Developing Internal and External Offset Projects
Jason Lee, Solvay Energy Services

04/03/2013
Solvay experience in European ETS

- ETS trigger strong MRV at each Solvay plant under ETS.
  - Robust Monitoring is essential for action on GHG emissions as well as industrial performance.
  - MRV allow clear understanding of Abatement cost Within Solvay sites.
- Action plan and at different ETS price levels:
  - 1) industrial improvements at ETS plant – technology deployment, energy efficiency
  - 2) operational arbitrage decisions (eg fuel switch)
  - Identification of Internal emission reduction projects
Solvay Energy Services to take advantage of offset opportunities

- ETS and Organizational Innovation: SES
  - In Solvay, ETS also meant Organizational Innovation and Partnership:
    - Solvay Energy Services a new specialized team in Carbon and Energy;
    - Partnership to complement in a strategic way our resources

Solvay joins forces with Société Générale to add CO₂ trading and risk management know-how to its technical competence: unique combination of industrial and financial expertise

Solvay partners with Société Générale in 2006

Top player in CO₂ markets

Solvay’s emission reduction projects portfolio and carbon trading activities expanded outside the Solvay group; in the period 2006 - 2012:

~ 680 Mt of CO₂ traded worldwide (CER+ERU+EUA)

~ 7% market share worldwide
Solvay experience with offsets

• Offsets offer proactive companies opportunities to reduce emissions profitably outside the ETS plants:
  • Solvay used CDM and JI to make reductions not only at Solvay plants, but also at 3rd party plants.
  • EU-ETS platform enabled participants to hedge and trade in an efficient manner.
  • Diversified participants provided liquidity in the market
Solvay, main internal reduction projects

Share of emission reductions by project:
- South Korea / Onsan: 25%
- France / Chalampé: 55%
- Brazil / Paulínia: 16%
- France / Salindres: 4%
- Reduction non monetized: 25%

About 16 million CER/ERUs year

France / Chalampé:
- Abatement facility
- Achieved in 1998
- Upgraded in 2009 (JI)

France / Salindres:
- Abatement facility
- Achieved in 2008 (JI)

South Korea / Onsan:
- Abatement facility
- Achieved in 2006 (CDM)

Brazil / Paulínia:
- 2 abatement facilities
- Achieved in 2006 & 2007 (CDM)
Solvay Carbon Offset project facts

Energy efficiency in cement plant, China

- **62 External CDM projects**, generating ca 7.5 M CERs/year

Cement Raw materials Change, Ethiopia

- **4 Internal CDM projects**, generating ca 14 M CERs/year

Biomass from bagasse, Mexico

- **2 Internal JI projects**, generating ca 2 M ERUs/year

Wind, Inner Mongolia, China

- **1 Internal Offset project for California Cap&Trade**, generating ca 120k ERs/year
Solvay committed to sustainable growth

EU ETS Market
- **Objective:** 8% reduction in CO₂ emissions from 1990 levels in the EU at minimal cost
- **Players:** 5 industrial sectors
- **Carbon currencies:** EUA, CER, ERU

Kyoto Protocol-derived
- **Objective:** 5.2% drop all greenhouse gas emissions from 1990 levels in developed countries
- **Flexibility mechanisms:** CDM, JI, International Emission Trading (ETS)
- **Carbon currencies:** AAU, CER, ERU

Solvay is committed to further reduce greenhouse gas emissions by 10%