

ECO SECURITIES

CDM Opportunities; Swine Farms in Brazil

Methane to Markets

November 2, 2005

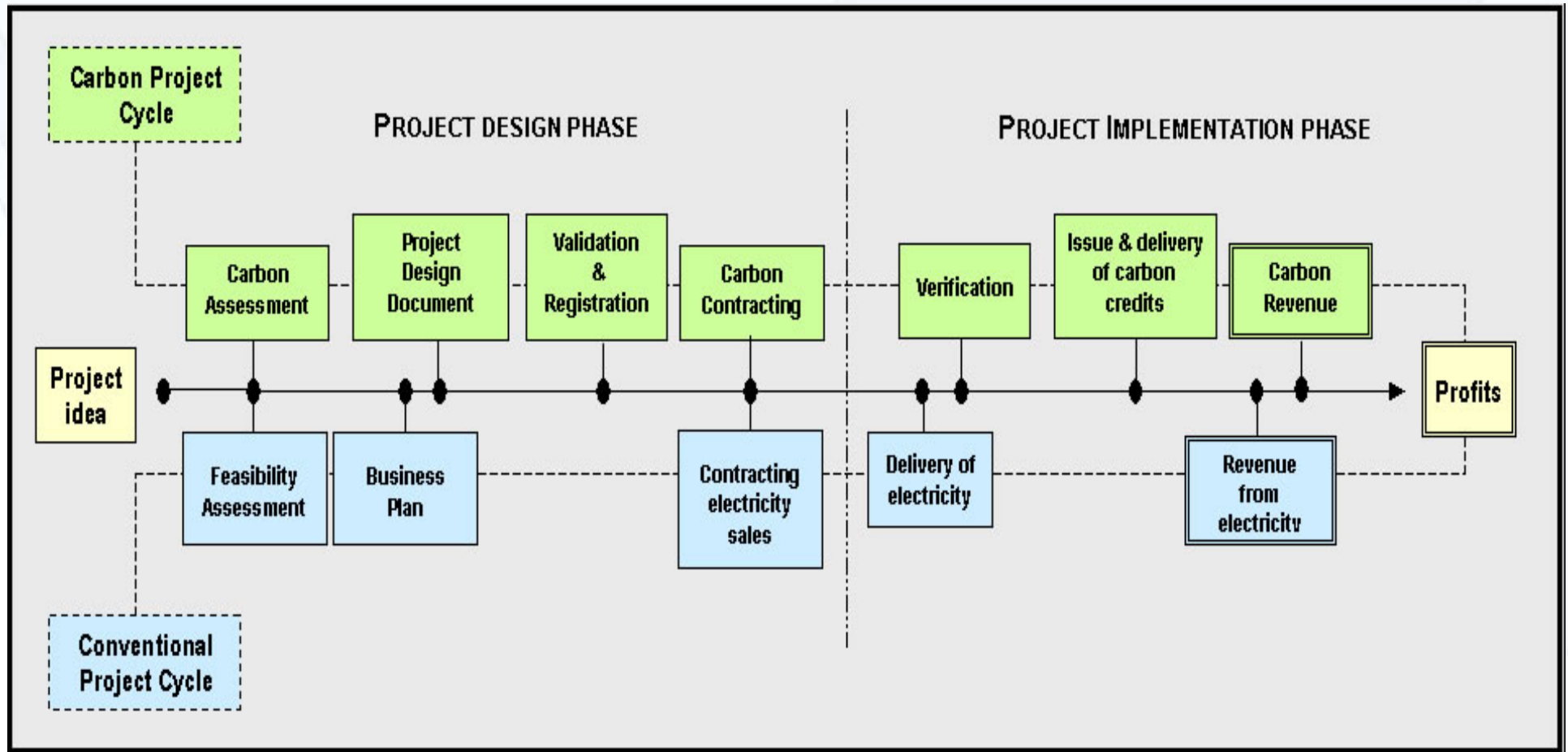
International trading mechanisms

- Kyoto Protocol requires developed countries (Europe, Japan and Canada) to reduce emissions of greenhouse gases by 5.2% during 2008 – 2012
- EU Emissions Trading Scheme requires EU countries to reduce emissions of greenhouse gases by 6% during 2005-2007
- The **Clean Development Mechanism (CDM)** enables the purchase of Certified Emissions Reductions (*CER*) from emissions reductions projects in developing countries

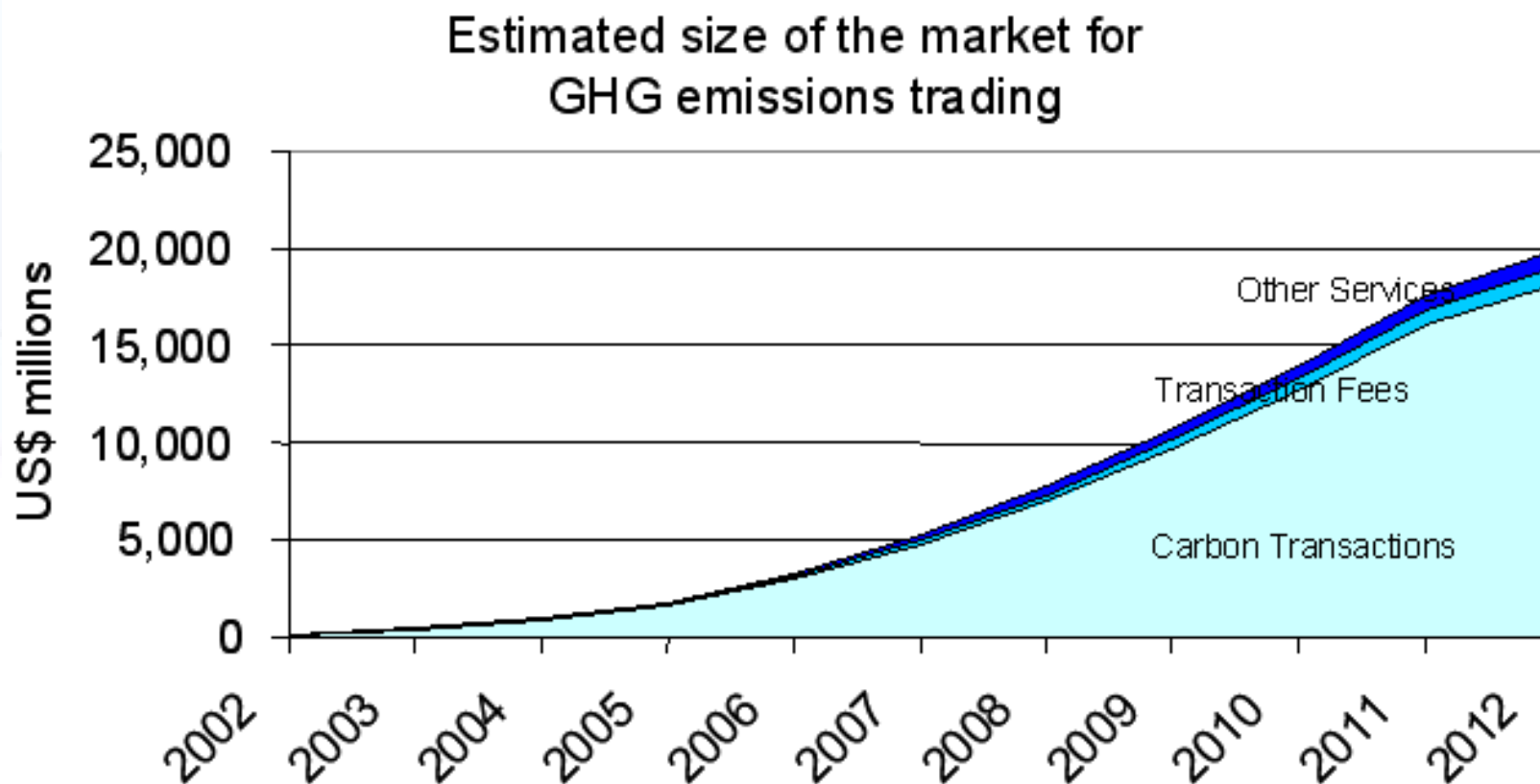
About EcoSecurities

- Developed or advised on emission reduction projects in a series of countries in five continents
- Currently 70 projects in development around the world
- Six of the 26 registered CDM projects globally were developed by EcoSecurities and four more projects currently in the pipeline for registration
- The company developed the first project to obtain CDM registration
 - NovaGerar Landfill Gas to Energy Project (Brazil)
- The company developed one of the first projects to be issued certified emissions reductions (CERs) - or carbon credits - under CDM
 - La Esperanza Hydroelectric Project (Honduras)

CDM & Conventional Project Cycle



CDM Opportunities



Development of the size of the market for GHG emissions trading. Source: own calculations.

CDM Opportunities

- Current CDM market is estimated at 100MtCO₂ per year, or a value of roughly US\$500 million
- CDM market expected to grow to US\$ 20 billion by 2012, a growth of 800%

CDM Opportunities

- Swine manure accumulation and run-off poses environmental problems: water contamination, disease transmission and global warming



- CDM offers an opportunity to solve environmental problems and increase revenue through methane capture

BioTer Project



Manure Management on Swine Farms in Brazil

BioTer Project

- Located in Mato Grosso do Sul, Brazil
- Project developed by EcoSecurities Biodigesters - joint venture with BioTer Ltda.
- EcoSecurities Biodigesters manages all stages of project cycle



BioTer Project

- Consists of 24 swine farms that will install BioTer Biodigesters and abate methane emissions
- Project will generate approximately 78,000 certified emissions reductions (CERs) every year



BioTer Project

Project barriers

- Swine farmers in Mato Grosso do Sul needed to obtain an environmental license to sell pork to Seara
- The license required farms to manage their waste water
- Open air aerobic lagoons offered one possible waste management solution



BioTer Project

Project Barriers

- Anaerobic digesters that resolved environmental problems and captured methane required a costly investment
- Brazilian government was reluctant to offer subsidies after the failure of Indian anaerobic digester technology
- Banks were often unwilling to finance such technology due to its relative novelty and limited financial returns

BioTer Project

Biodigesters

- Organically treat laden waste water and reduce the Chemical Oxygen Demand (COD)
- Long retention time of waste water at 30-35°C kills pathogenic material
- High Density Polyethylene (HDPE) liner creates a “gas seal,” facilitating efficient methane capture







BioTer Project

- Within the context of CDM, swine manure can be transformed into a business opportunity
- By installing anaerobic digesters and capturing the methane decomposing manure produces, swine farmers can commercialize their emissions reductions
- The sale of emissions reductions provides additional revenue to farmers on an annual basis

BioTer Project

Project Benefits

-  Considerably reduces Greenhouse Gases
-  Eliminates environmental contamination by waste water run-off
-  Generates an additional source of revenue
-  Potential for electricity production

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THANK YOU



EcoSecurities Ltd.
21 Beaumont Street, Oxford, OX1 2NH
United Kingdom
Ph. +44 1865 202 635
info@ecosecurities.com
www.ecosecurities.com

In Chile:
Av. Americo Vespucio Sur 100, Piso 16
Las Condes, Santiago de Chile
Ph. +56 2 207 5000
arturo@ecosecurities.com
julie@ecosecurities.com