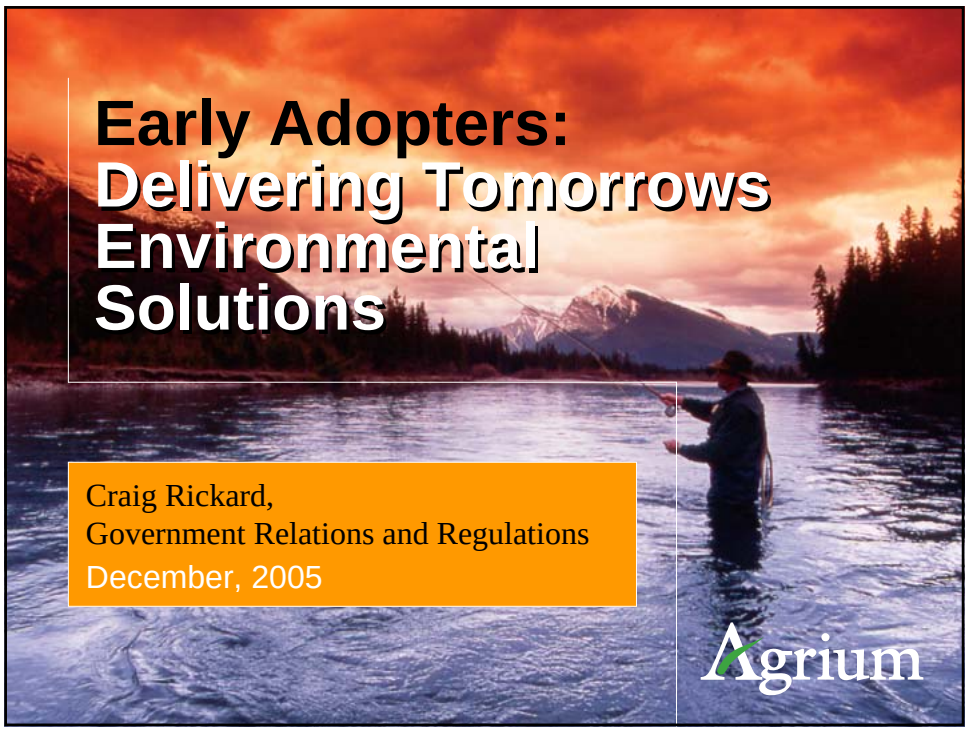

Agenda

- Agrium Overview
- GHG Impact – Manufacturing vs Product Emissions
- Industry Response, Past and Future
- Fit for Enhanced Efficiency Fertilizers
- Framework for Sustainability
- ESN, as part of Agrium's Approach

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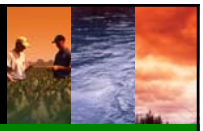

- Agrium was formed 12 years ago
- Manufacturer, Distributor, and Supplier of NPK
- Retail Accounts for 35% of Business and includes Fertilizer, Seed, Chemical
- Geographic distribution in North and South America in production and retail – Products can be found globally

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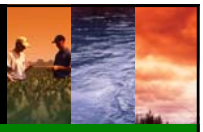
GHG Reductions in Fertilizer



Manufacturing GHG Reduction

- Significant accomplishments have been achieved reducing GHG's
- Canada leads the world in Feed and Fuel Efficiency per unit of ammonia produced
- Driver was largely rising price of natural gas

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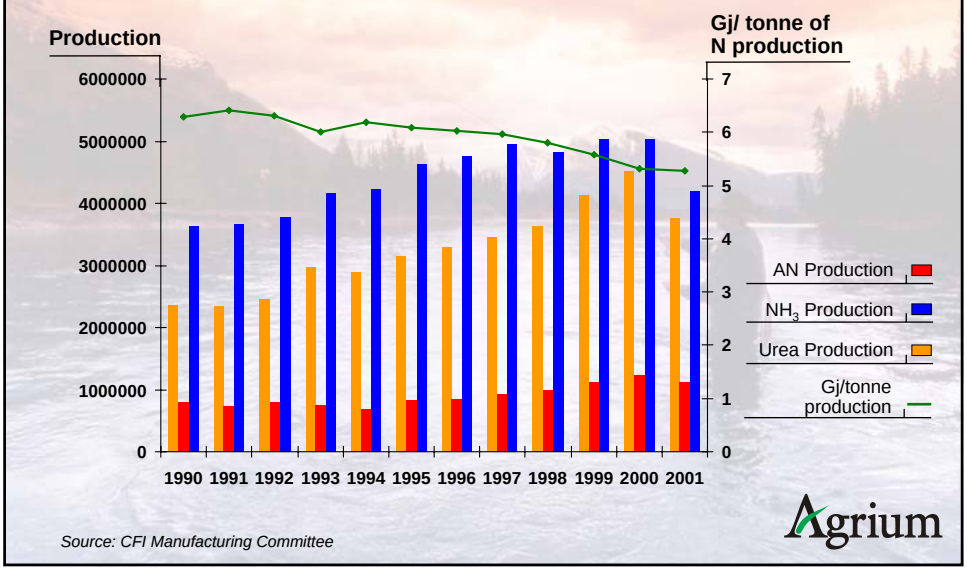
Energy Intensity - Nitrogen



Source: CFI Manufacturing Committee

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Global Natural Gas Prices

Source: Coalition of Industrial Energy Consumers
Compiled by ACC
Updated: September 8, 2005

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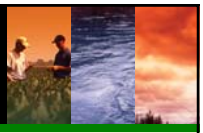
GHG Reductions in Fertilizer



- ***Product*** **GHG Reduction**
  - Historically focused on the application of products – BMP's
  - Expanding to the product itself and its role in delivering right rate, time, and place
  - Key to significant environmental benefits is delivering at price point for large acre adoption

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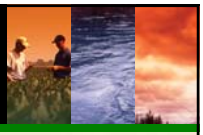
Industry Response – Past



- **Focus on Farm Stakeholders**
- **Driven by Economic and Agronomic Issues**
- **Result**
  - Strong Agronomic BMPs Implementation
    - Regional Differences and Fine Tuning at Field Level
  - BMPs and Sustainability Linkages Unclear

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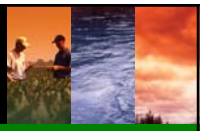
Industry Response - Future



- **Broaden Stakeholder Engagement**
  - Nutrients for Life Foundation, Crop Nutrients Council, Certified Crop Advisors
- **Consider All Three Areas of Sustainability**
  - Environmental, Economic and Social
- **Sustainable Management System**
  - Effective – Must Deliver Results
  - Flexible – Can't be One Size Fits All
  - Simple – All Stakeholders Understand Approach
  - Actionable – Easy to Implement and Adjust
  - Measurable – Facilitate Continuous Improvement

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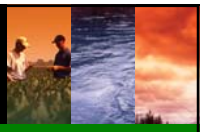
Right Rate, Time and Place



Performance Areas and BMPs

Performance Area **BMP Examples**

Right Rate

Apply the right amount of fertilizer

- Soil Testing
- Yield Goal Analysis
- Crop Removal Balance
- Nutrient Management Plans
- Plant Tissue Analysis
- Applicator Calibration & Upkeep
- Crop Scouting/Assessment
- Record Keeping
- Variable Rate Technology

Right Time

Apply fertilizer when crops need it

- Application Timing
- Controlled Release Technologies
- Inhibitors
- Fertilizer Product Choice

Right Place

Apply fertilizer where crops need it

- Application Method
- Incorporation of Fertilizer
- Buffer Strips
- Conservation Tillage
- Cover Cropping
- On-Farm Fertilizer Practices

The Sustainability Cycle

This approach is designed to balance the environmental, economic, and social goals of our stakeholders. These goals are connected as part of the sustainability cycle.

Environmental

- Sustain soil quality
- Avoid the need for additional farmland
- Maintain nutrient levels within natural ecosystems

Economic

- Produce revenue to sustain farm operations
- Enable investment in BMPs
- Preserve quality of life
- Make the most of dollars spent on fertilizer

Social

- Produce nutritious, abundant and affordable food
- Support programs for strong and caring communities
- Help meet global food needs
- Provide ongoing employment opportunities in agriculture and related industries

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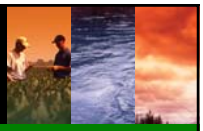
Fit for Enhanced Efficiency Fertilizers



- **New Group of Right Rate, Time & Place BMPs**
  - Nutrient Release Matches Crop Requirements
    - Increased Yield and Enhanced Economic Returns
  - Reduced Losses
  - Improved Efficiency
- **Value Proposition**
  - Paradigm shift in value proposition emerging
- **Environmental Concerns Increasing Demand**
  - BMP support – cross compliance with safety net programs

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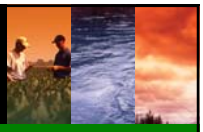
Agrium's Approach



- **Support Sustainable Management Systems**
  - Support BMP Development and Extension
  - Seeking stakeholder alignment around a system
  - Develop Next Generation of Fertilizer Technologies
- **ESN – *E*nvironmentally *S*mart *N*itrogen**
  - Flagship for Broad Acre Controlled Release Nitrogen

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Environmentally Smart Nitrogen

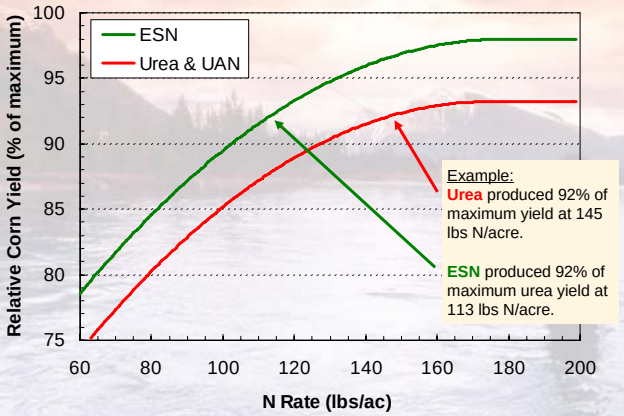

Figure 1. Relative corn yields for ESN and urea and UAN, US Corn Belt, 2000-2004.

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Environmentally Smart Nitrogen

Initial Findings are Very Encouraging

- Obtain same crop yield with up to 25% reduction in Nitrogen Used
- Corresponding Reduction in Manufacturing and Transport Emissions
- Many environmental benefits beyond GHG reduction
- May be opportunities in the realm of CDM and even more dramatic GHG gains in different production systems – ie: rice

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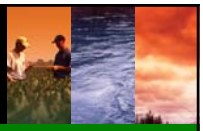
Conclusion



- Changing reality for crop nutrients
- Must satisfy many social, environmental, and economic objectives in tandem
- Major gains to be made with product, and in field. Manufacturing gains diminishing
- Multi-faceted approach required to achieve these objectives

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