



# The Fertilizer Institute

Nourish, Replenish, Grow

## **Demand Destruction for Natural Gas in the U.S. Nitrogen Industry**

Harry Vroomen

Vice President, Economic Services

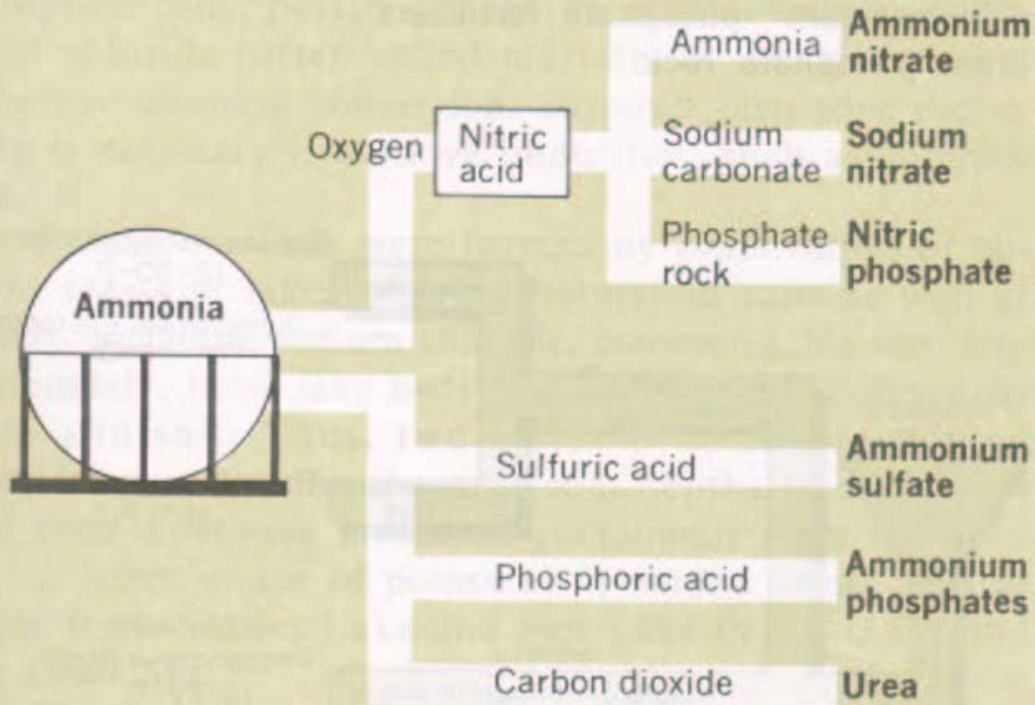


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FIGURE 2

**"Downstream" nitrogen fertilizers  
from anhydrous ammonia.**







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## U.S. Status in World Nitrogen Market - 2002

	<u>Rank</u>	<u>Share</u>	<u>Country</u>
Ammonia:			
Production	2	10.0 %	1 - China
Imports	1	34.8 %	
Urea:			
Production	3	6.5 %	1 – China; 2 - India
Imports	1	15.5 %	
Ammonium Nitrate:			
Production	2	20.1 %	1 - Russia
Imports	2	9.5 %	1 - China
Ammonium sulfate:			
Production	1	15.1 %	
Exports	3	12.0 %	1 – Belgium; 2 – Russia
N Consumption	3	12.8 %	1 – China; 2 – India

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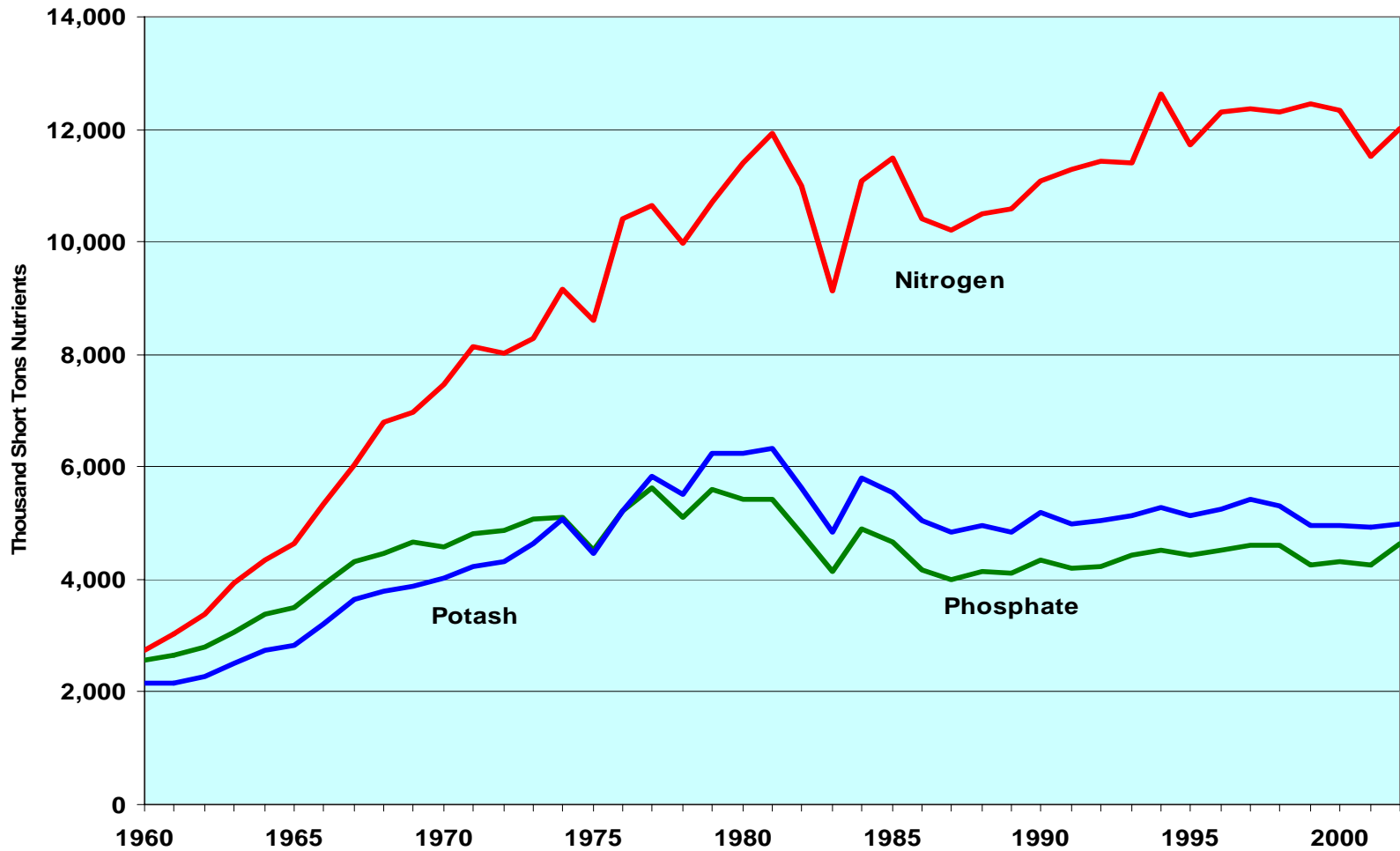
Computed from IFA data.



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**U.S. Fertilizer Nutrient Consumption**



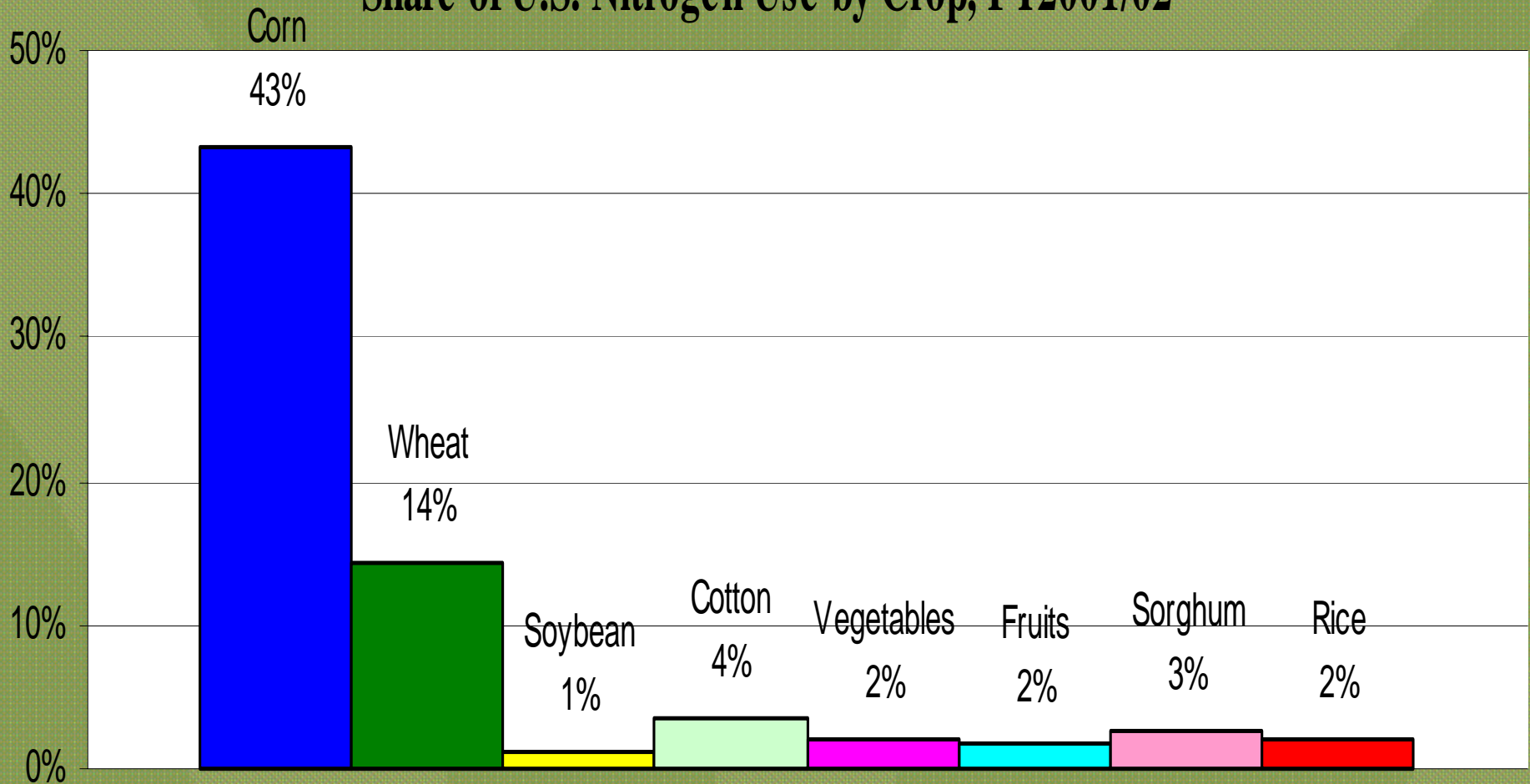




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## Share of U.S. Nitrogen Use by Crop, FY2001/02

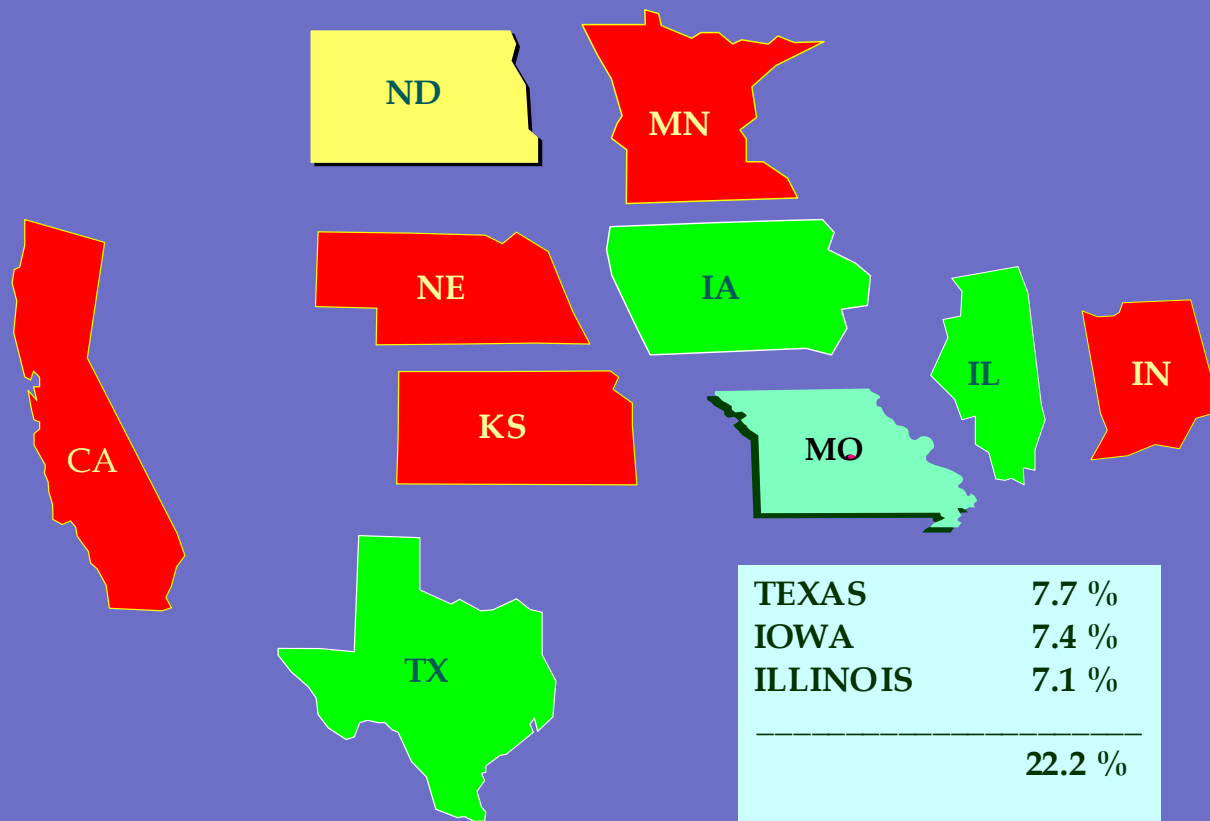




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## 10 States Account For 60 % of U.S. Nitrogen Use



Source: AAPFCO and TFI.

FY 2001/02

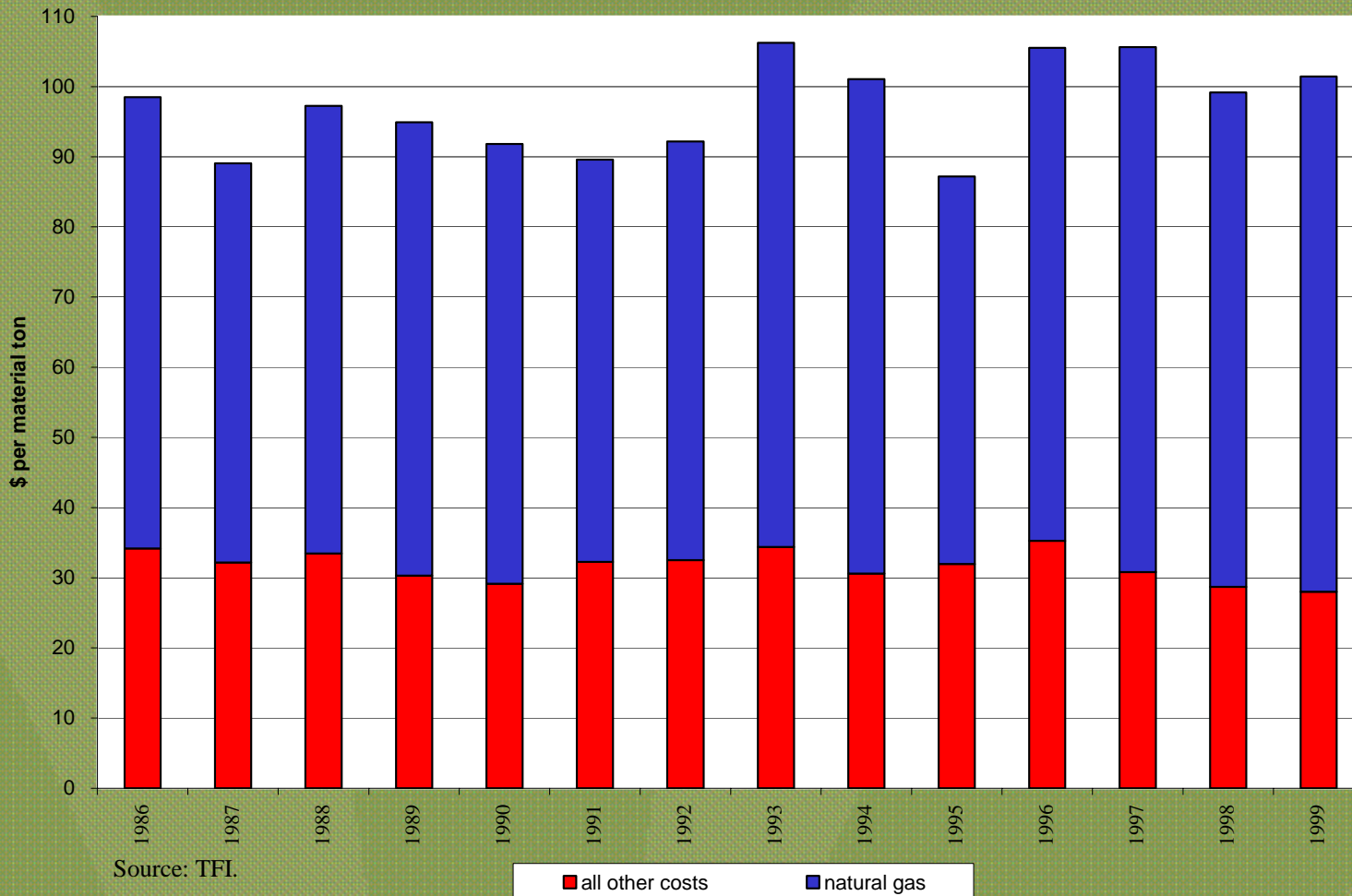




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## Ave. U.S. Ammonia Production Cost

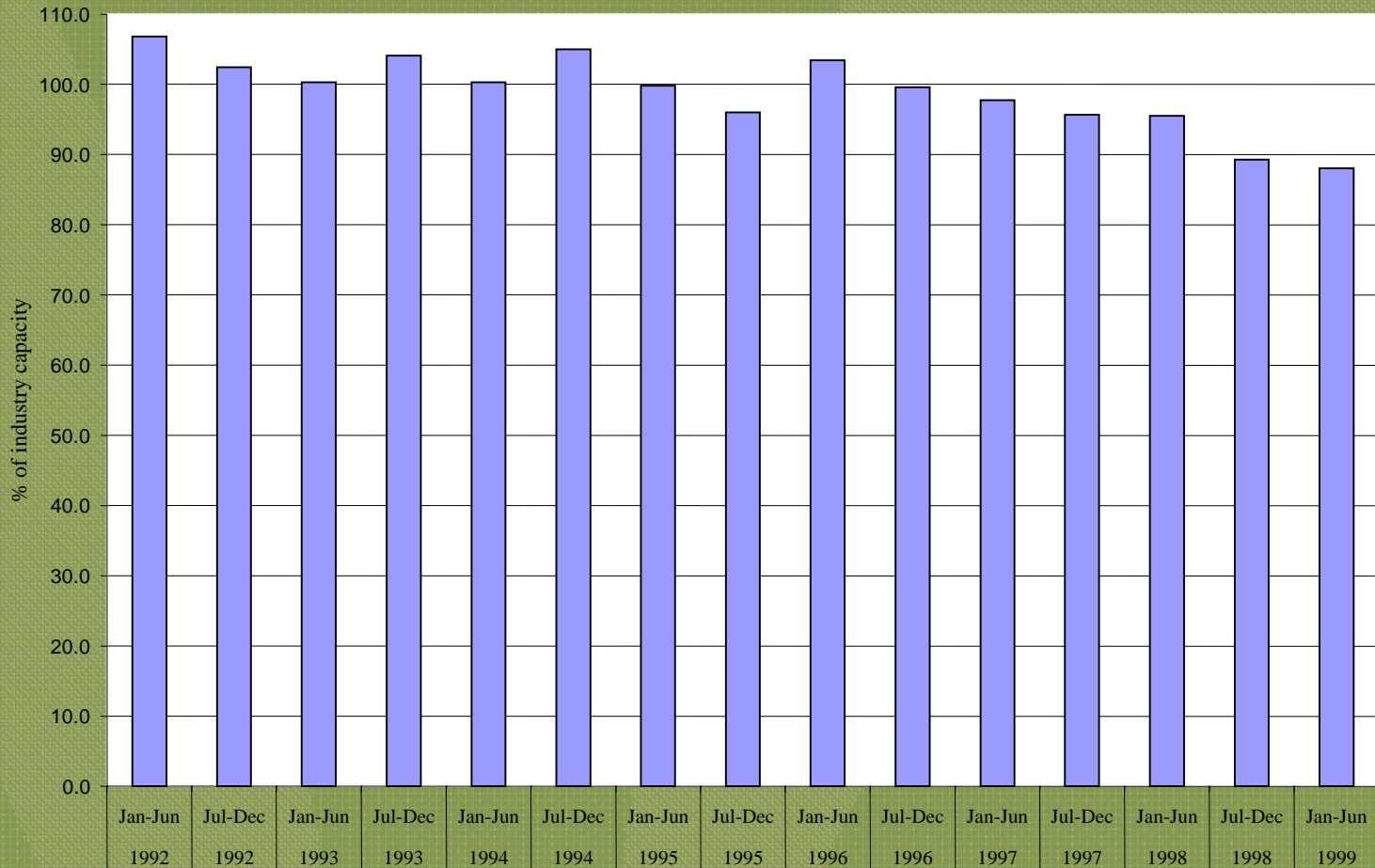




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## U.S. Ammonia Operating Rates, 1992-1999



Source: TFI

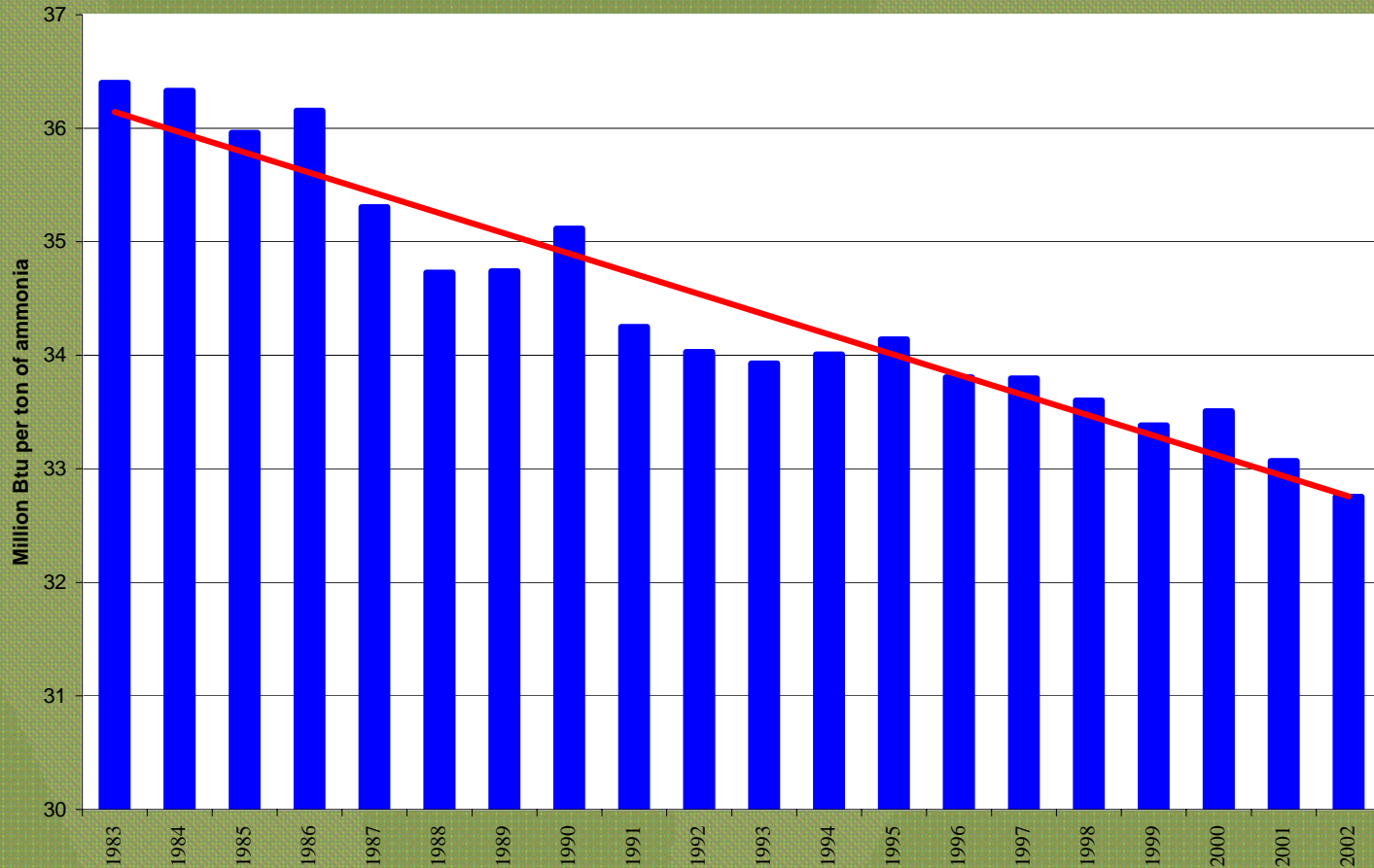




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## Natural Gas Required to Produce a Ton of Anhydrous Ammonia



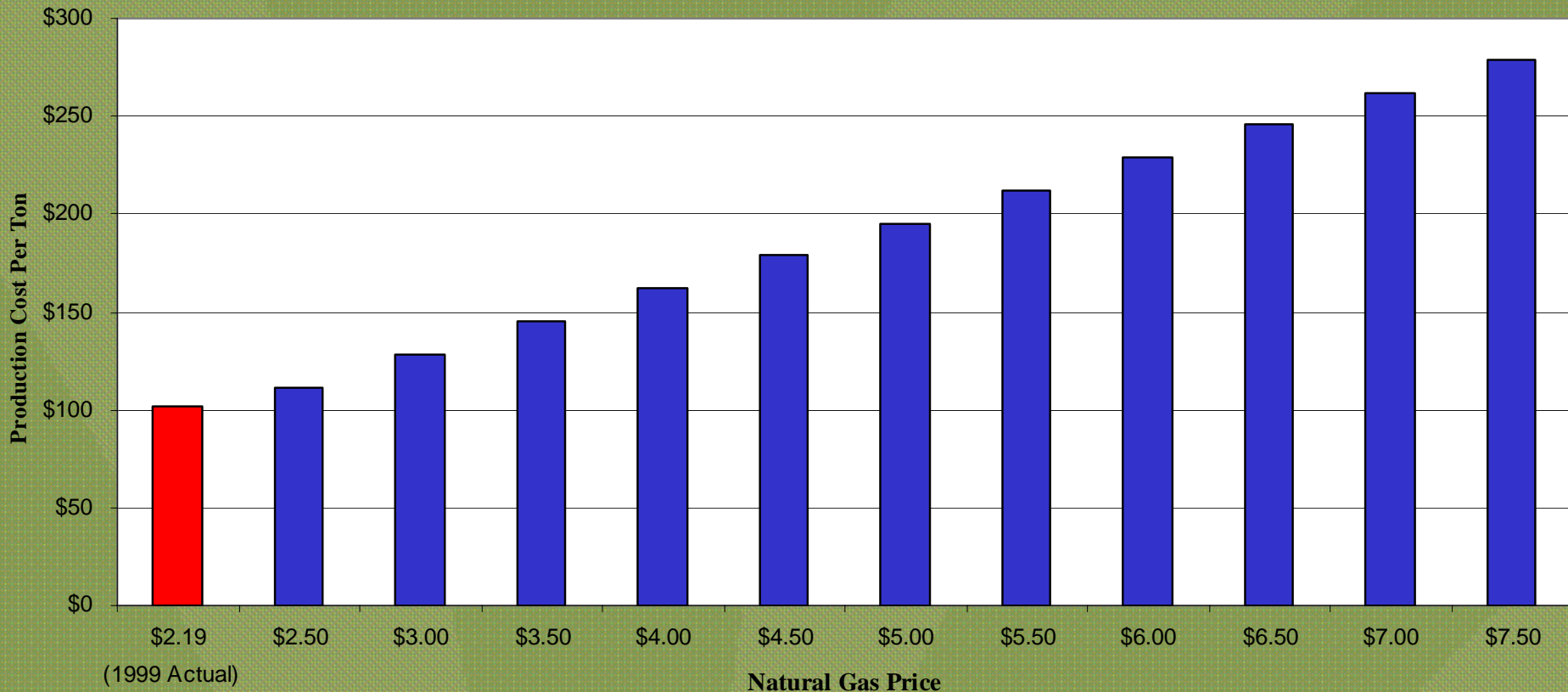
Source: TFI.



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## Average Anhydrous Ammonia Production Cost at various levels of Natural Gas Price - 1999 Base Year



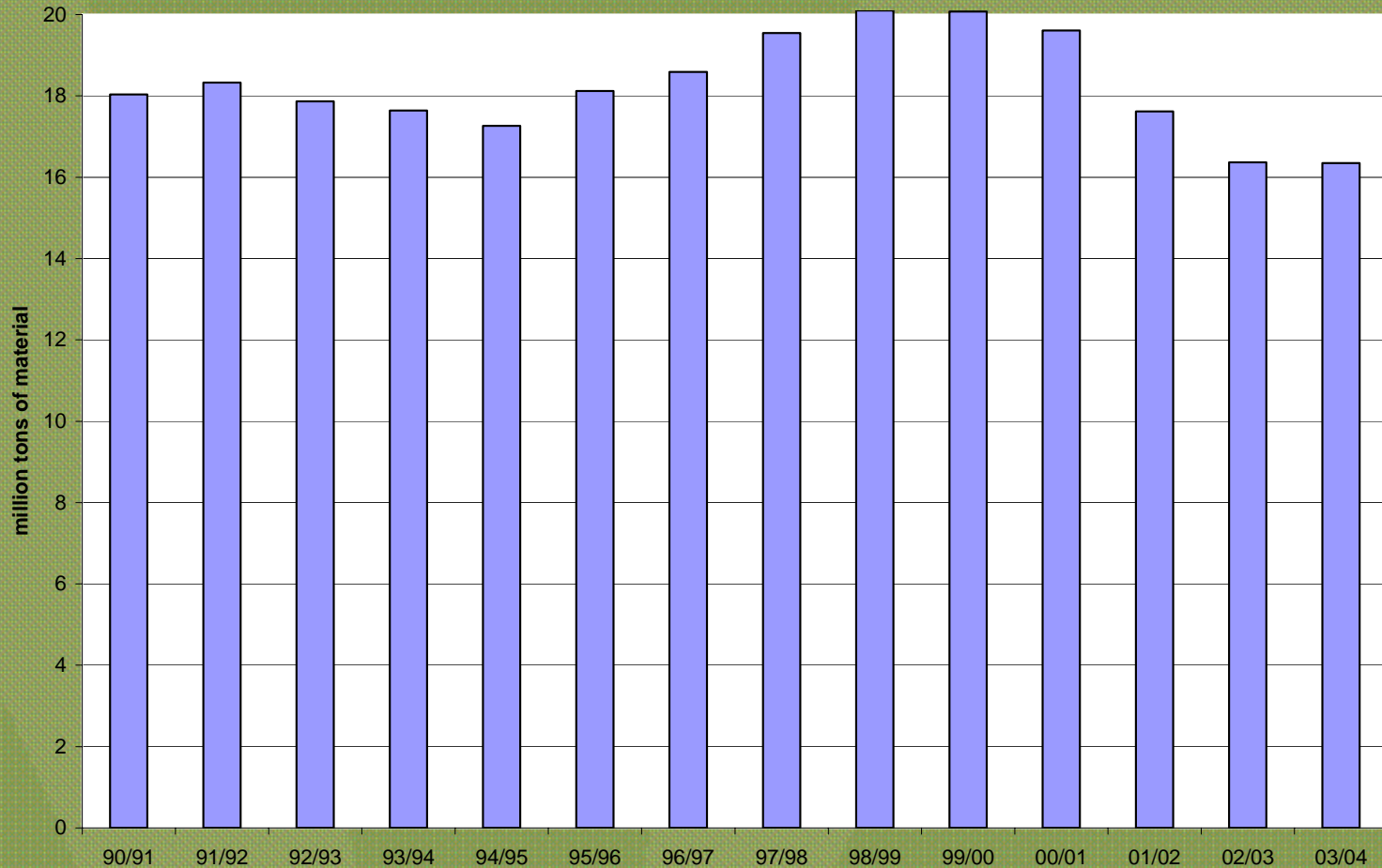




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## U.S. Anhydrous Ammonia Production Capacity



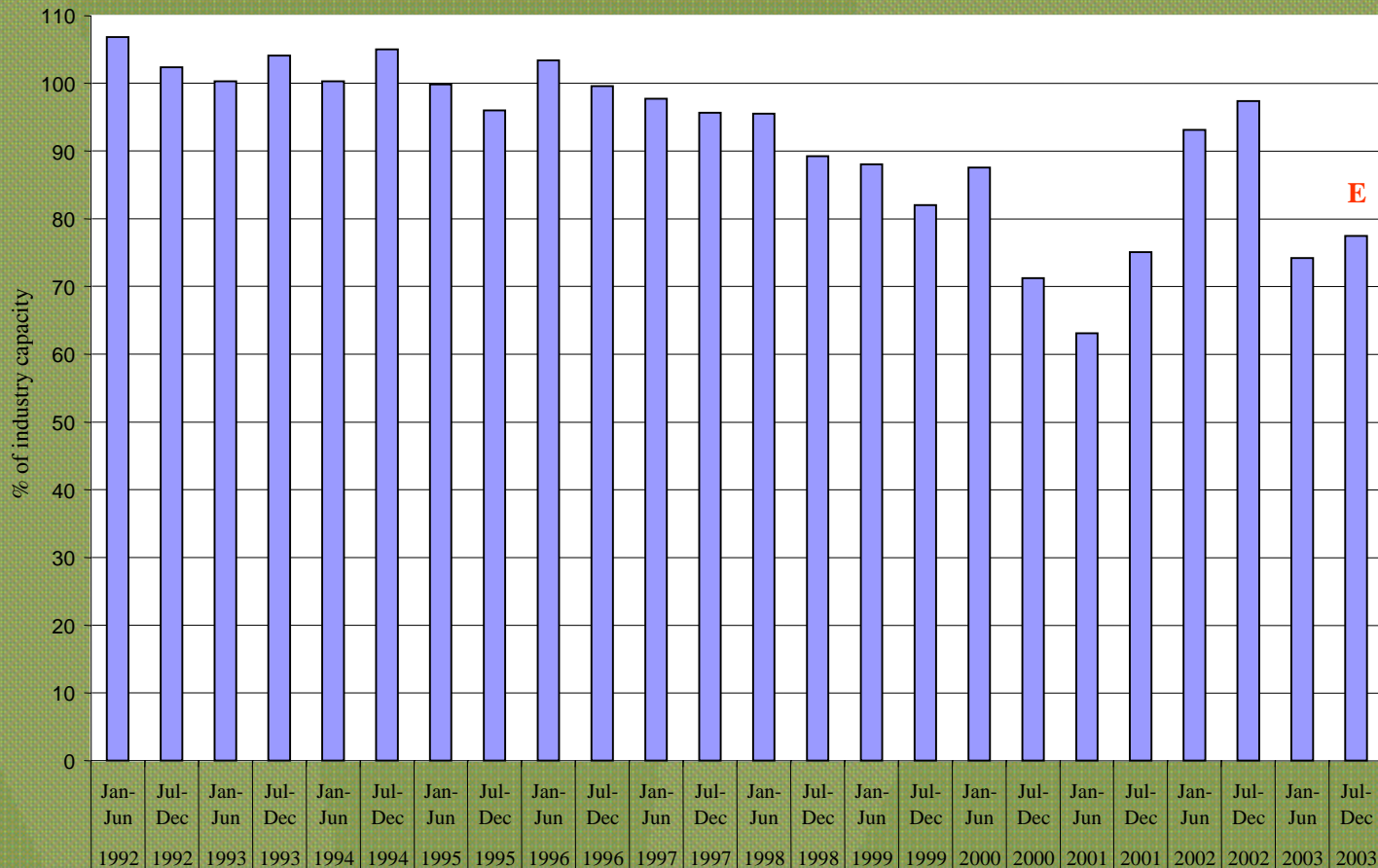
Source: IFDC.



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## U.S. Ammonia Operating Rates, 1992-2003



Source: TFI

E = estimated

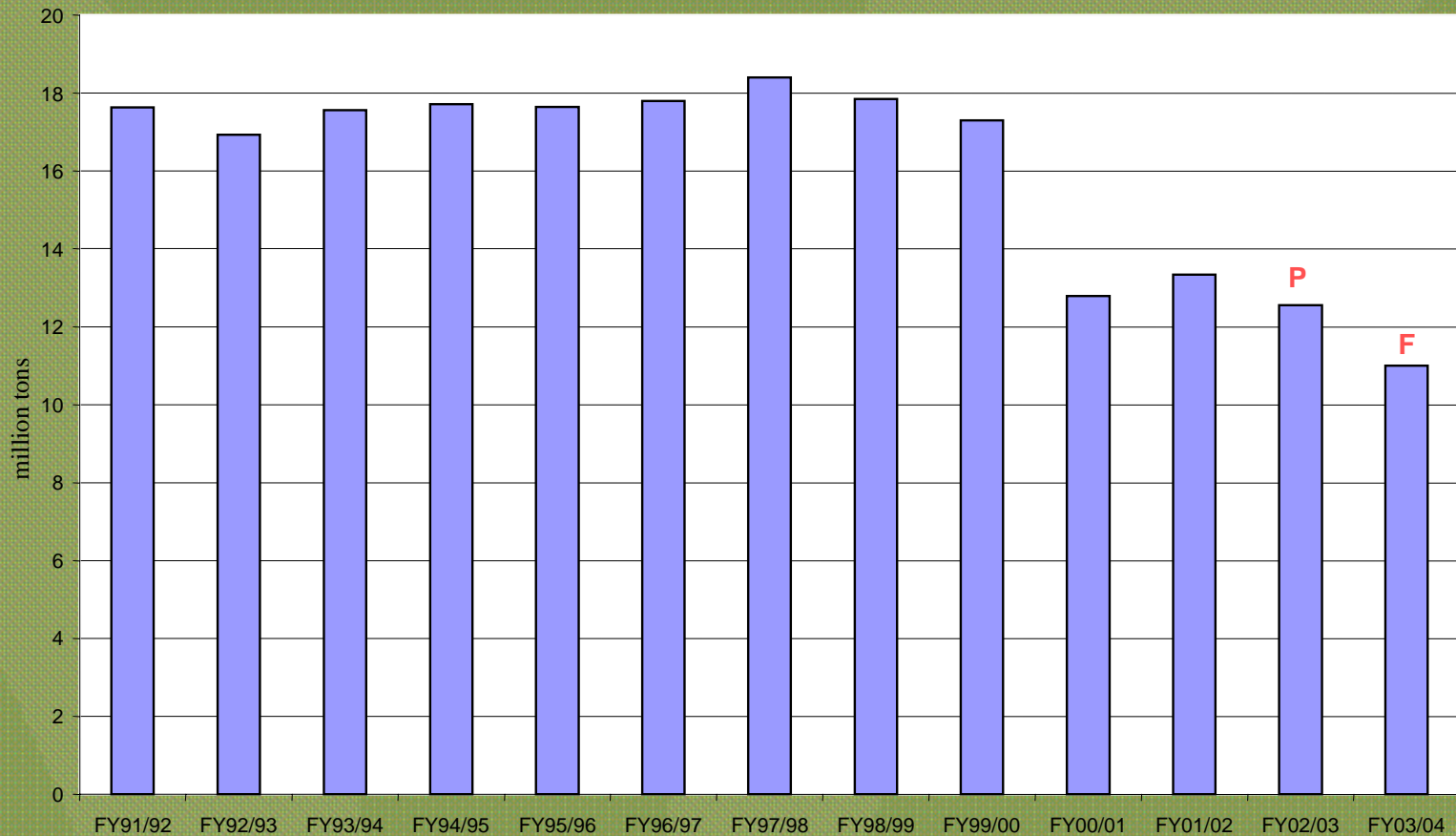




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## US Anhydrous Ammonia Production



Source: FY91/92 - FY02/03, U.S. Dept. of Commerce; FY03/04, TFI estimate.

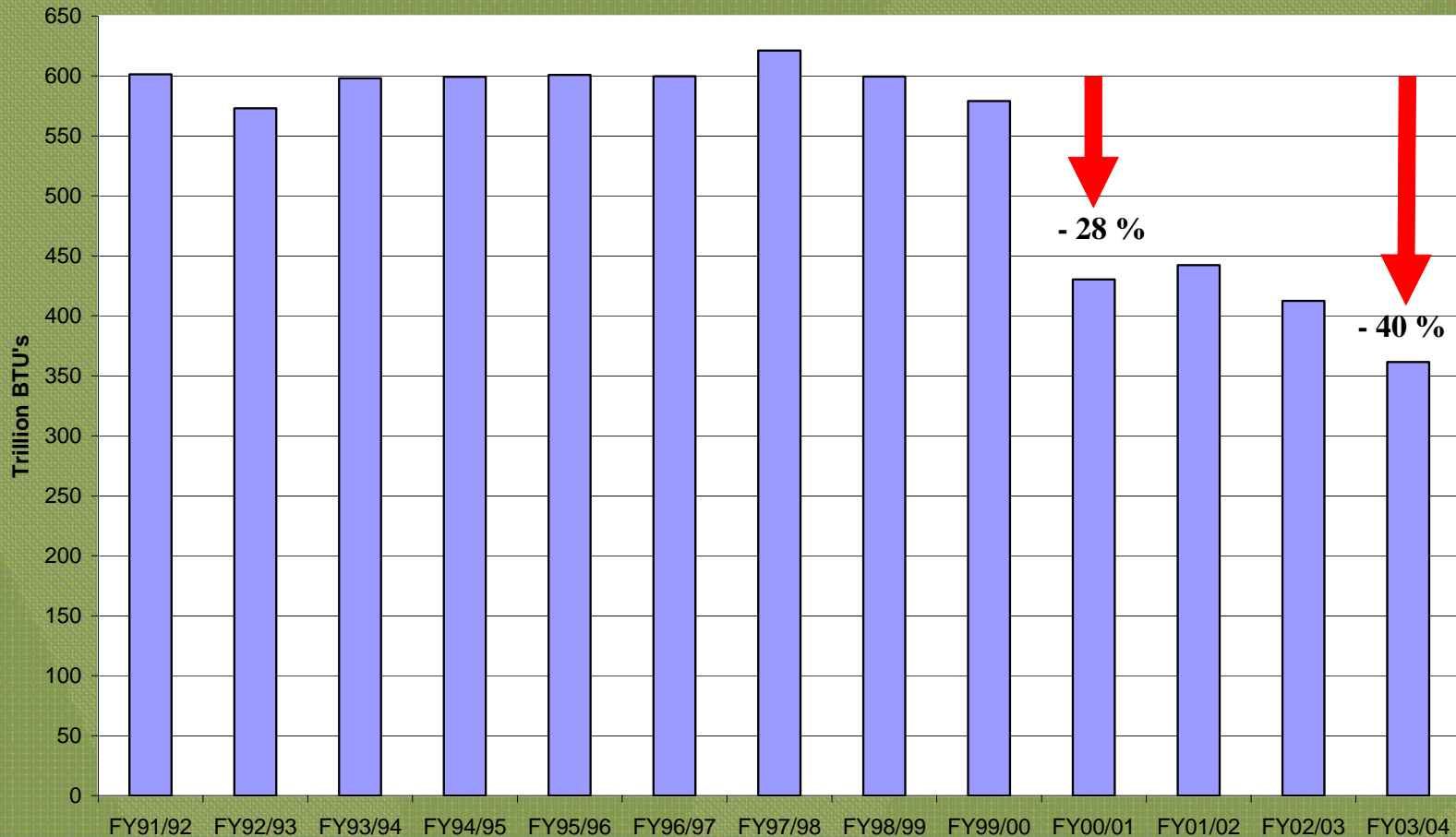
P = preliminary; F = forecast.



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## Estimated Natural Gas Use in U.S. Ammonia Production



Source: TFI.

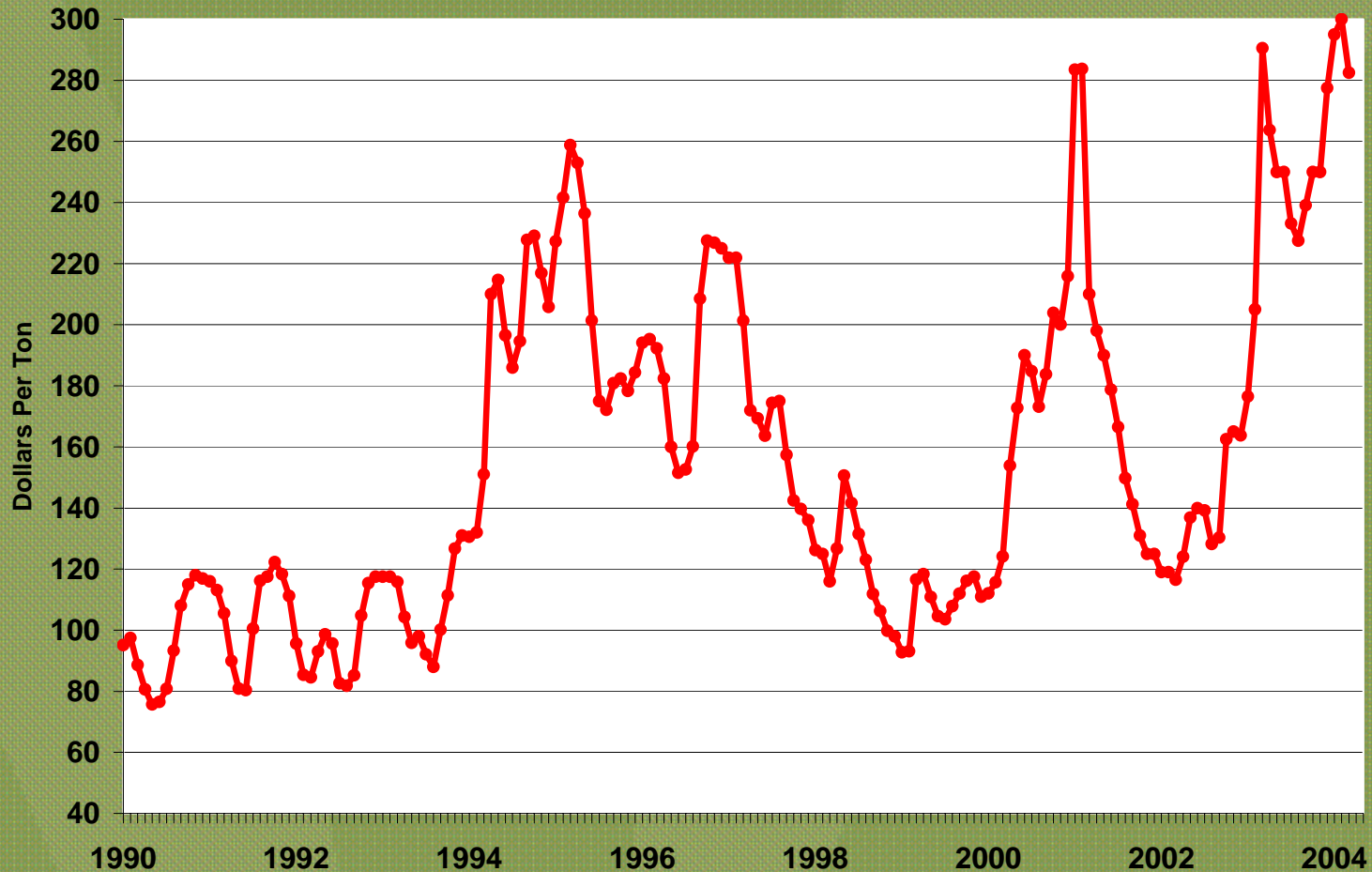




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## U.S. Ammonia Prices – U.S. Gulf, f.o.b.



Source: Computed from data reported in Green Markets



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## World Nitrogen Consumption

