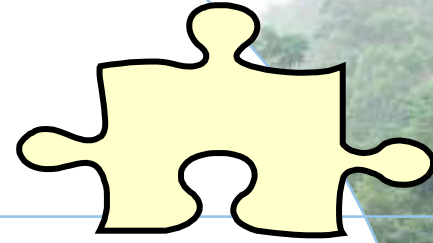


- Leakage are emissions outside the project boundary that affect the project's carbon benefit
- Leakage hard to measure because often indirect via markets
- Methodological ways to deal with leakage
  - Measure
  - Limit applicability scope
  - Discount conservatively
- Leakage sources in OIF
  - Ship
  - Production of iron
  - Dust storm after fertilization event
  - Mixing with iron-rich water after fertilization event

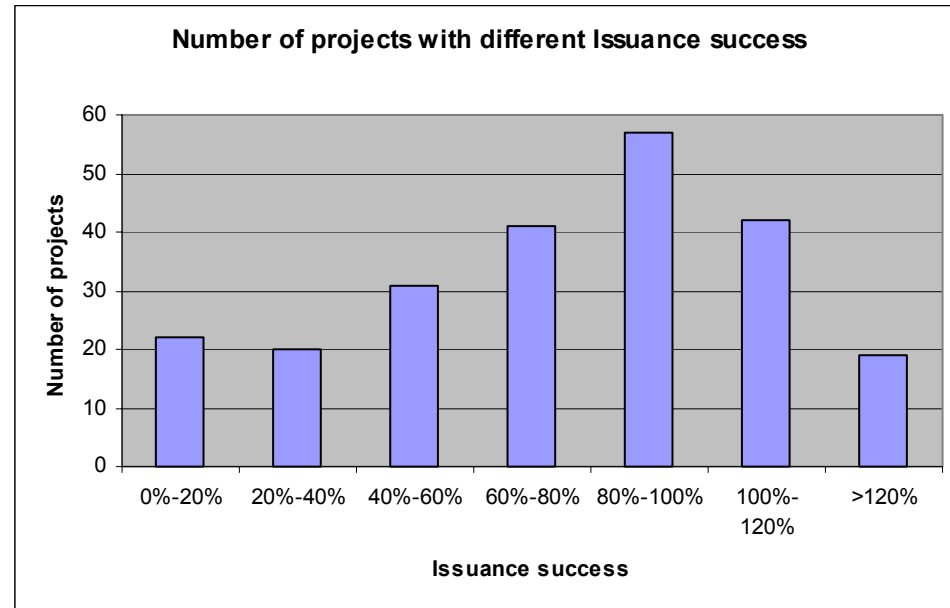


- Sinks and sources of GHGs
  - Emission reductions: fugitive gases, fossil fuels, etc.
  - Carbon storage: planting forests, OIF
- Emission reductions generally considered “permanent”
- Carbon storage not per se permanent
  - Risk of carbon reversal
  - Options to address non-permanence
    - Temporary crediting
    - Ton-year approach
    - Minimum time frame
- Permanence in OIF?

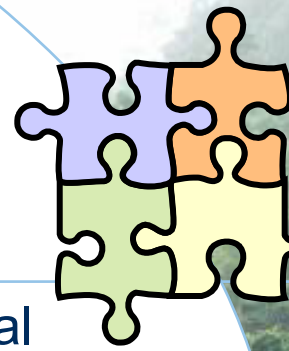




- Verification is audit of the monitoring results and procedures before issuance
- Monitoring and verification have become issues in the CDM and projects underperformed
  - PDD writers had an incentive to overstate
  - Procedural challenges in CDM
  - Problems in data collection and archiving
- Monitoring in OIF complex but likely to be done properly



# Methodological bottom lines for OIF



- Methodological challenges
  - Depends on difficult science
    - Hard to understand
    - Measurement is technologically involved
    - Difficult to find qualified auditors
  - Various leakage sources
  - Project boundary is conceptual
  - Difficult access to the site
    - Verification needs to work without on-site visit
    - No re-measurement
  - Non-permanence questions
- Simplifying methodological aspects
  - Sophisticated scientific setup
  - Baseline does not need to be modeled
  - Additionality is straight-forward

# Conclusions

- OIF faces methodological challenges
  - Difficult site access
  - Hard science behind OIF
  - Addressing permanence
- OIF faces challenges in the context of current markets
  - Future access to regulated markets uncertain
  - Voluntary market demand will depend on public image
- OIF has the potential to deliver high-quality credits
  - “Very” additional projects
  - Long-term storage
  - Numbers have the potential to change the carbon markets

# Ocean iron fertilization and carbon credits

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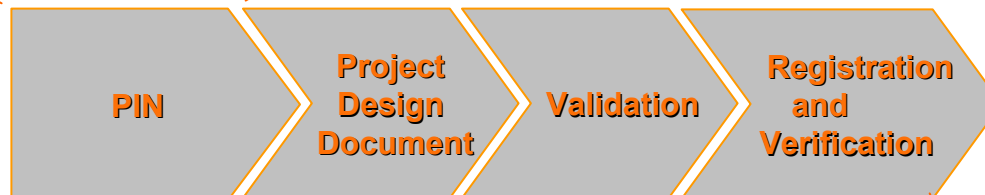
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# The GHG project cycle

## “Normal” Project



## The Carbon Project



## The Emission Reduction Purchase Agreement (ERPA)

