The Second Annual Carbon Management & The Law Conference: Climate Change Issues for 2011

Thursday, February 10, 2011

William Mitchell College of Law

A Corporate Perspective

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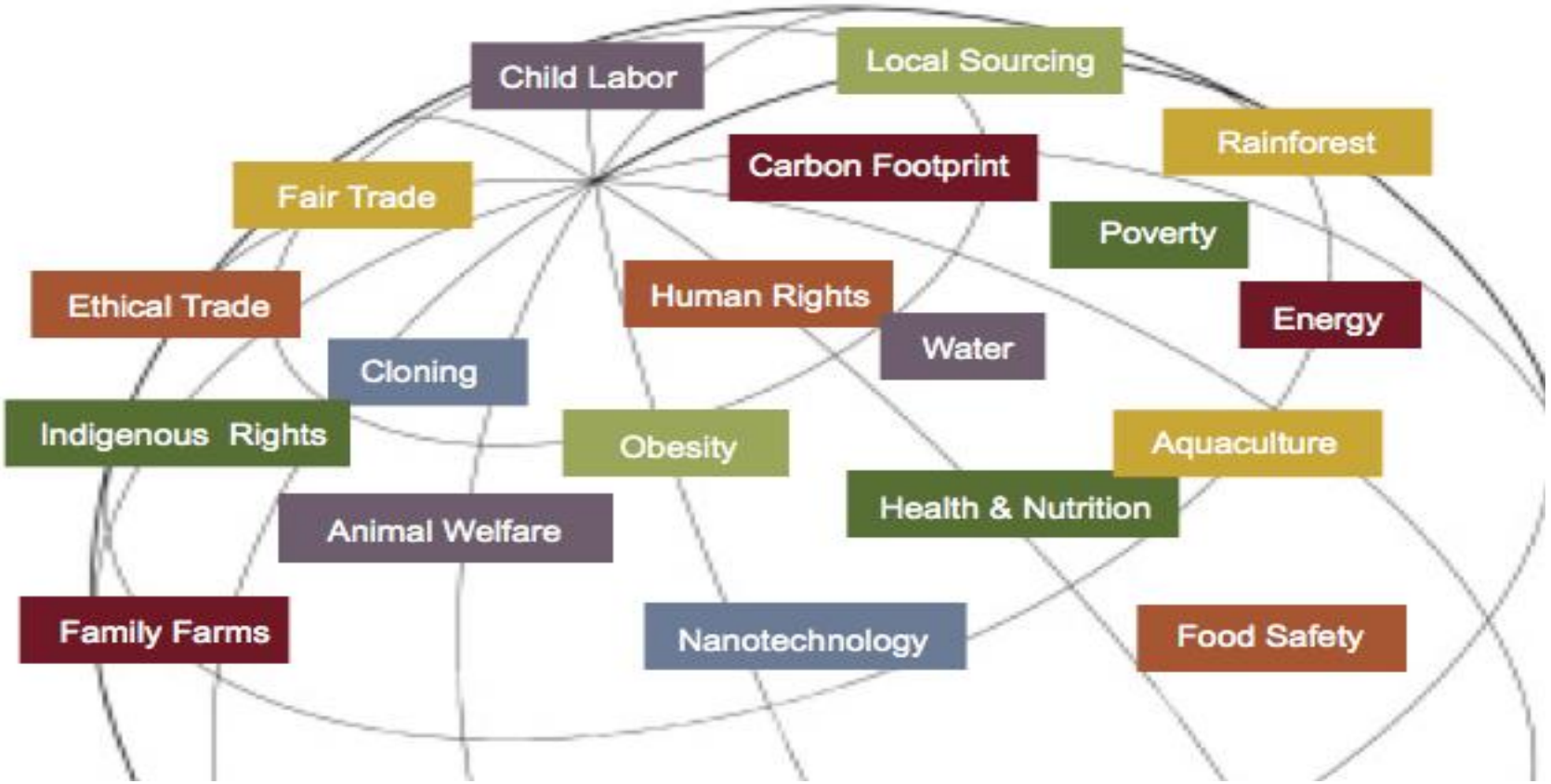
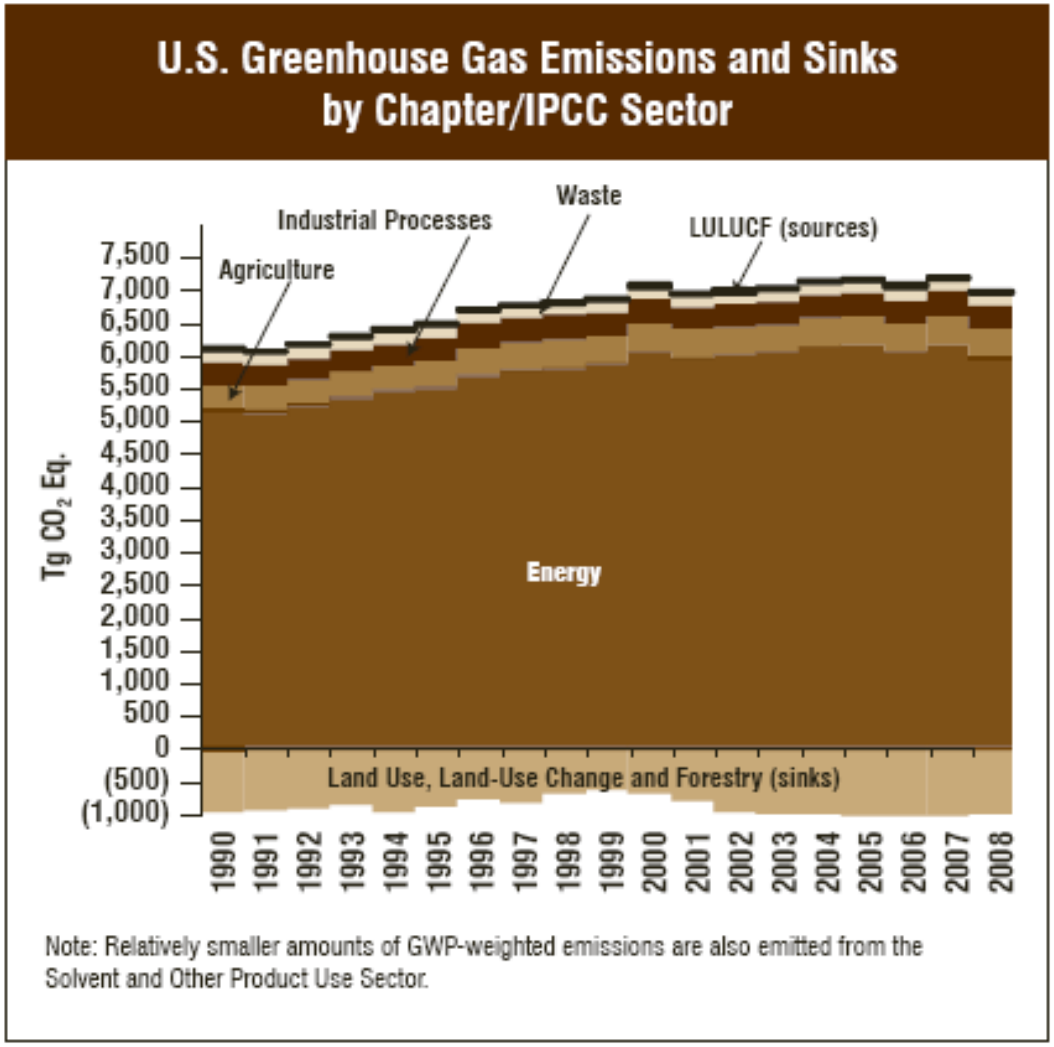
Ag's Many Complex Global Issues



Ag's Impact on Greenhouse Gas Totals

Figure ES-11



Ag's Greenhouse Gas Emissions

Table 1. U.S. Greenhouse Gas Emission by Economic Sector (2005) (percent)

Sector	Percent
Electric power industry	33.5%
Transportation	27.7
Industry	18.6
Agriculture	8.2
Commercial	5.9
Residential	5.2
Other	.8
Total	100.0%

Source: EPA, U.S. Inventory of Greenhouse Gas Emissions and Sink (1990 – 2005), Trends in Greenhouse Gas Emissions, Table 2-14.

Table 2. U.S. Agricultural Greenhouse Gas Emissions by Source (2005) (percent)

Source	Percent of Total Emissions	Percent of Agricultural Emissions
Agricultural soil management	5.0%	61%
Enteric fermentation	1.5	18
Manure management	.7	9
CO_2 from fossil fuel consumption	.6	7
Other	.3	4
Total	8.2%	100%

Source: EPA, U.S. Inventory of Greenhouse Gas Emissions and Sinks (1990 – 2005), Trends in Greenhouse Gas Emissions, Table 2-14.

What is Agriculture?

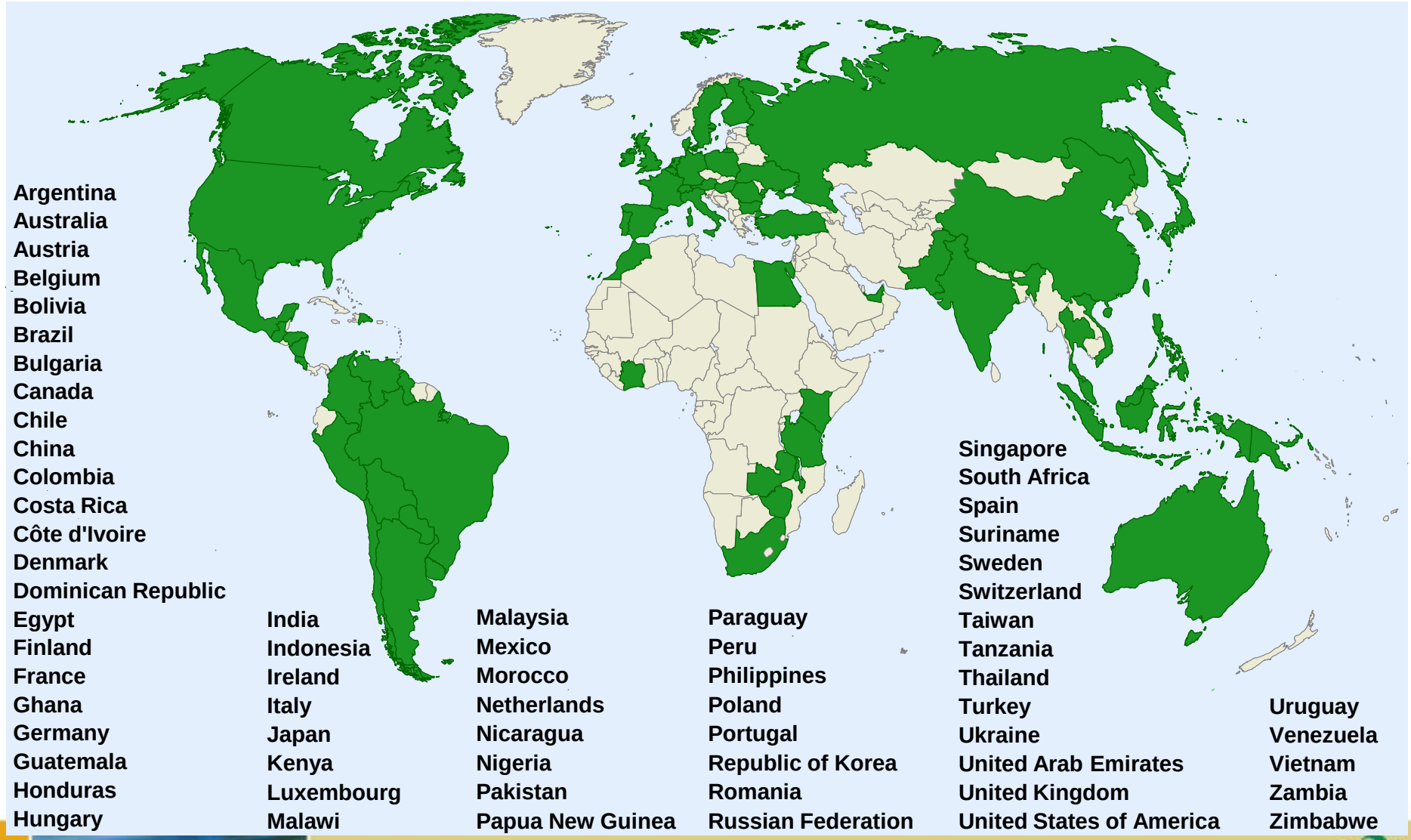
From Field Inputs to Processing to Table

What is Agriculture?

And from Pen Inputs to Processing to Table

Worldwide Operations

Cargill is an international provider of food, agricultural and risk management products and services with 153,000 employees in 66 countries.



Climate Change and Cargill

Our Impact >>>>>>>>> Our Influence >>>>>>>>> Our Contribution >>

Footprints ***Fingerprints*** ***Blueprints***

Cargill's 2015 Environmental Goals

- 5% Improvement in Energy Efficiency from 2010 Baseline
- 5% Improvement in Greenhouse Gas Intensity from 2010 Baseline
- 12.5% Renewables in our Energy Portfolio
- 5% Improvement in Freshwater Intensity from 2010 Baseline

Energy Efficiency

- Since 2001, Cargill has improved energy efficiency by 11%
- Cargill also measures energy use per $1,000 in sales and we are 24 percent more efficient from our baseline
- Piloting “behavior-based energy management” practices at six facilities.
- Joined the U.S. Environmental Protection Agency’s Energy Star program.

Cargill's Renewable Goal

- Cargill's goal was to have 10% percent of our energy come from renewable sources by fiscal 2010

- We exceeded this 2010 goal as renewables met 11% of our total energy demand

Measuring GHG Emissions

- Cargill began measuring GHG emissions from all our facilities in 2006.
- GHG inventory covers more than 1,200 locations across 67 different countries and encompasses 15 different manufacturing technologies.
- Our inventory includes both emissions generated from our own operations and from energy we buy.

Examples of Greenhouse Gas Reduction

- **US** -- Cargill reclaims methane from the wastewater lagoons our eight beef and pork plants and turns it into biogas to fuel plant boilers. Reduces greenhouse gas emissions by more than 1.3 million metric tons in the last four years.
- **Canada** -- Cargill sold more than 400,000 tons of emission offsets through the Alberta Emissions Offset Registry from a methane gas capture project at the wastewater treatment system in High River, Alberta.

Examples of GHG Reduction (cont.)

- **US** – Fargo, ND had installed a system to collect the gas produced by decomposing garbage at its landfill
- The city and Cargill shared the cost of building a pipeline from the landfill to Cargill's plant.
- Fargo generates revenue through the sale of landfill gas—and Cargill saves money because landfill gas is cheaper than natural gas.
- The plant currently receives nearly one-third of its thermal energy needs from the landfill. (Another renewable source, the burning of sunflower hulls, supplies another third and the rest comes from natural gas.)
- The Fargo initiative, up and running since 2002, annually offsets the greenhouse gas emissions of about 8,700 automobiles, according to the U.S. Environmental Protection Agency.

Examples of GHG Reduction (cont.)

- **Thailand -- ** At Cargill's starch plant an anaerobic digester captures methane from the waste products of tapioca processing reducing GHG emissions by 510,000 metric tons over 10 years.

- **South Korea** – In South Korea, our biogas plant generates power and produces fertilizer using methane gas from hog manure

Measuring Cargill's Progress

GHG Intensity

In the past four years, Cargill improved our greenhouse gas (GHG) intensity by 1.5 percent from our baseline.

Cargill and the Chicago Climate Exchange (CCX)

- Cargill joined the CCX in 2007
- Committed to achieve a 6 percent reduction in GHG emissions in actual emissions from large U.S. emitting operations by 2010
- Committed to achieving annual milestones
- Cargill met all annual milestones without purchasing offsets
- In 2008 Cargill accomplished a 7.8% reduction
- In 2009 Cargill reduced GHG emissions at US facilities by 12.1%.

Environmental Innovation in Renewables

Developing fertilizers from turkey feathers, converting biogas to energy and producing bio-based foams and plastics

Environmental Innovation

Helping customers shrink their environmental footprints

Sharing energy efficiency and carbon reduction practices

Using mapping technologies to improve fertilizer and pesticide application

Cargill Sharing our Expertise

- We partnered with McDonalds and created a carbon footprint for its complete chicken meat supply chain in Europe.

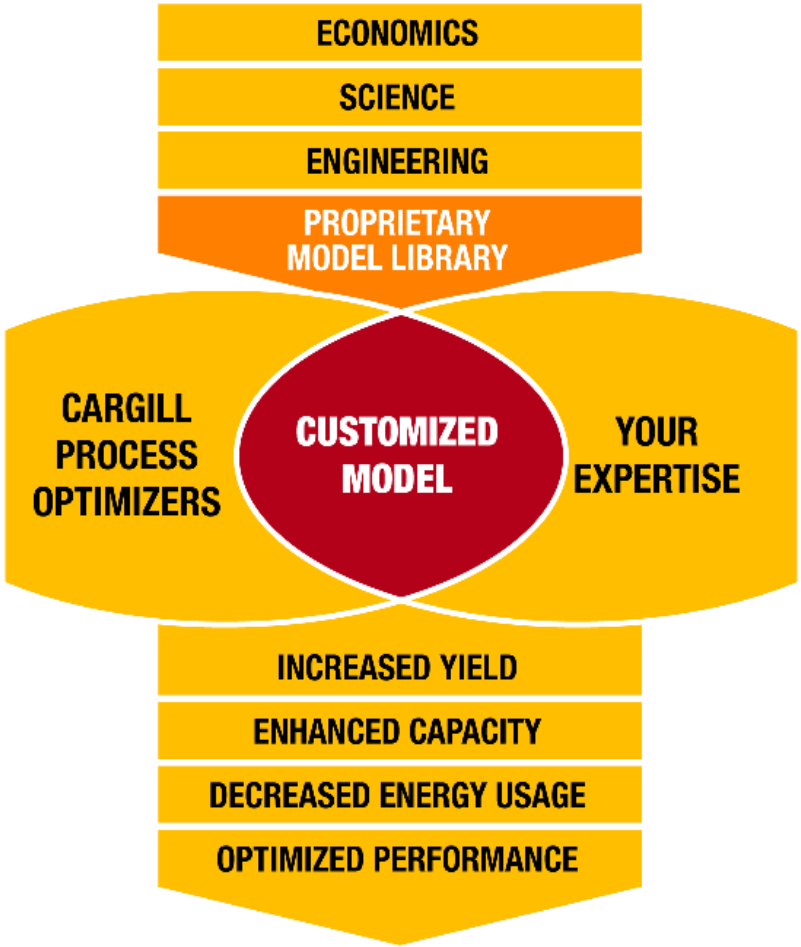
- We are working with Sara Lee to include Eco-Grain™ wheat in its *EarthGrains* brand breads. *Eco-Grain* wheat is grown using innovative farming techniques that benefit the environment.

Cargill Sharing our Expertise (cont)

- Partnered with The Nature Conservancy (TNC) to train Brazilian soy farmers to comply with the Brazilian Forest Code, which specifies how much land must be preserved as natural vegetation.

- Built and are operating anaerobic digesters on three large dairy farms in the United States.

We Share our Knowledge …



5% - 15% Energy savings

5% - 25% Effluent reductions

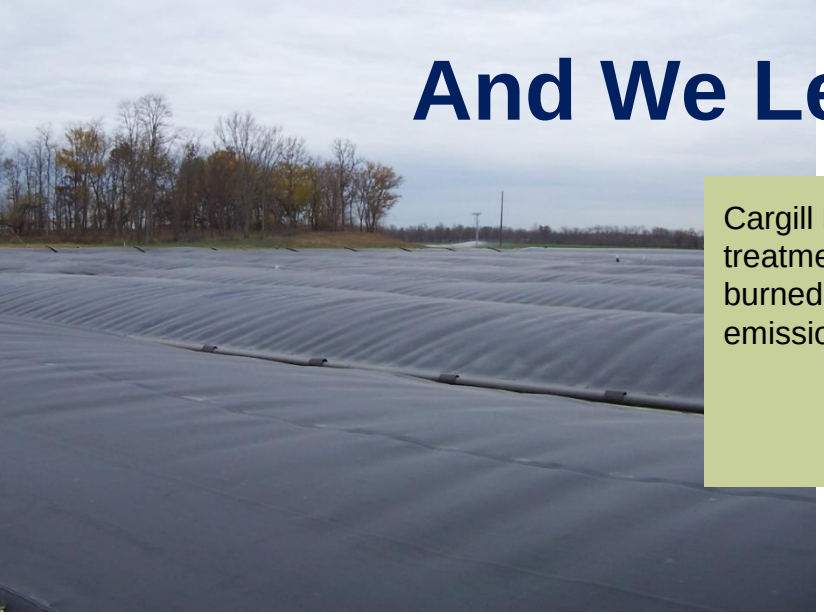
2% - 5% Raw material savings

2% - 10% Capacity increases

Operational improvements identified by CPO yield results quickly, with two year payback on investments

More than 140 locations globally.

And We Leverage our Connectivity.



Cargill Meat Solutions developed biogas capture systems at all waste water treatment lagoons. The biogas is rich in methane, which is conditioned and burned in plant boilers. This reduces natural gas demand and greenhouse gas emissions.

Cargill Environmental Finance leverages this technology to originate carbon reduction projects for its global greenhouse gas emission reduction and renewable energy business.

Cargill Global Emissions & European Power & Gas Trading supports nascent carbon markets by developing carbon credit projects, trading carbon credits, and bundling carbon credits with traditional energy products.

Blueprints – Collaborating to Address the Hard Issues

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GLOBAL CHANGE
SCIENCE POLICY
MIT

THE Keystone CENTER

FSE
STANFORD
PROGRAM ON FOOD SECURITY AND THE ENVIRONMENT

Partnering with Academic Institutions

- Sponsor of the Massachusetts Institute of Technology's Global Change Joint Program on the Science and Policy of Climate Change to assess the potential impacts of climate change.

- Supports Standard University's Institute on Food Security and the Environment to assess the impact of climate change scenarios on our food systems.

Partnering with Academic Institutions (cont)

- We are a founding partner of the University of Arkansas' Applied Sustainability Center and its efforts to define standards for the development of life cycle assessments for food and agricultural commodities.

- Cargill recently awarded $3 million to a project at Columbia University to help reduce Amazon deforestation and degradation by establishing reliable standards for carbon credits. Ultimately, the project will create a financial incentive for protecting the rainforest by allowing developed countries to buy forestry carbon credits from developing countries.

Cargill™