# Nitrogen Market Update

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TFI Outlook Conference November 14, 2012



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#### **Presentation Outline**

Brief Agriculture Overview & US Nitrogen Demand Outlook

Review of Current and Forecasted Costs For Key Global Producers

Capacity and Trade Outlook



# **\*\*** Agriculture Overview & US N Demand Outlook

#### **Global Crop Condition**

Less Than Ideal Conditions Have Impacted 2012 Crop Production

Yields have generally disappointed due to heat and disease pressure

Projected corn yield is the lowest since 1995. Significant demand rationing required for corn and soybeans.

Brazilian soybean acres expected to increase by 8-10%. Market will be closely monitoring weather conditions.

Argentina expected to increase soybean acreage but excess moisture has delayed planting

Expect limited FSU grain exports over next 6-9 months; Russian wheat exports could be down by 60% in 2012/13

Weak Indian monsoon impacted Kharif (summer) crop, improved rain should support Rabi (fall) crops

Australian wheat production could be down by more than 20%

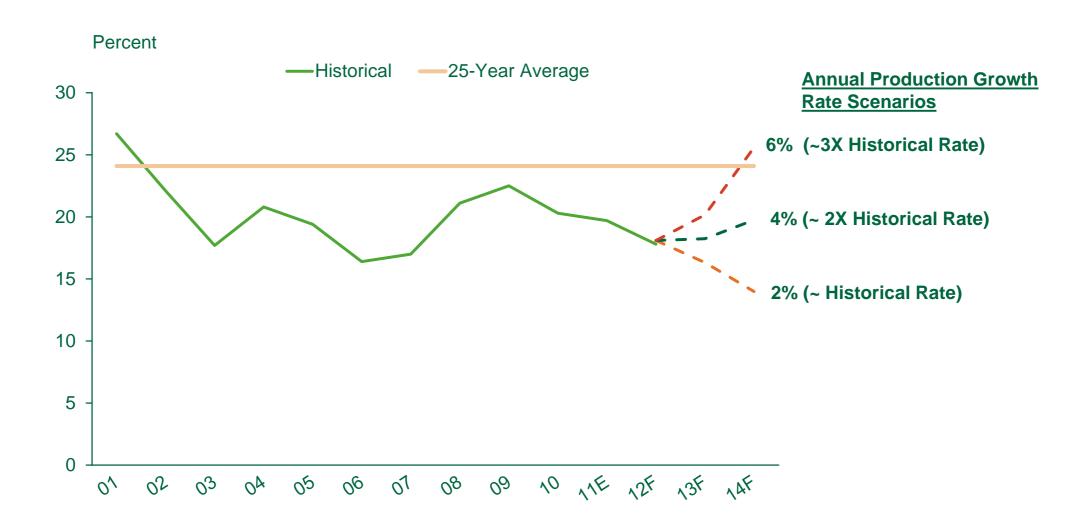
#### **Key Factors to Watch:**

- How will US corn and soybean demand be rationed
- Uncertainty of FSU grain export supply
- Planted area and crop conditions in Brazil
- China corn and soybean import demand



#### **World Grain Stocks-to-Use Ratio**

Consecutive Years of High Growth in Production Required to Replenish Stocks

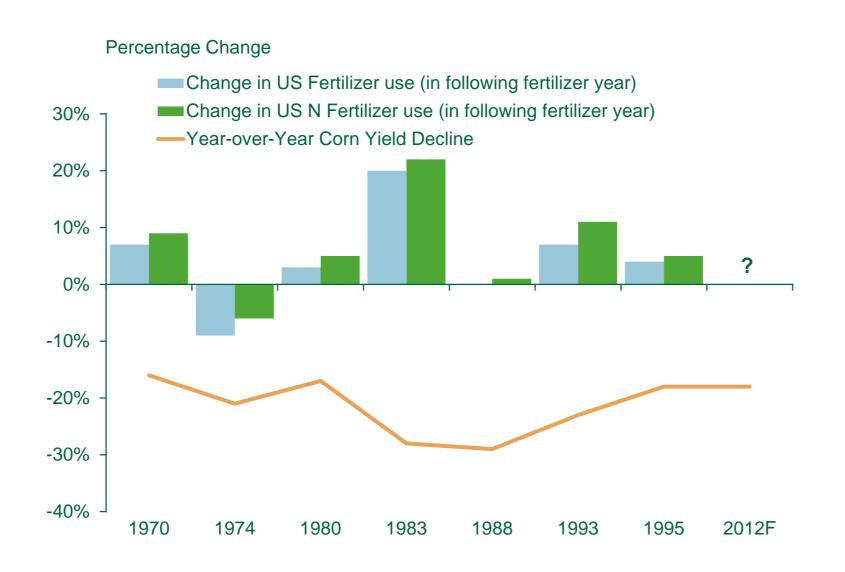


2012F refers to the 2012/13 crop year. Assumes demand growth of 2 percent. Previous 10-year growth in production/consumption averaged approximately 2 percent annually.



## **US Fertilizer Use Following Major Yield Declines**

Fertilizer Use Increased in Most Fertilizer Years Following a Major Yield Decline

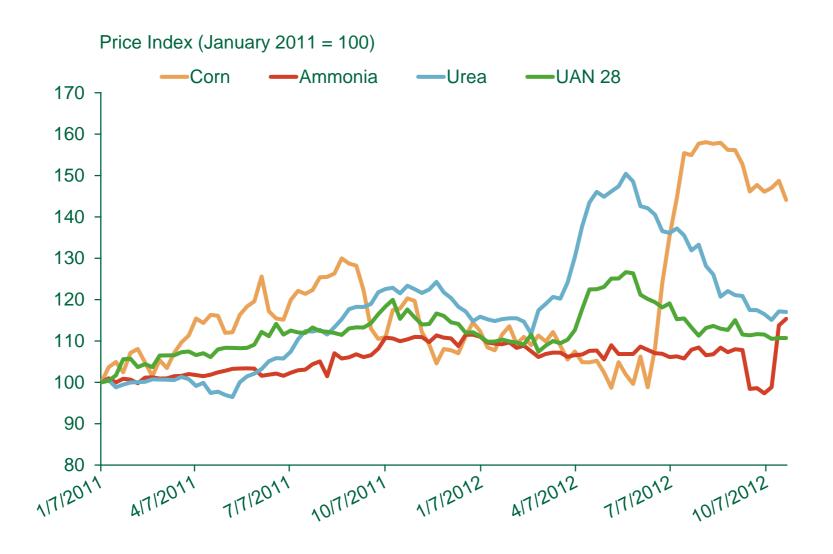




Source: USDA, AAPFCO

## **US Crop and Retail Fertilizer Prices**

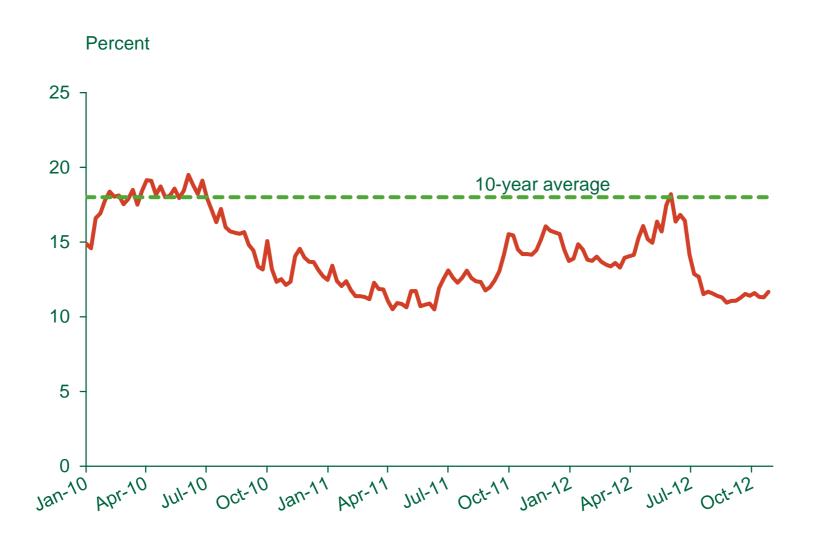
Nitrogen Prices are Lagging Increases in Crop Prices





#### Fertilizer Cost Percentage of US Corn Revenue

Expect Farmers Will Respond to Favorable Fertilizer Economics

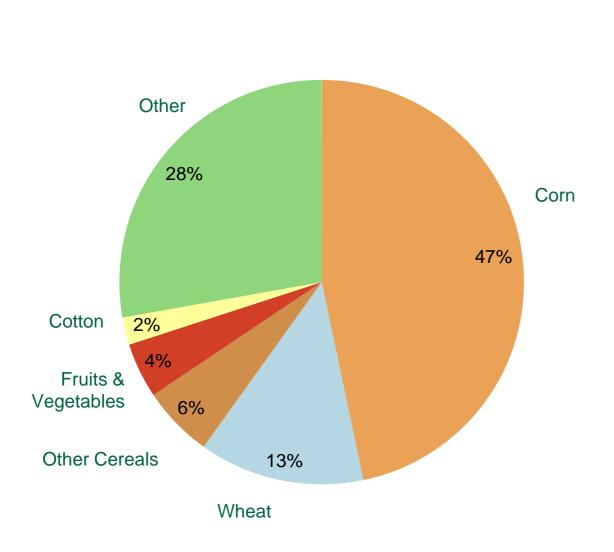




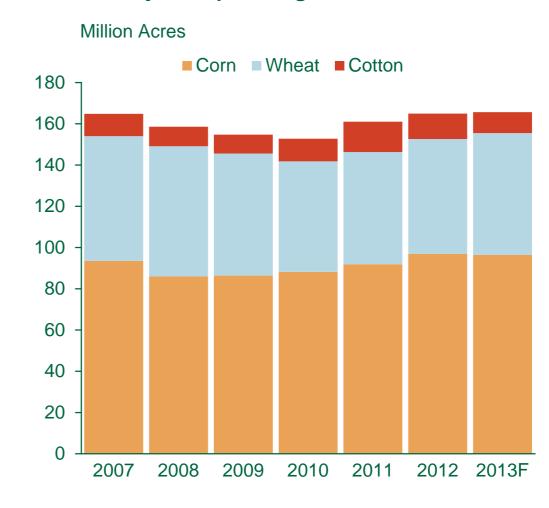
## **US N** Use by Crop and Acreage Forecast\*

Expect Another Large Planted Acreage of Major Nitrogen Consuming Crops





#### **US Major Crop Acreage\***



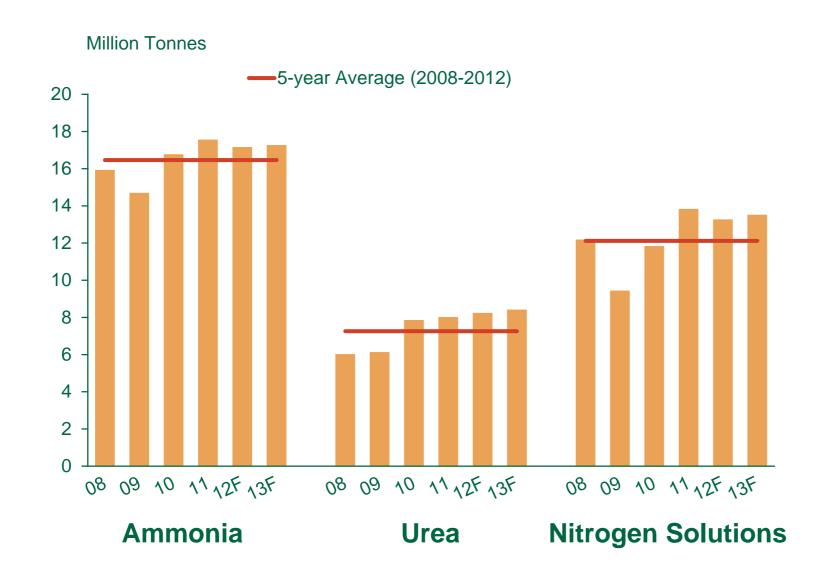
<sup>\*</sup> Based on corn, wheat and cotton acreage. 2013F refers to the 2013/14 crop year.



Source: USDA, IFA, Doane

## **US Nitrogen Consumption**

US Nitrogen Demand Expected to Be Strong in 2013



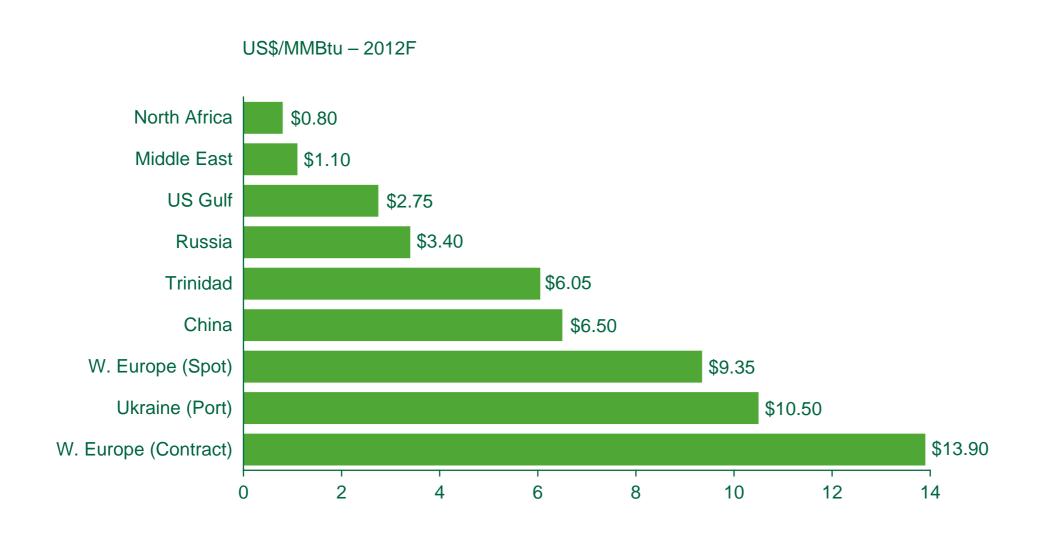


Source: USDOC, TFI, CRU

# **Nitrogen Costs Update**

#### Natural Gas Prices in Key Nitrogen-Producing Regions

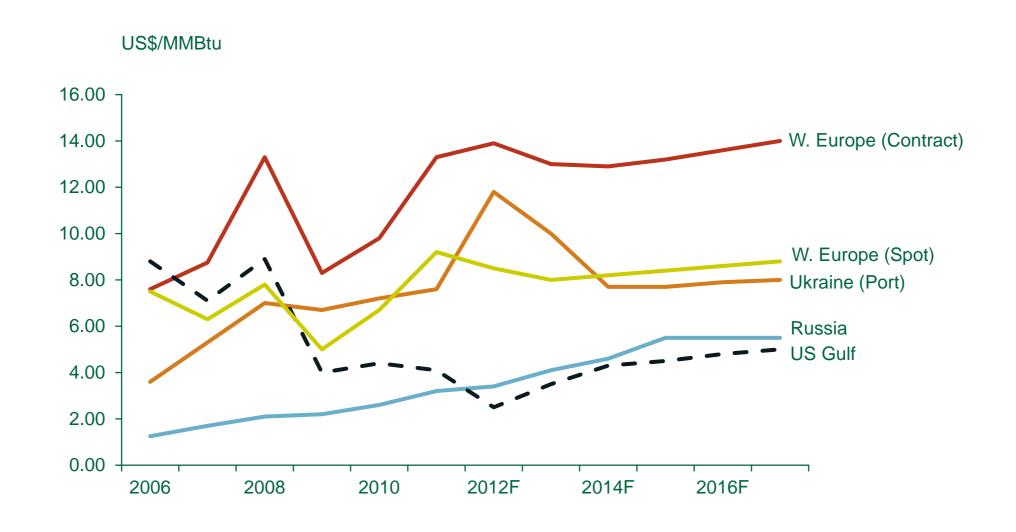
Gas Prices Remain Elevated In Required Producing Regions





#### **Natural Gas Forecast For Key Producing Regions**

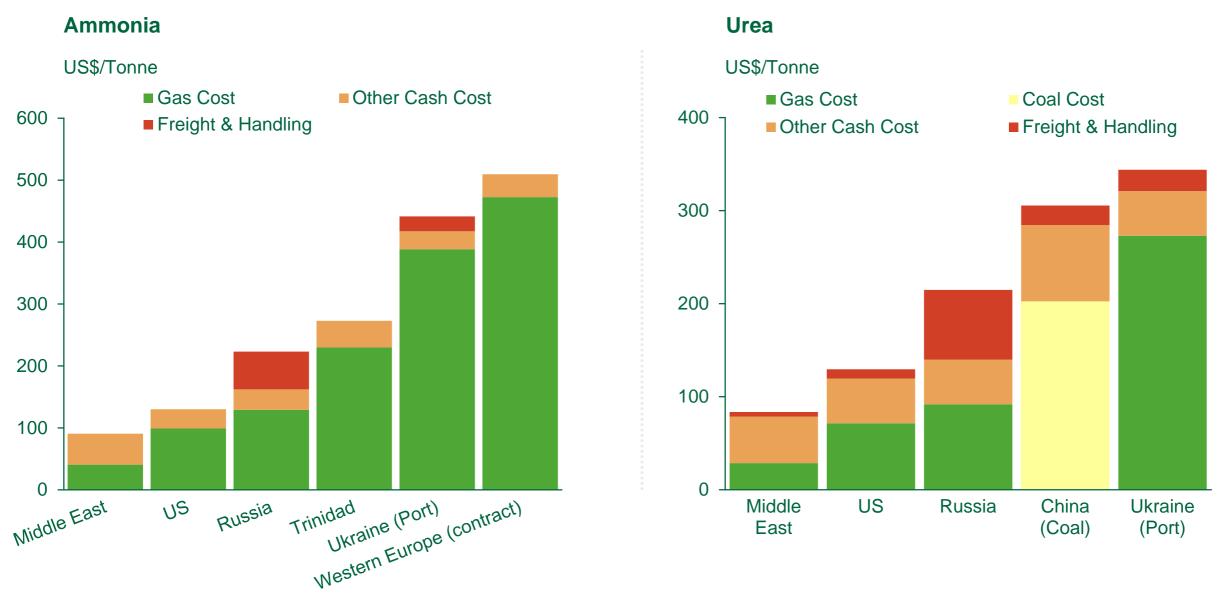
Input Costs Expected To Remain High In Many Key Producing Regions





## **Nitrogen Production Cash Costs**

High-Cost Production Required During Periods of Strong Demand

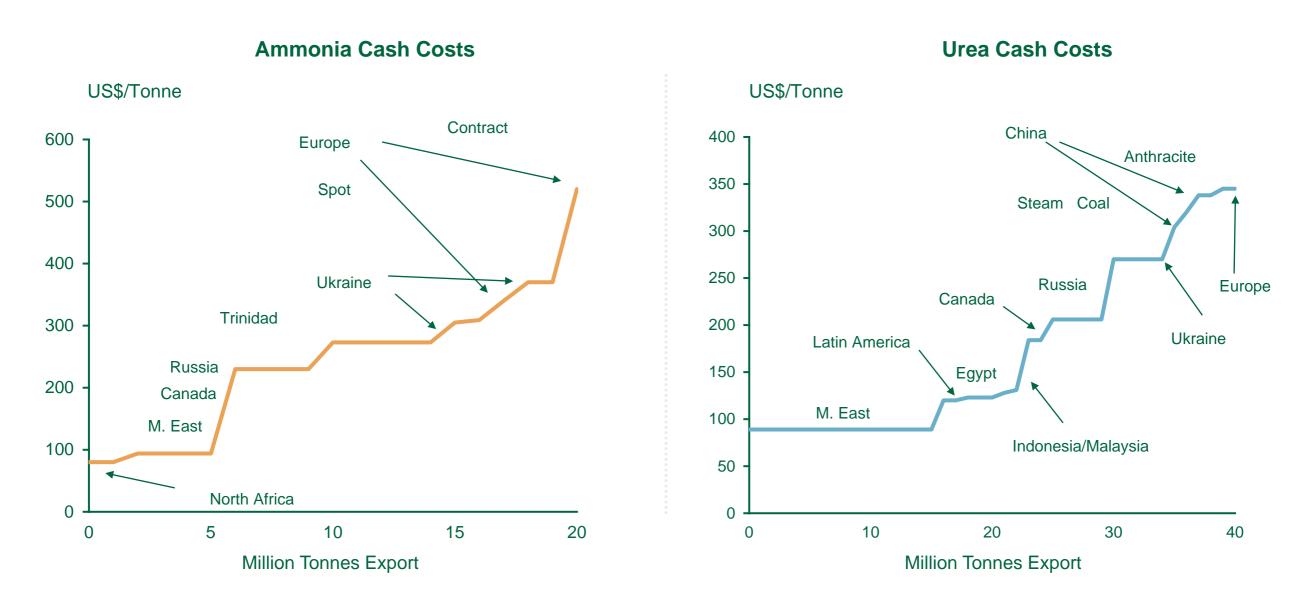


Note: Cost of production estimates based on natural gas price forecast for 2012



## **Supply Cost Curves for Nitrogen Exporters**

Wide Range In Cost Profiles Intensifies Typical Market Seasonality



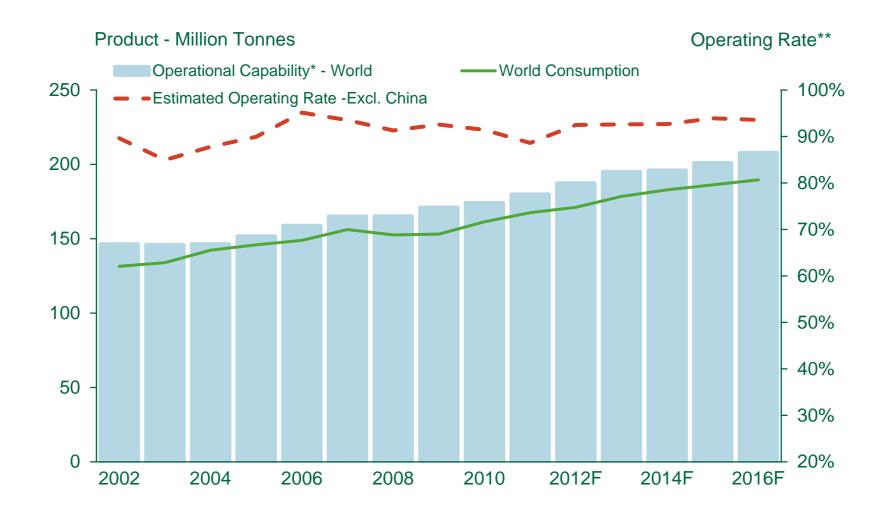
Note: Cost of production estimates based on natural gas and coal price forecast for 2012. Excludes transportation cost.



**Capacity & Trade** 

## World Ammonia Supply and Demand

#### Relatively Balanced Ammonia Market Outside of China



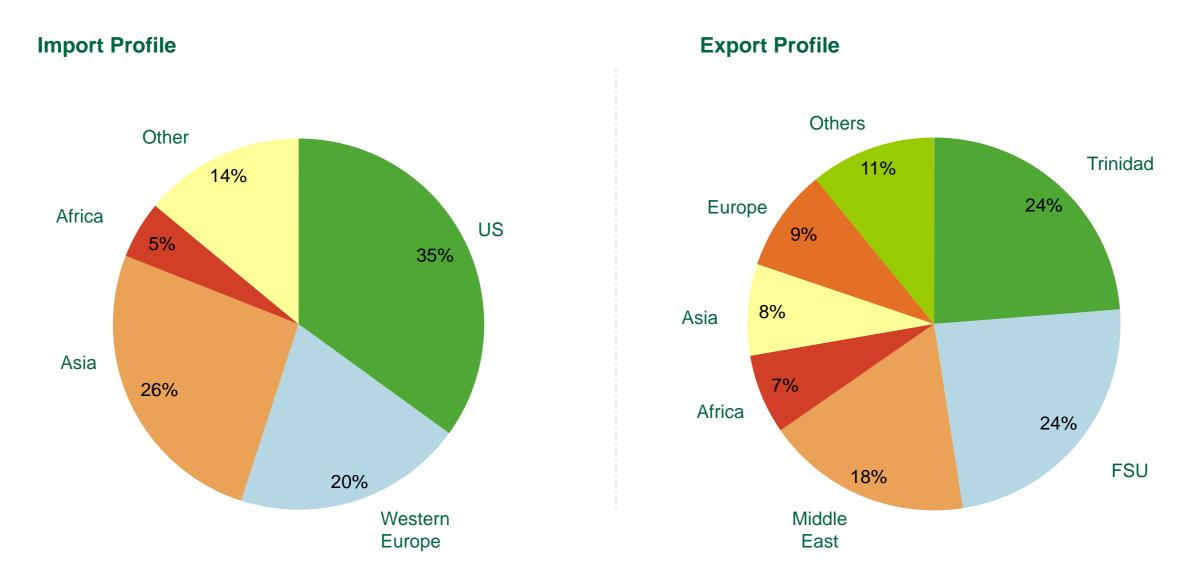
<sup>\*</sup>Estimated annual achievable production level from existing operations and projected new capacity.



<sup>\*\*</sup>Operating rate forecast based on forecasted demand divided by estimated operational capability (including announced projects; assuming typical ramp-up period for new capacity).

#### **World Ammonia Trade**

#### **Expect Majority of Import Growth From Asian Markets**

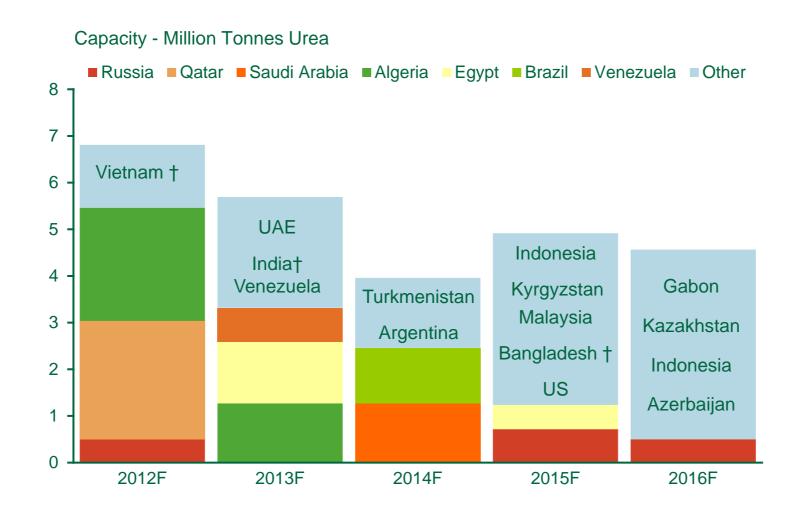


Global Ammonia Trade 2011: 19.6 Million Tonnes



## **Global Urea Capacity Additions\***

Uncertainty Over Timing and Probability of Announced New Capacity



<sup>\*</sup>Excludes Chinese urea capacity additions and capacity curtailments



<sup>\*</sup>Approximately 80 percent of the new capacity is export oriented

<sup>†</sup> Indicates the country is a net importer

#### **World Urea Supply and Demand**

Modest Pressure On Market Possible If Proposed Project Are Completed



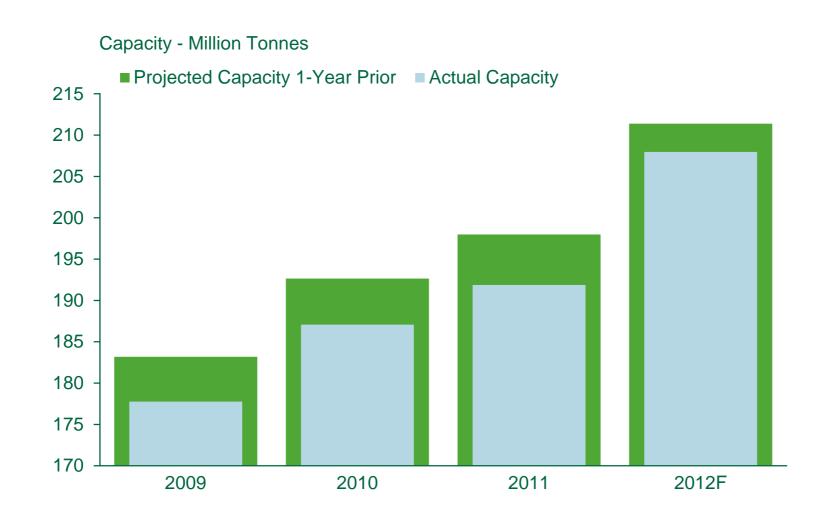
<sup>\*</sup>Estimated annual achievable production level from existing operations and projected new capacity.



<sup>\*\*</sup>Operating rate forecast based on forecasted demand divided by estimated operational capability (including announced projects; assuming typical ramp-up period for new capacity).

## Nitrogen Capacity Projections vs. Actual Additions

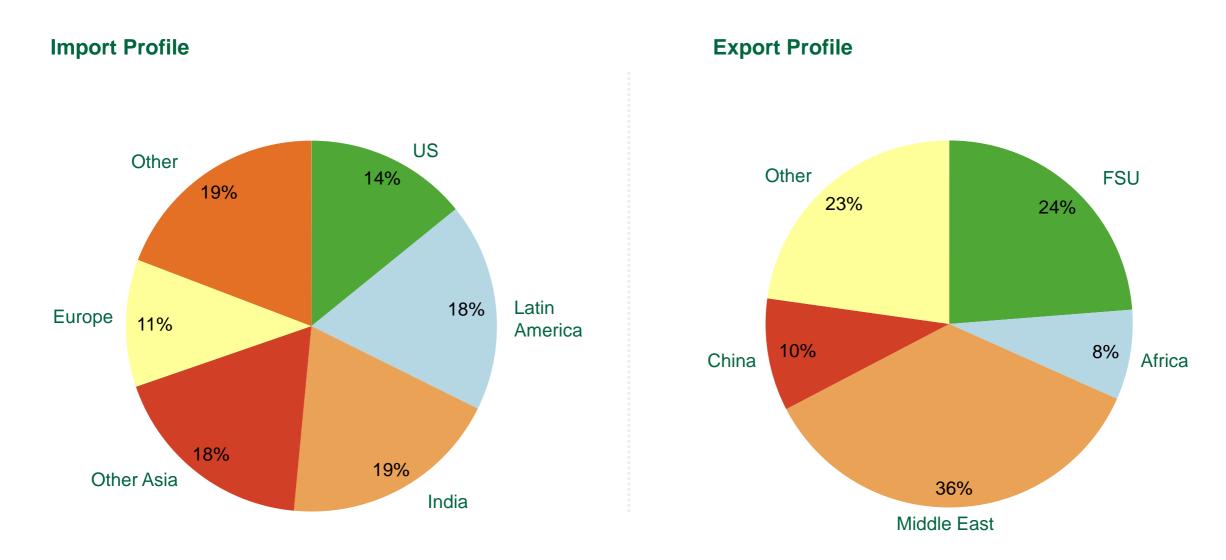
Numerous Global Urea Project Delays Have Impacted the Market





#### **World Urea Trade**

The Middle East and Africa are Forecast to Supply Import Growth



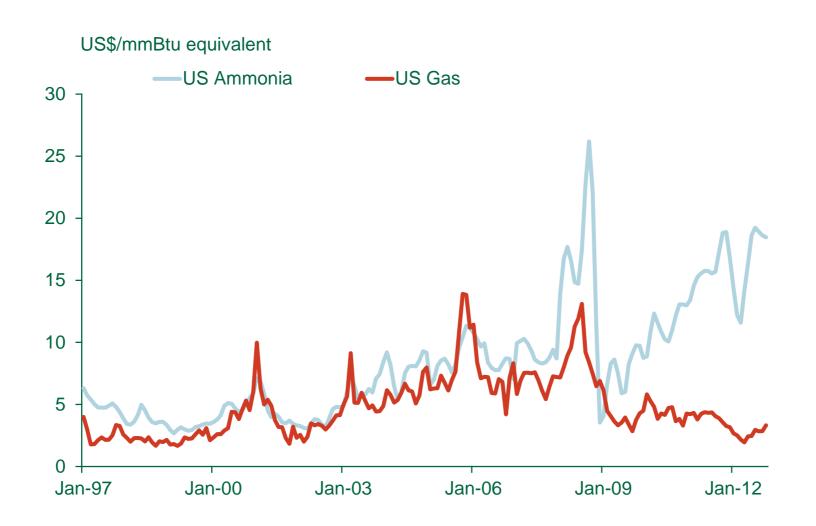
Global Urea Trade 2011: 40.6 Million Tonnes



# **US Capacity Story**

## **Ammonia Cost and Natural Gas Price Comparison**

US Natural Gas Situation Provides Significant Interest In Nitrogen Production





## **Proposed Capacity Additions in North America**

|                     |                           | Ammonia    | Urea       |                    |
|---------------------|---------------------------|------------|------------|--------------------|
| Company             | Location                  | ST/Year    | ST/Year    | Start up           |
| LSB                 | Pryor, OK                 | 60,000     | -          | 4Q12               |
| OCI                 | Beaumont, TX              | 250,000    | -          | 2Q12               |
| PCS                 | Augusta, GA               | 70,000     | -          | Q412               |
| PCS                 | Geismar, LA               | 550,000    | -          | 1Q13               |
| Austin Powder       | Moshein, TN               | 125,000    | -          | 2H13               |
| CF-Brownfield       | Donaldsonville, LA        | 100,000    | -          | 3Q13               |
| Rentech             | East Dubuque, IL          | 75,000     | 17,500     | 4Q13               |
| Yara                | Belle Plaine, SK          | 880,000    | 1,450,000  | 1H2016             |
| CF-Brownfield       | Donaldsonville, LA        | 2,100,000  | 2,400,000  | 2H2015<br>and 2016 |
|                     | Port Neal, IA             |            |            | 2016               |
| Agrium - Brownfield | TX, AB                    | 135,000    | 890,000    |                    |
| ОСІ                 | Iowa                      | 880,000    | 510,000    | 3Q15               |
| CHS                 | Spiritwood, ND            | 750,000    | 1,020,000  | 2H16               |
| Subtotal            |                           | 5,975,000  | 6,287,500  |                    |
|                     |                           |            |            |                    |
| Agrium - Greenfield | US                        | 1,000,000  | 1,980,000  |                    |
| Koch                | numerous                  | 1,800,000  | 500,000    |                    |
| Dyno Nobel          | Waggaman, LA              | 850,000    | -          |                    |
| Summit              | Texas                     | 406,000    | 700,000    |                    |
| Mosaic              | Faustina, LA              | 1,100,000  |            |                    |
| IFFCO               | East Canada (on<br>water) | 1,700,000  | 2,600,000  |                    |
| ND Corn Growers     | North Dakota              | 800,000    | 1,400,000  |                    |
| OVR                 | Indiana                   | 822,000    | 688,000    |                    |
| Agrifos             | Pasadena, Texas           | TBD        | TBD        | TBD                |
| Subtotal            |                           | 8,478,000  | 7,868,000  |                    |
| Total               |                           | 14,453,000 | 14,155,500 |                    |



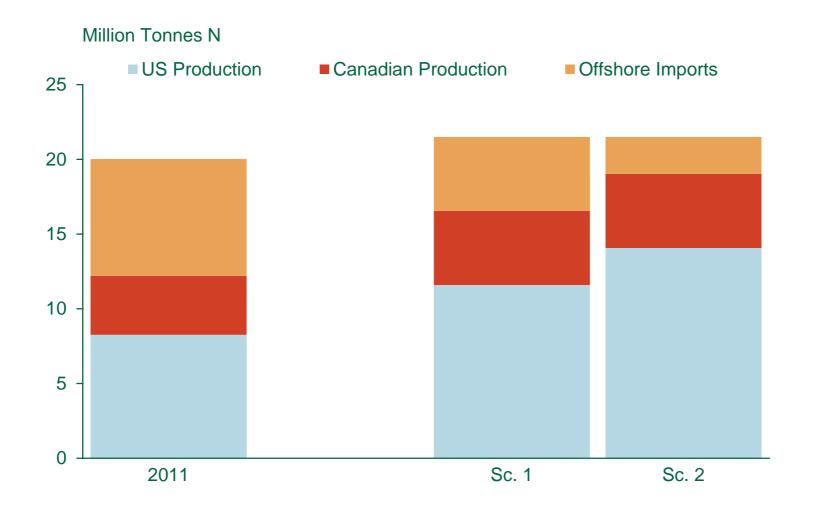
## **Major North American Fertilizer Production Locations**

Numerous Nitrogen Capacity Announcements



## **NA Nitrogen Supply Profile Scenarios**

#### New Capacity Expected to Impact Imports



2017 Sc. 1: assumes major debottlenecking and expansions proceed at existing sites.

2017 Sc. 2: In addition to Sc. 1, three greenfields proceed.



#### **Concluding Summary and Comments**

- Agriculture fundamentals are providing an optimistic backdrop for the upcoming fertilizer season – especially North American N demand.
- Appears to be minimal relief in cost profile for key offshore producing regions.
- Numerous projects in various stages of development but history shows timing of completion is often optimistic.



## **\*\*** Thank you

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