CO_2 Money: Paying to pollute?
Using private money to combat climate change

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KfW BANKENGRUPPE

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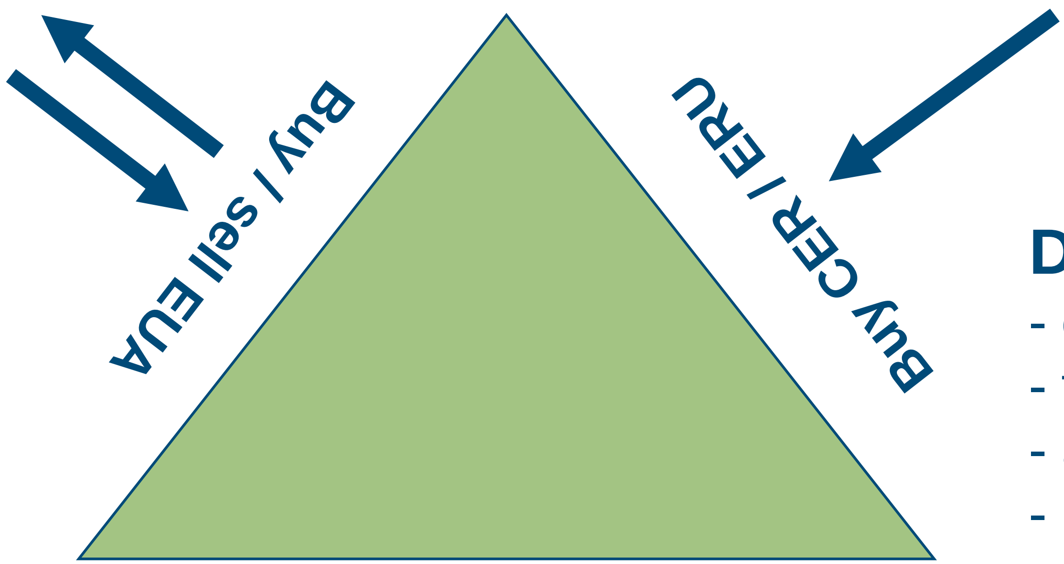
1. What is CO_2 Money?
How to reach climate objectives with least cost

- Environmental policy has used **comparable economic approaches** in the past (most prominent: SO_2 emissions in US in the 80ies)
- Economically **CO_2 money is an efficient way to realize climate policy objectives** using the flexible mechanisms CDM and JI. It clearly is a chance not a threat.
- **Historically** the fast development carbon market is very **impressive** since traded property rights – the right to cause air pollution - have been defined in 1997 only.
  - The development of **property rights for other public goods** – eg patents to protect innovations – **took hundreds of years**
  - The unit of the property right is **one ton of CO_2 emissions**
  - Despite its very recent birth the global carbon market is already **bigger than** worldwide public **development assistance** (ODA)

1. What is CO_2 Money? Options of a European compliance buyer



Internal abatement of CO2

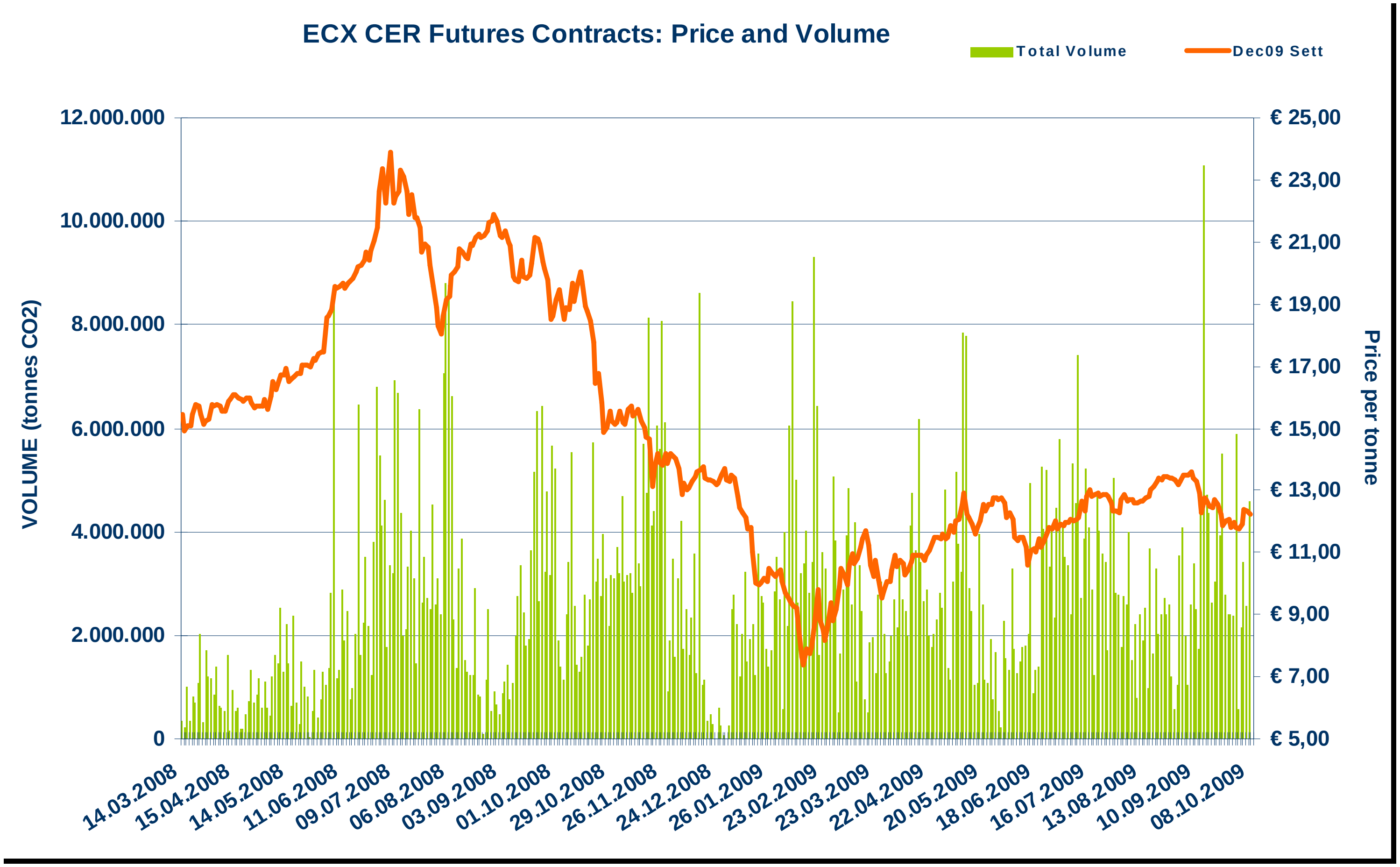
Decision criteria:

- cost savings
- transaction costs
- acess possibilities
- risks
- time horizon for implementation

…

2. The global carbon market
sCERs price development on ECX

- sCERs traded on the European Climate Exchange (ECX)
- Despite the evident volatility sCER have a real value



Source: www.ecx.eu (9 Oct.2009)

2. The global carbon market
Trends of the CDM Market

- **Dynamic growth** (annually ca. 90% since 2005)
- Particular strong growth of the **secondary market** (sCER, gCER, …)
- Specialisation / **professionalisation**

  (CO_2 Services, auctions, indices, …)
- Growing importance of a comprehensive **risk management**

  (delivery risks, financial risks, reputational risks, …)

2. The global carbon market
Demand Side of the CDM Market: Buyers

- **Corporates** (ca. 80% of the market)
  - Compliance-Buyers
    - Currently **decreasing demand** due to economic and financial **crisis**
    - Development of **EU ETS** (Extension, Eligibility)
    - Decreasing untouched **potential of internal CO2 abaments**
    - Growing importance of **risk management**
  - Voluntary compensation
    - Currently **decreasing demand** due to economic and financial **crisis**
    - Off-setting as integral part of Corporate **Governance**
    - Growing importance of reliable **Standards**

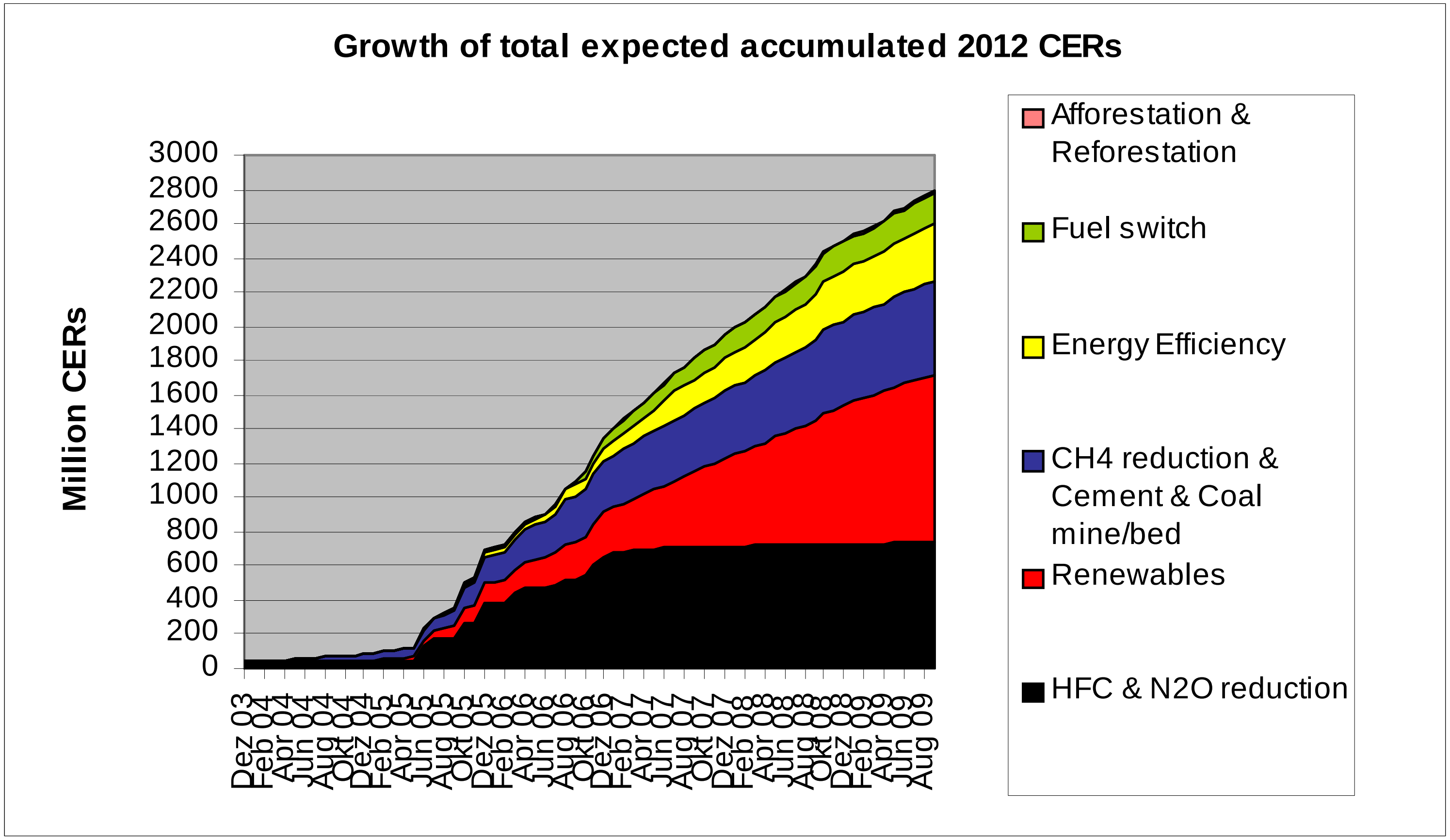
- **Countries / governments** (ca. 20% of the market)
  - Current **crisis** decreases, **Kyoto-Objectives** may increase demand
  - **Other objecives** (climate policy, external policy, development cooperation) may imply bigger demand
  - **No** European **ETS** requirements
  - Bigger sensitivity to **reputational risks** than corporates

2. The global carbon market
Supply Side of the CDM market: Projects

- **Typical projects**
  - Practically **no „low hanging fruits“** any more
  - More **renewable** and **energy efficiency** projects
  - **Investment volumina** of the projects correspond to **400% of CDM revenues**
- **Where do the CDM projects come from?**
  - Dominance of **China, India, Brazil**, Mexico
  - **Diversification premia** for non – China projects
  - JI-Market is coming (but is still less than 4% of CDM market)
- **Quality**
  - Premia for **experienced project developers** and known technologies
  - Demand for unambiguos **developmental effects** (additionality, Gold Standard)
  - **Programmatic approaches** in development

2. The global carbon market
CER supply by technology

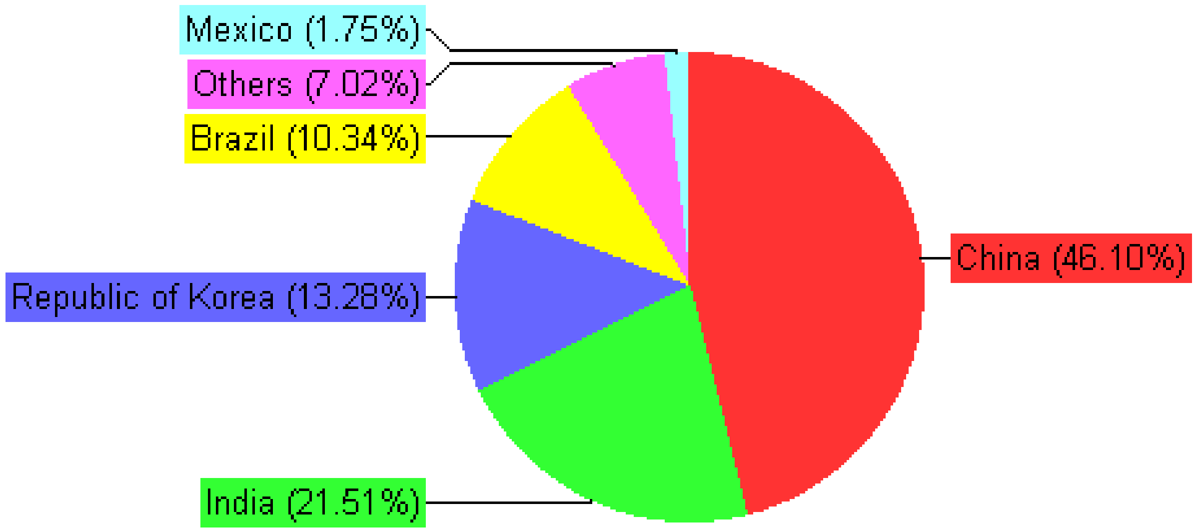
- Strong CDM-market growth → Especially in the renewables sector



Source: UNEP Risoe (Oct. 2009)

2. The global carbon market
Supply Side of the CDM market: CERs issued so far

- CERs issued so far by host country: dominated by China, India, South Korea, Brazil
- CERs issued: 334 million



http://cdm.unfccc.int (c) 09.10.2009 14:53

2. The global carbon market
Supply Side of the CDM market: Projects in LDC and Africa

- **Africa**
  - The number of CDM projects in Africa is rising
  - but from a very low level (number: 110, share: < 6%)

- **LDC**
  - The Number of CDM projects in LDCs is rising, too
  - But from an even lower low level (less than 50, i.e. < 3%)

3. Market Imperfections I

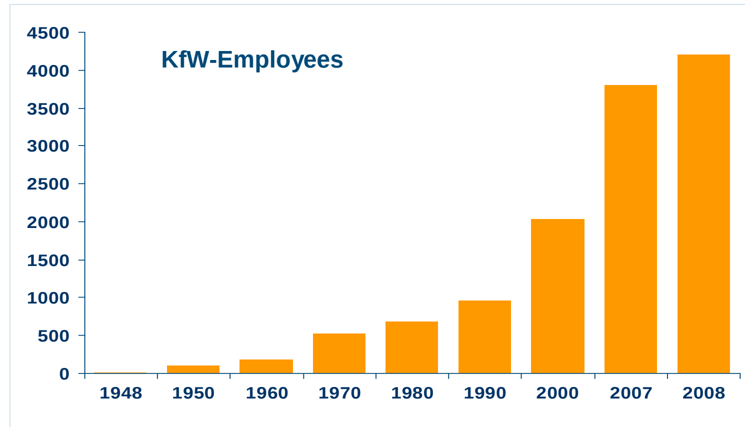
- **The CDM Market is highly <u>concentrated</u>**
  - The CDM Market is even more concentrated than **Foreign Direct Investments**
  - Concerning Issued CER the combined market share of the **big six** is 93%, even concerning the number of projects their share is still 80%
  - The share of **LDC** projects and **African** projects is particularly small
- **Currently there is a lot of <u>uncertainty</u> in the CO_2 market**
  - Only a short time ahead of **Copenhagen** the future of the CDM has not yet been clarified
  - It is unclear how much and which certificates will be allowed for compliance buyers in phase 3 of the European Emission Trading Scheme (**EU ETS3**)
  - In the United States, too, it is unclear how much and which certificates will be allowed for compliance buyers. Furthermore even the extension of the **US ETS** has to be specified
  - In the absence of a global ETS it is not known when and how different ETS will be **linked**

3. Market Imperfections II

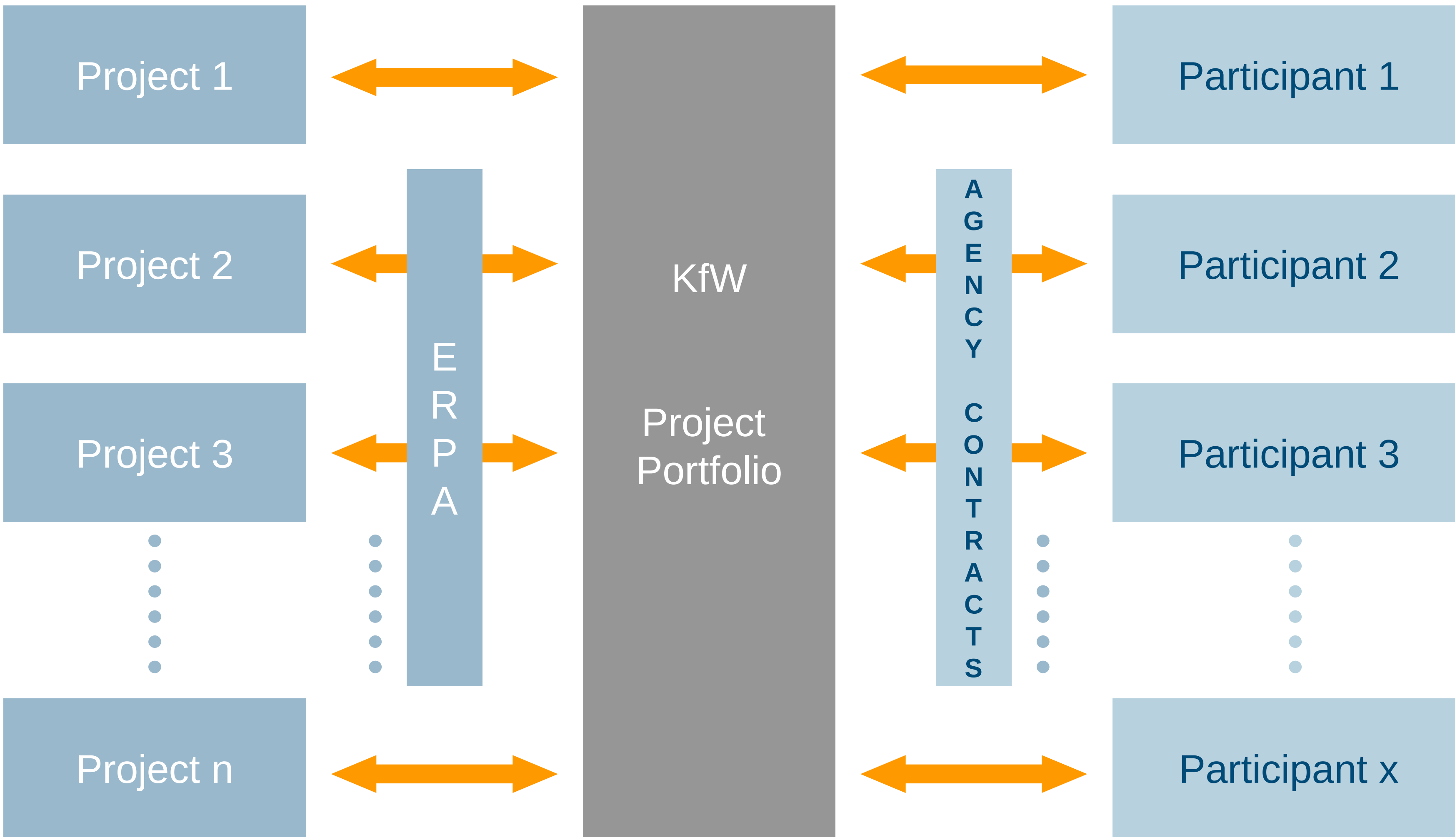
- **Innovation is needed but the CDM incentives to innovate are limited**
  - Combating climate change is a challenge that requires **fast development, transfer, diffusion and (worldwide) implementation of technologies**
  - The Credibility of CDM inherenly asks for **reliablity** and **continuity** – two aspects that are likely to slow Innovation
  - **Innovation is a public good**, also in the CDM market. E.g. the development of new methodologies or of programmatic approaches is expensive and risky but not rewarded from an investor´s perspective
- **Preferences**
  - Preferences are **not purely economic**, eg there are political preferences due to external policy, development policy, external trade, industrial policy, … and **changing**
  - **European** climate policy leads to **specific preferences** and needs european **answers**
- **Timing**
  - Significant **time lag** between a) **current demand** (short term) and b) the planning and setting up of **projects** (medium tem) or even the **mitigation actions needed** for scientificreasons (long term)

4. KfW Carbon Fund
KfW Bankengruppe in brief

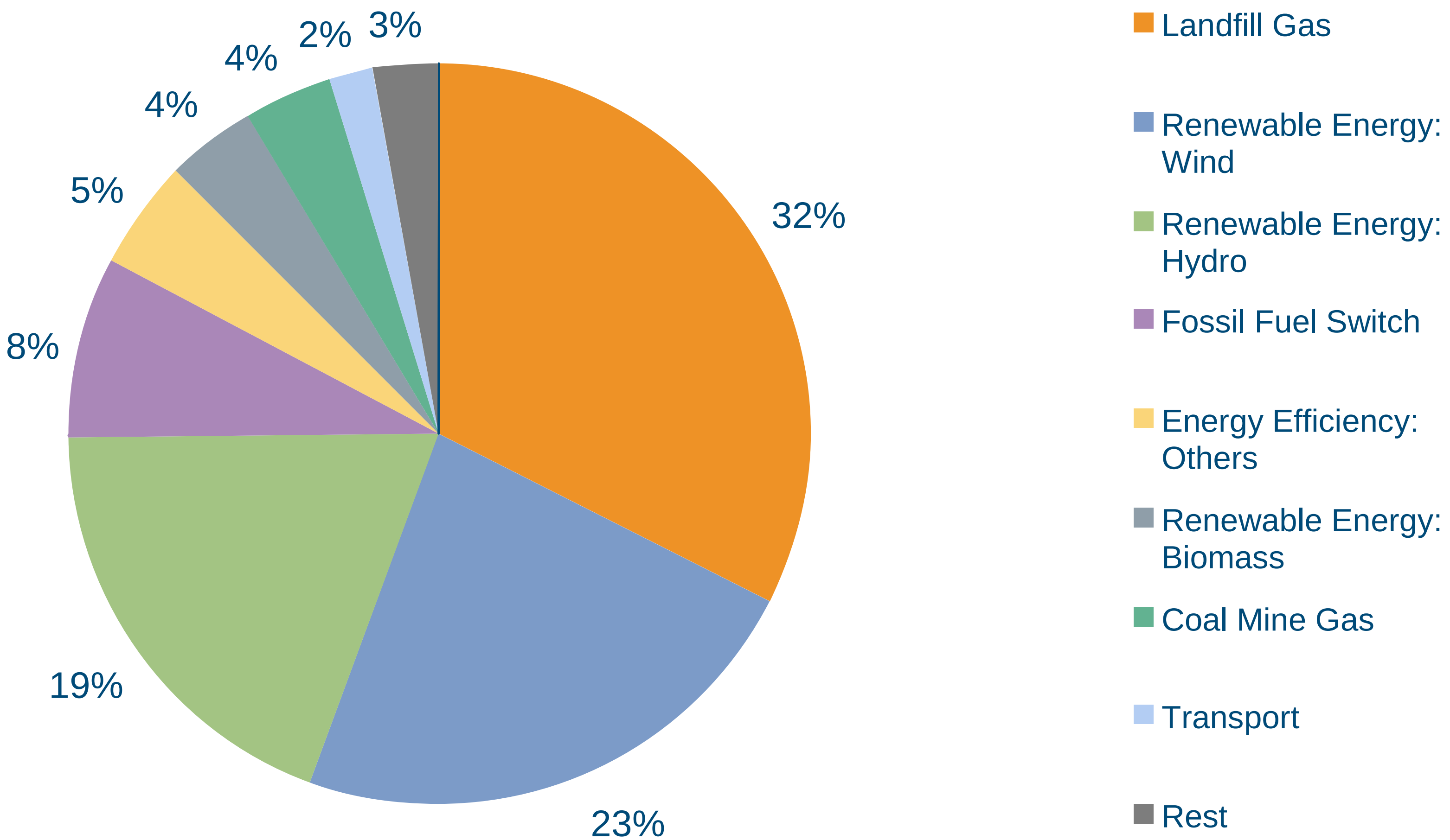
- Promotional bank of the Federal Republic of Germany
- Founded in 1948
- Shareholders: Federal Republic of Germany (80%), German federal states (20%)
- Headquarters: Frankfurt am Main; branch offices: Berlin and Bonn
- Foreign representations: Brussels and around 60 offices and representations worldwide
- Balance-sheet total at the end of 2008: EUR 395 billion
- Rating: AAA/Aaa/AAA



4. KfW Carbon Fund
KfW Carbon Fund - Contractual Structure



4. KfW Carbon Fund
Acquired primary market certificates
by sector (as of 30th of June, 2009, total: 22 mio CER/ERU)



5. Market development and public banks

- **Idea**
  - **Make** the global carbon **market ready to use** for climate policy
  - **Support innovations** for market deepening and market widening
  - Look for **similarities with other markets**, eg with the commodities markets
  - Need for **promotional/development** banks as pioneers
  - Support the role of **commercial banks** as they will bundle demand
- **Market imperfections are the central rationale for KfW`s activities in this field**
  - Facilitate the access of **SME** to the global carbon market
  - Quantifify, manage and eventually take specific **risks** of the carbon market
  - Mitigate **regulatory risks** (eg Postkyoto, ETS3) by providing **liquidity** / creating **demand**
  - Support **high quality projects** which are often small
  - Develop new and **innovative approaches**, programmatic approaches

5. Market development and public banks KfW activities I

- **2004**
  - Start with **KfW Carbon Fund** to develop the carbon market
- **2007**
  - **EIB KfW Carbon Programme I**

    (focus on SME, Advance Payments, delivery guarantee)
  - **EUA sales** for the German Government
- **2008**
  - **Post 2012 Carbon Fund** (together with i.a. CDC, private fund manager)
  - German **PoA Support Center**
  - Start of **Government Purchase Programs**

5. Market development and public banks KfW activities II

- **2009**
  - Development of a **Portfolio of Programmes of Activities** (PoA), blueprint book
  - **EIB KfW Carbon Programme II** (focus on LDC, PoA, eligibility guarantee)
  - Extension of **Government Purchase Programs**, defining our role in auctioning
  - Consultant to the German government in **Copenhagen**

- **2010?**
  - **Mainstream** climate change aspects into KfW´s other activities
  - Reduce **uncertainty and risks** for projects and certificate buyers
  - Support new **innovative approaches**
  - Strengthen the fruitful **franco-german cooperation** in the carbon market
  - Organize a **European platform** to react to the climate change challenge

Thank you for your attention!

For more information: www.kfw.de/carbonfund

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