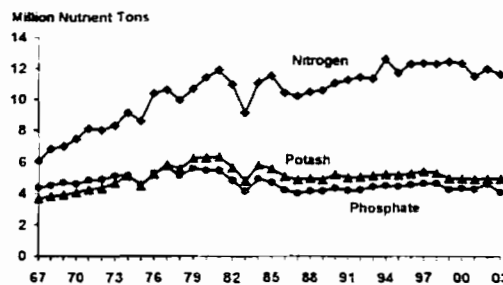


The Future of the U.S. Nitrogen Industry

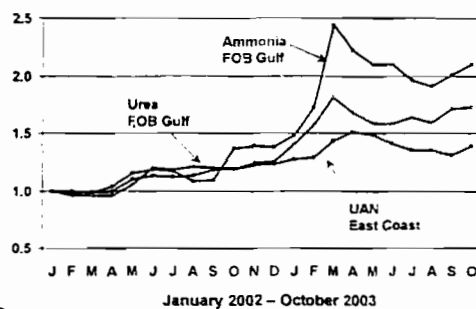
David Asbridge
November 2003

U.S. Fertilizer Consumption

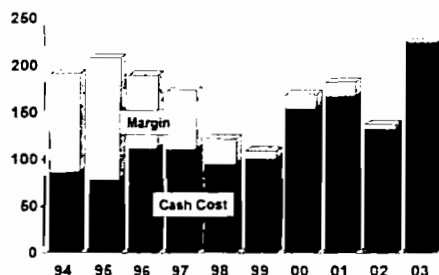


Nitrogen Situation

Index of U.S. Nitrogen Prices January 2002 = 1.0



U.S. Ammonia - Cost & Margins \$ Per Ton

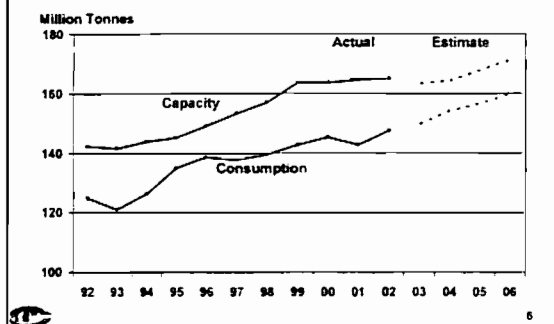


1997-2003 Nitrogen Market

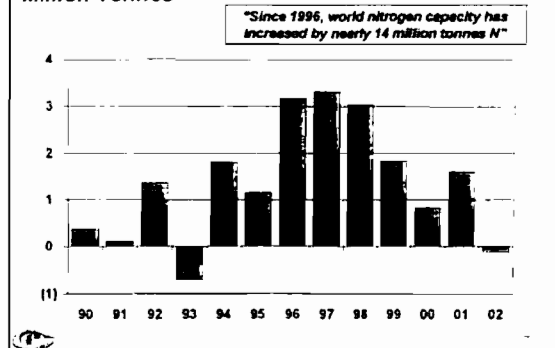
Driving Factors

- Record increase in world nitrogen capacity

World Ammonia Capacity vs Consumption



World Nitrogen Capacity – Net Change Million Tonnes

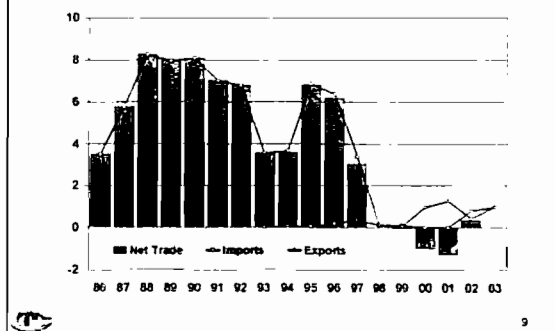


1997-2002 Nitrogen Market

Driving Factors

- Record increase in world nitrogen capacity
- China's ban on urea imports

China Urea Trade Million Product Tonnes

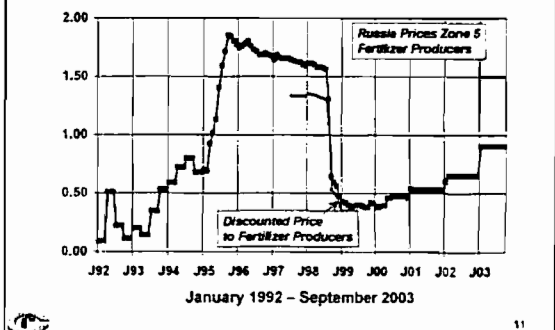


1997-2002 Nitrogen Market

Driving Factors

- Record increase in world nitrogen capacity
- China's ban on urea imports
- Collapse of the Russian ruble (i.e. natural gas prices)

Natural Gas Prices – Russia \$ Per MMBtu



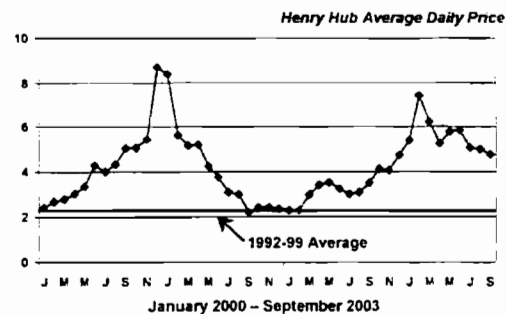
1997-2003 Nitrogen Market

Driving Factors

- Record increase in world nitrogen capacity
- China's ban on urea imports
- Collapse of the Russian ruble (i.e. natural gas prices)
- High U.S. natural gas prices

U.S. Natural Gas Prices

\$ Per MMBtu



U.S. Natural Gas Demand BCF/Day

	2002	2003	Per Cent Change
Res/Commercial	22.04	22.85	+3.7
Electric Generation	15.11	13.75	-9.0
Industrial	20.11	18.89	-6.1
Ammonia	1.14	0.90	-21.1
Misc.	5.17	5.17	0.0
Total	62.42	60.67	-2.8

1997-2003 Nitrogen Market

Driving Factors

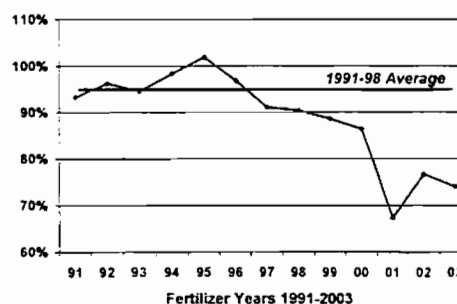
- Record increase in capacity
- China's ban on urea imports
- Collapse of the Russian ruble
- High U.S. natural gas prices

Net Result –

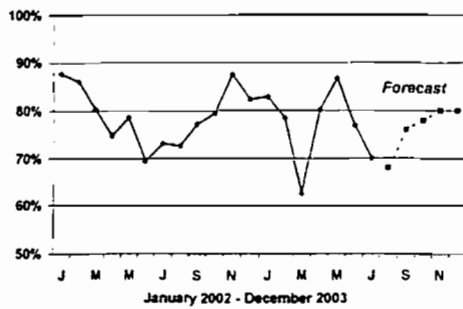
"Worst downturn in the history of the industry"

Nitrogen Outlook

U.S. Ammonia Operating Rates

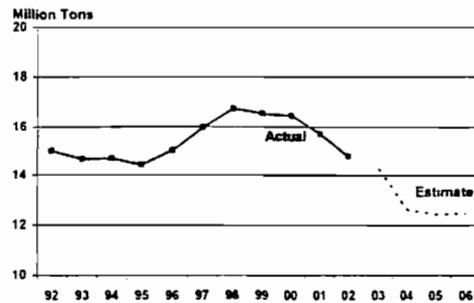


U.S. Ammonia Operating Rates



18

U.S. Annual Nitrogen Production Capacity



19

U.S. Ammonia Capacity Potential Closures Due to High Natural Gas Prices

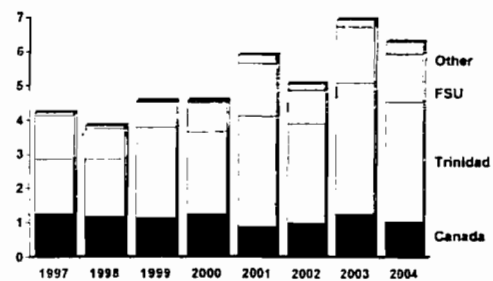
	Capacity Million Product Tons	Percent of Industry
Capacity in 1999	20.2	
Closures to Date	3.6	17.8%
Current Capacity	16.6	
Capacity at Risk	4.2	25.3%
Potential Capacity	12.4	



Source: Fertilizer

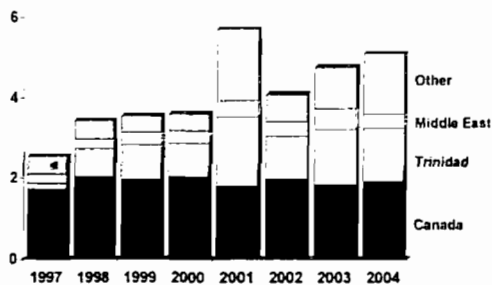
20

U.S. Ammonia Imports Million Product Tons



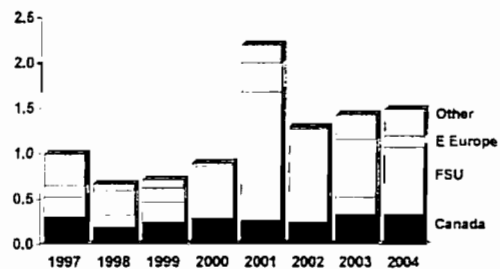
21

U.S. Dry Urea Imports Million Product Tons



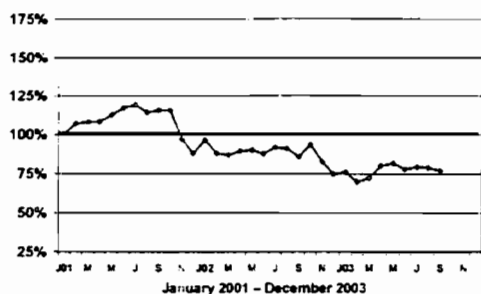
22

U.S. UAN Imports Million Tons 32% Equivalent

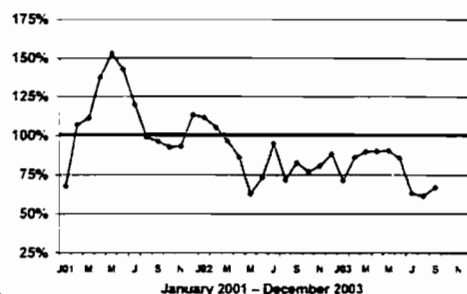


23

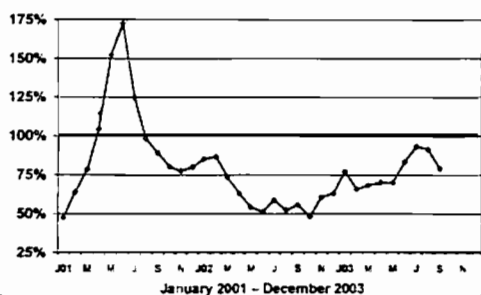
U.S. Ammonia Producer Inventory % of "Normal"



U.S. Urea Producer Inventory % of "Normal"



U.S. UAN Producer Inventory % of "Normal"



U.S. Ammonia Capacity FY 2003

	<u>U.S.</u> Million Tons	<u>% of Total</u>
Koch	3,195	18.4
Terra	2,790	16.0
PCS	2,290	13.2
CF	2,250	12.9
Agrium	1,840	10.6
Miss Chem	1,770	10.2
All Others	<u>3,261</u>	<u>18.7</u>
Total	17,396	100%

North America Ammonia Capacity FY 2003

	<u>U.S./Canada</u> Million Tons	<u>% of Total</u>
Agrium	4,165	18.1
Terra	3,270	14.2
Koch	3,195	13.9
CF	3,072	13.4
PCS	2,290	10.0
Miss Chem	1,770	7.7
All Others	<u>5,209</u>	<u>22.7</u>
Total	22,971	100%

North American Urea Capacity FY 2003

	<u>U.S.</u> Million Tons	<u>% of Total</u>
CF	1,930	33.1%
Agrium	1,260	21.6%
PCS	1,090	18.7%
Koch	620	10.6%
All Others	<u>930</u>	<u>16.0%</u>
Total	5,830	100%

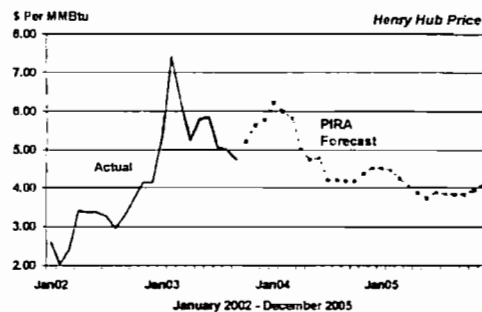
North American UAN Capacity FY 2003

	U.S. Million Tons	% of Total
Terra	3,607	30.2%
CF	2,190	18.3%
PCS	1,899	15.9%
Koch	1,627	13.6%
All Others	<u>2,631</u>	<u>22.0%</u>
Total	11,953	100%



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Natural Gas Prices



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Longer-Term Outlook

U.S. natural gas prices are expected to moderate but remain above historical averages. This will likely result in:

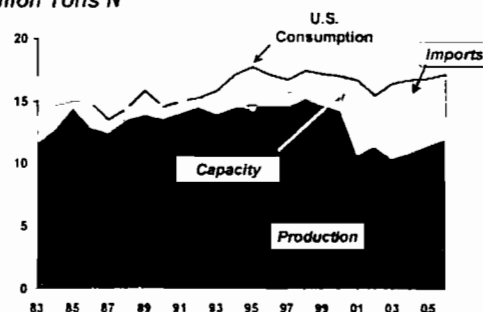
- Increased reliance on imports
- Further consolidation of U.S. industry
 - Industrial ammonia suppliers along Gulf coast likely to close and rely on imports
 - Some urea capacity likely to close due to increased offshore competition

Tightening world balance and access to large domestic market, however, will allow the bulk of the industry to remain competitive



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U.S. Nitrogen Supply/Demand Million Tons N



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PROCEEDINGS OF THE
THIRTY-THIRD
NORTH CENTRAL
EXTENSION-INDUSTRY
SOIL FERTILITY CONFERENCE

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