Sulphur Outlook

Presentation to 2005 TFI-FIRT Fertilizer Outlook and Technology Conference

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The Sulphur Institute
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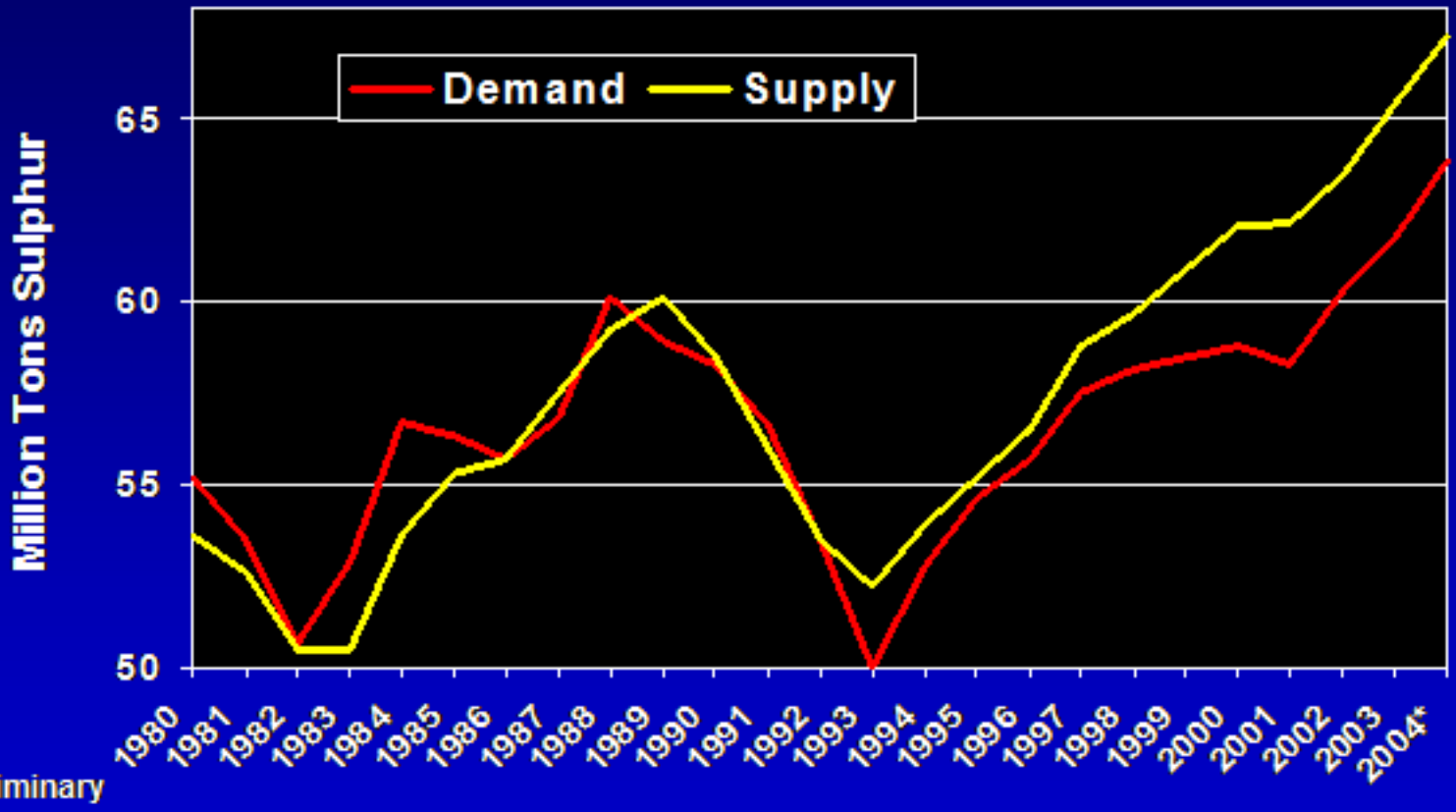
The Sulphur Institute:

Industry-supported non-profit organization established to promote and expand uses of sulphur in all its forms around the world:

- **Market Expansion**
- **Market Analysis**
- **Transportation and Regulatory Issues**
- **Technical Support**

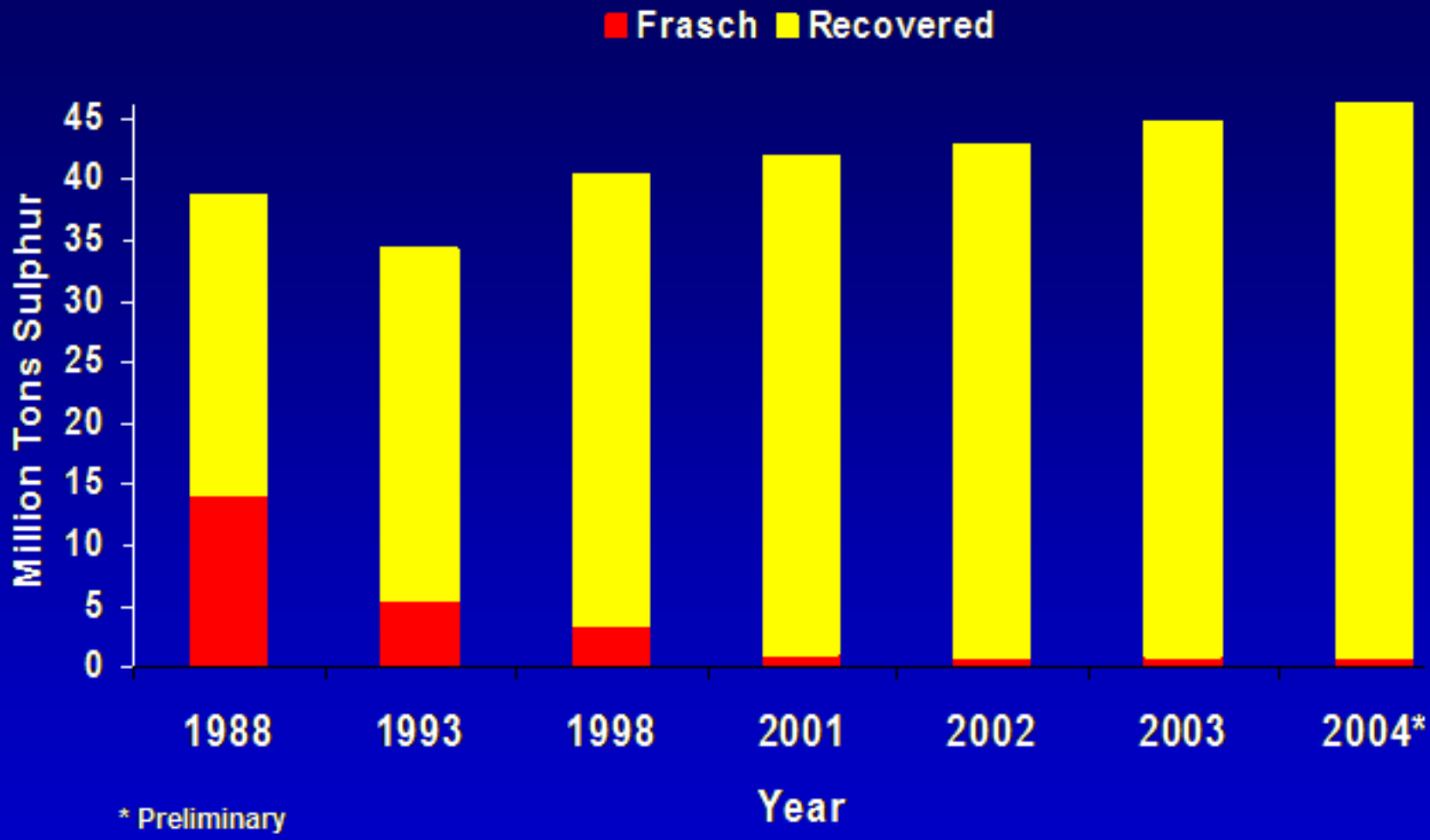
Fundamental Sulphur Supply and Demand Changes



*Preliminary

Production cannot be curtailed, more sour crudes/gas, and cleaner fuels accelerate output, demand primarily dependent on phosphate growth. Will the current surplus continue?

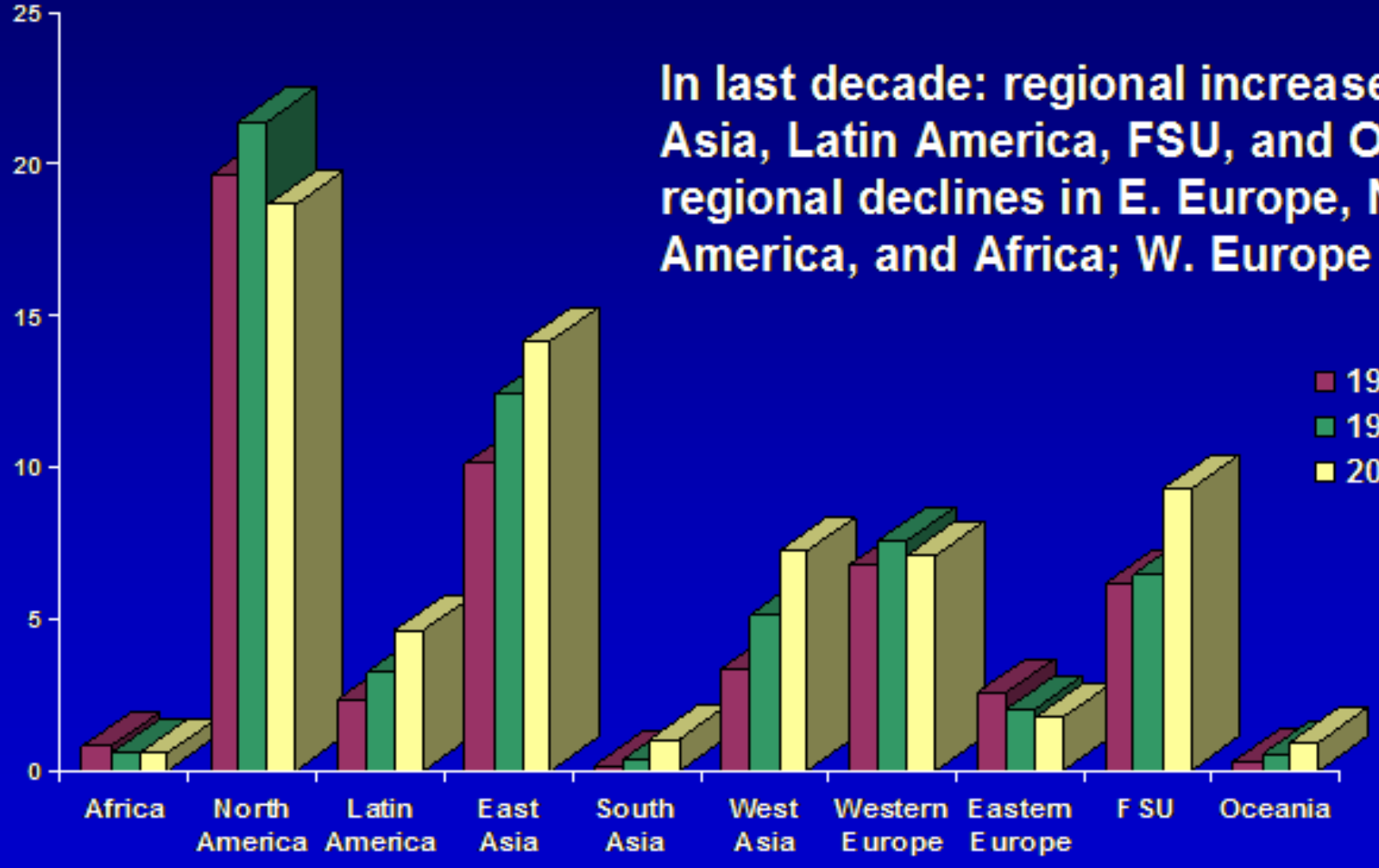
World Elemental Sulphur Production



From 1988 to 2003 total production increased by 15%; recovered sulphur production increased by 78%.

Regional Sulphur Production

Million Tons S



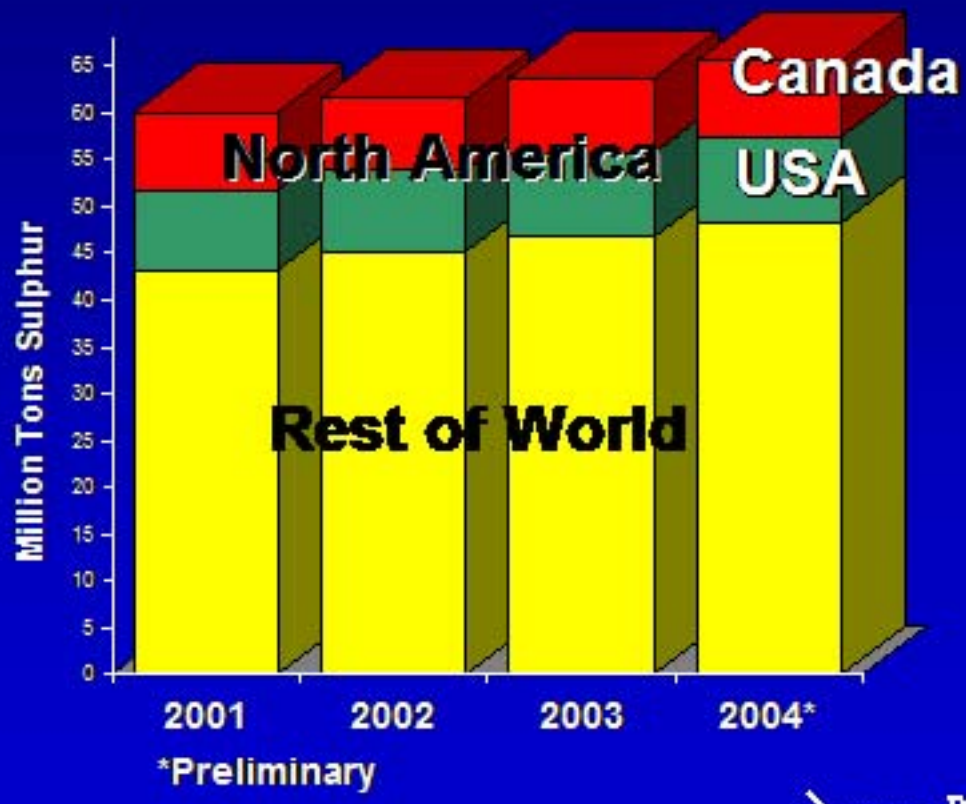
In last decade: regional increases in Asia, Latin America, FSU, and Oceania; regional declines in E. Europe, North America, and Africa; W. Europe stable.

* Preliminary

World Sulphur Production

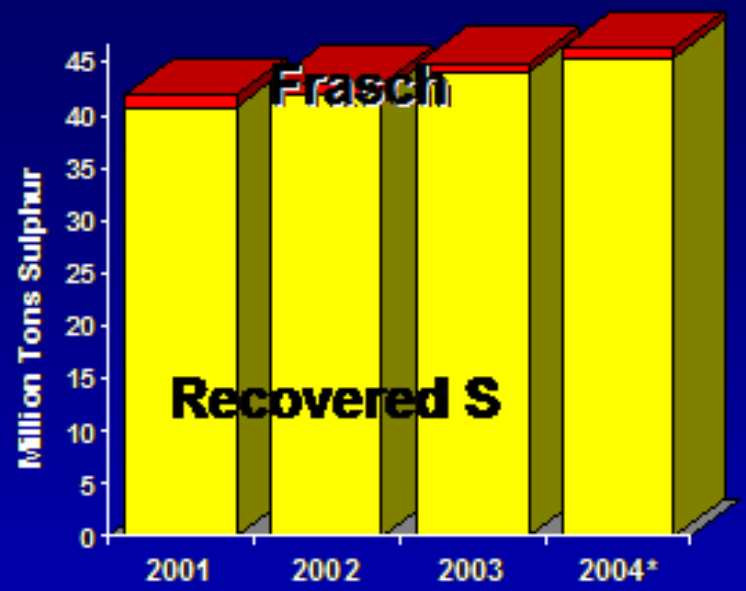
- Production in 2003 up 3.0%, up from 2.1% growth rate of 2002: growth in N. America after 2002 decline; slower growth in FSU and West Asia from previously high rates.

- More strong growth projected for 2004, at 2.9%

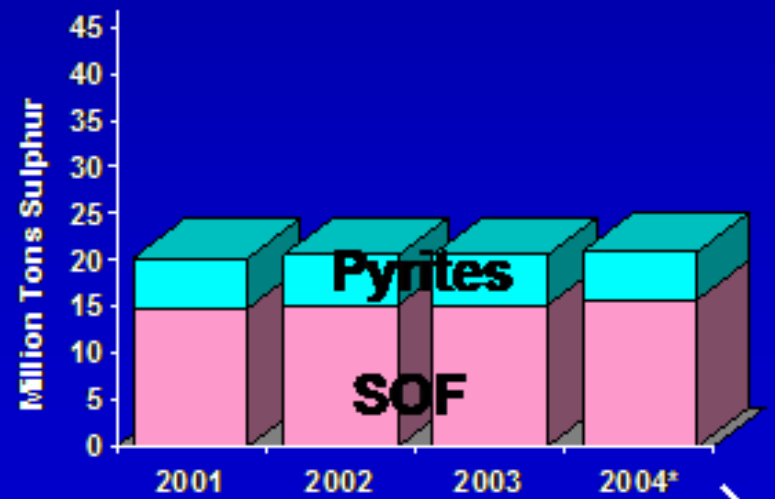


World Sulphur Production

Elemental Sulphur: production increase running at 4.4% annual growth. Recovered increase overwhelms decline in Frasch.



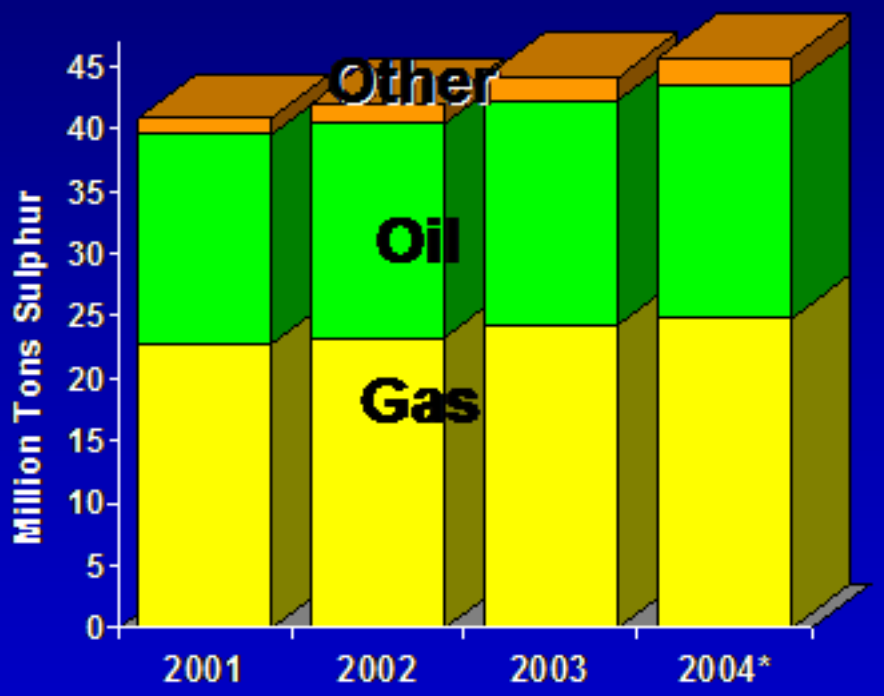
Sulphuric acid: slower growth from smelter closures and soft metals markets, but now growing. Recent increase in Chinese pyrites buoyed by strong local S market, but forecast to decline.



*Preliminary

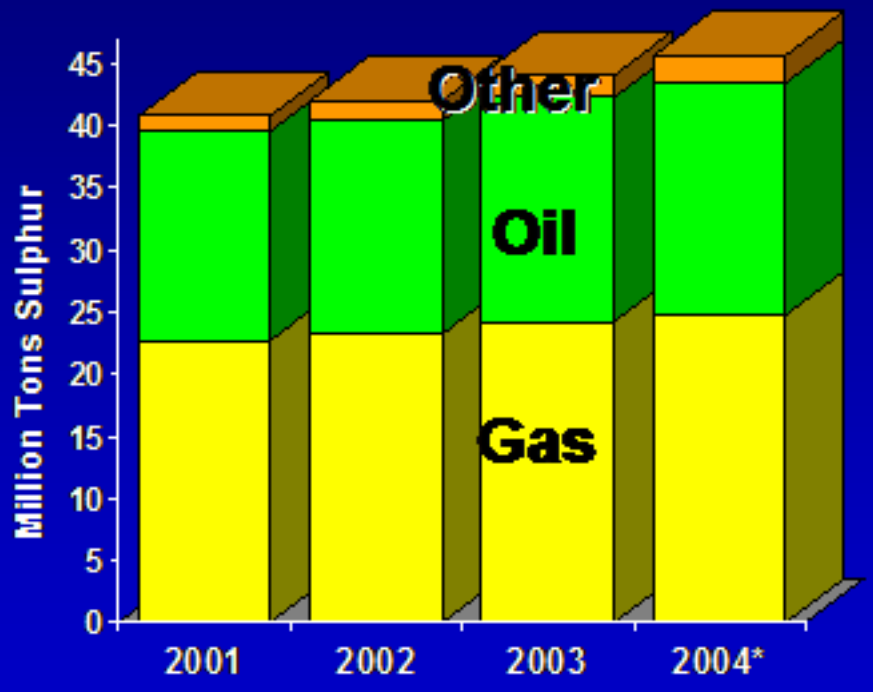
World Recovered Sulphur Production: 2003

- Production up 3.8%:
- Faster gas-recovered growth: increased N. American output more than offsets slower FSU and W. Asian growth
- Highest oil-recovered output increase since 1998: more sour crudes and higher capacity spurred by fuel quality regulations
- Oil sands output continued to rise, although slower than in 2002



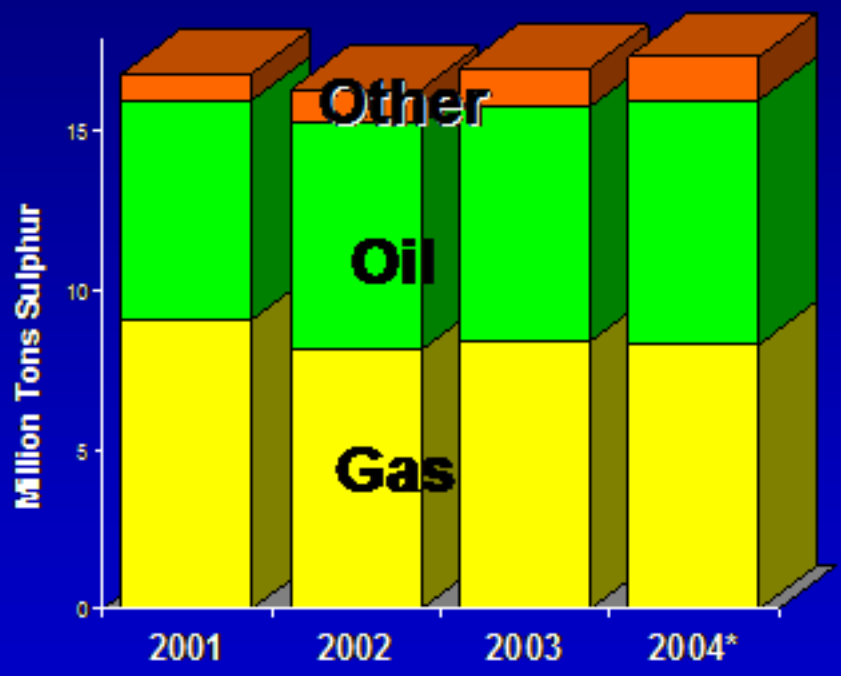
World Recovered Sulphur Production: 2004 Preliminary

- Production up 3.6%:
- Lower gas-recovered growth, with W. Asia offsetting slower growth in FSU and N. America
- Strong oil-recovered output growth on track from more sour crudes (record sweet/sour spreads) and fuel quality regulations
- Oil sands output strong rise: Canada and Venezuela



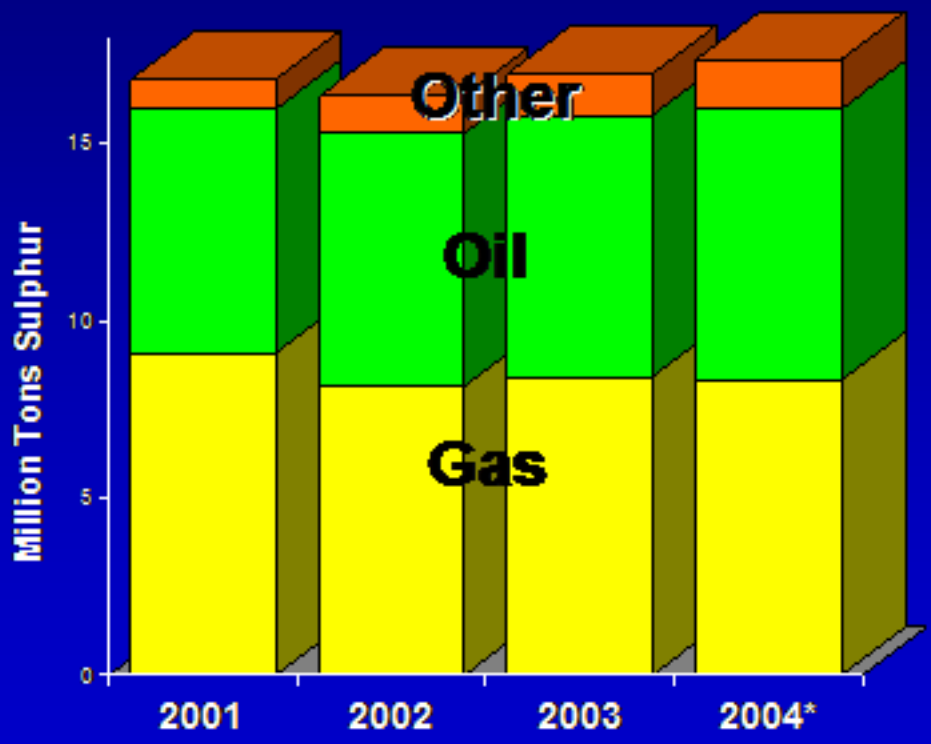
North American Recovered Sulphur Production: 2003

- Production up 4.0%:
  - Higher U.S. oil-recovered, Canadian oil sand, and gas-recovered
  - US oil-recovered production spurred by rising demand, more sour crudes, and stringent fuel quality regulations
  - Increase in Canadian gas reverts earlier decline but deemed temporary
  - Oil sands output continues to rise, but distant from markets

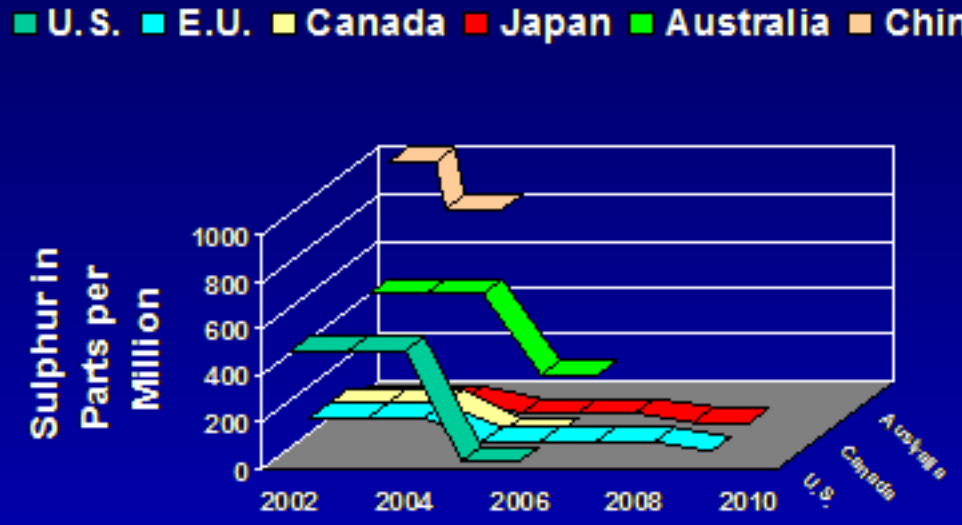


North American Recovered Sulphur Production: 2004 Preliminary

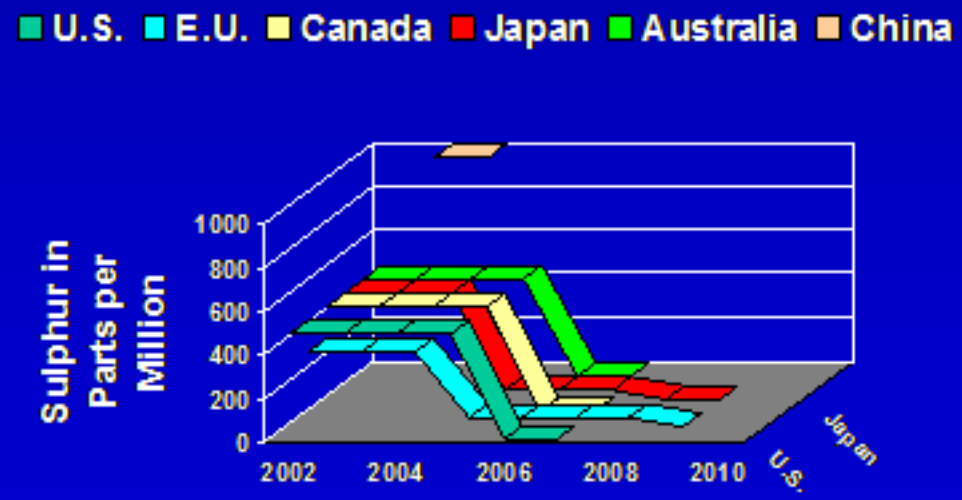
- **Production up 1.4%:**
  - Increased oil-recovered production in US and Canadian oil sands partly offset by declining Canadian gas-recovered
  - Oil-recovered output growth on track from more sour crudes (record WTI/Maya sweet/sour spreads) and fuel quality regulations
  - Oil sands output strong rise in Canada



Clean Fuel Sulphur Regulations are Increasing Sulphur Supply



Gasoline

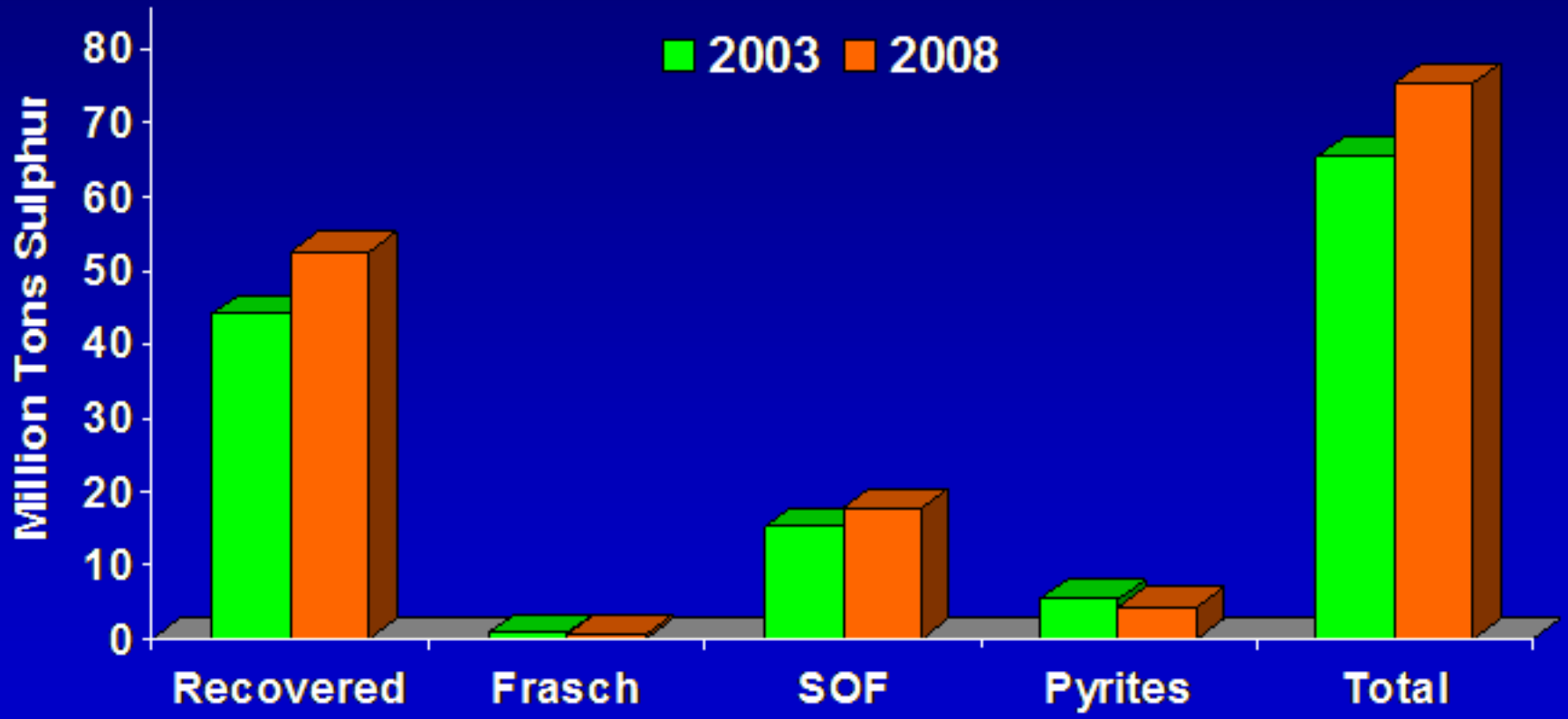


Diesel

Will the U.S. be Next on Marine Fuel Sulphur Regulation?

- At recent U.S. Bunker Meeting: "We could see S Emission Control Areas on the US coasts within five years"
- California Air Resources Board is studying a plan that would call for the burning of 0.2% SOx low sulphur distillate by 2006 and 0.1% SOx in 2007 when in Californian coastal waters

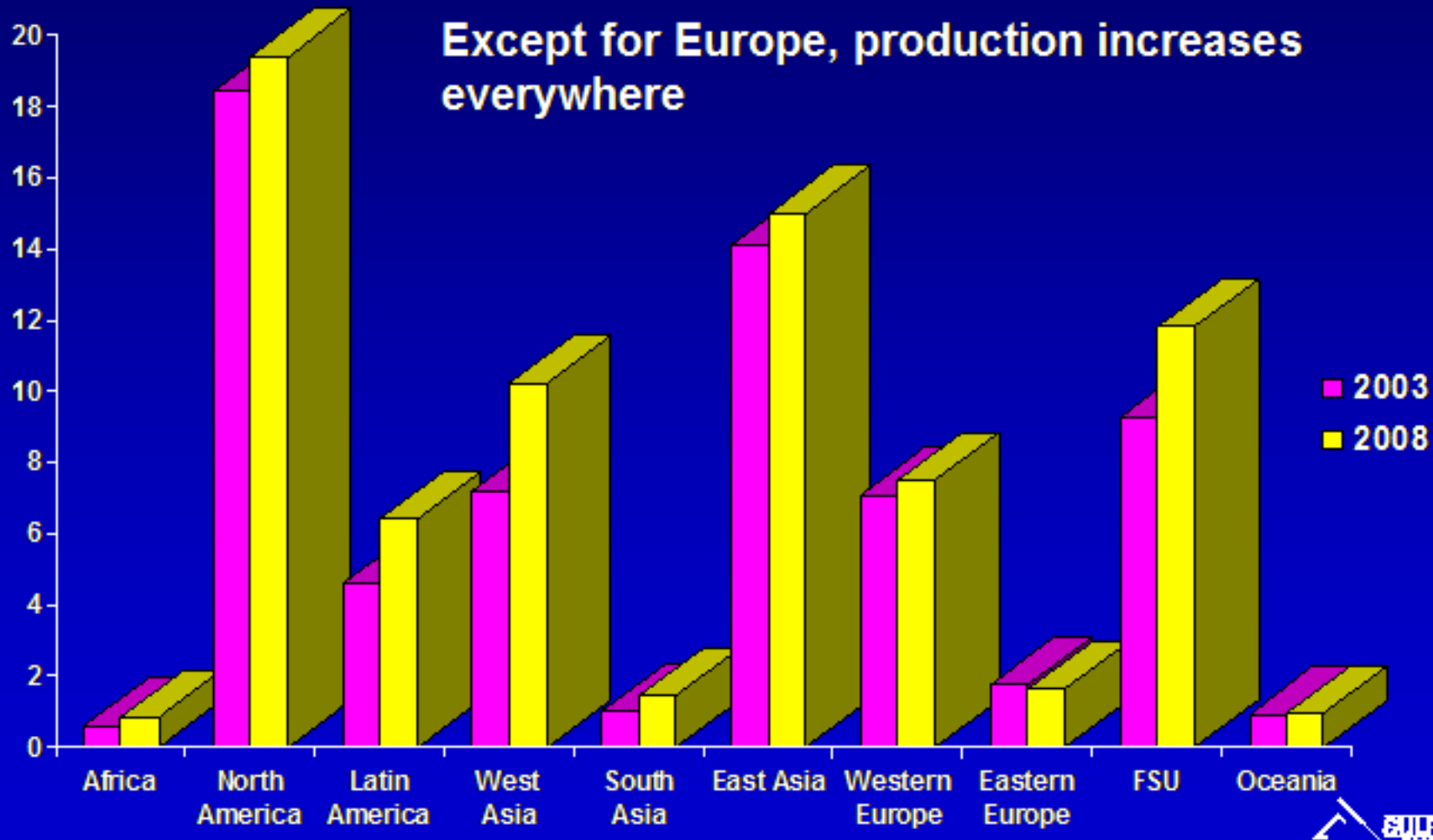
World Sulphur Production by Type Forecast



Average annual growth 3%

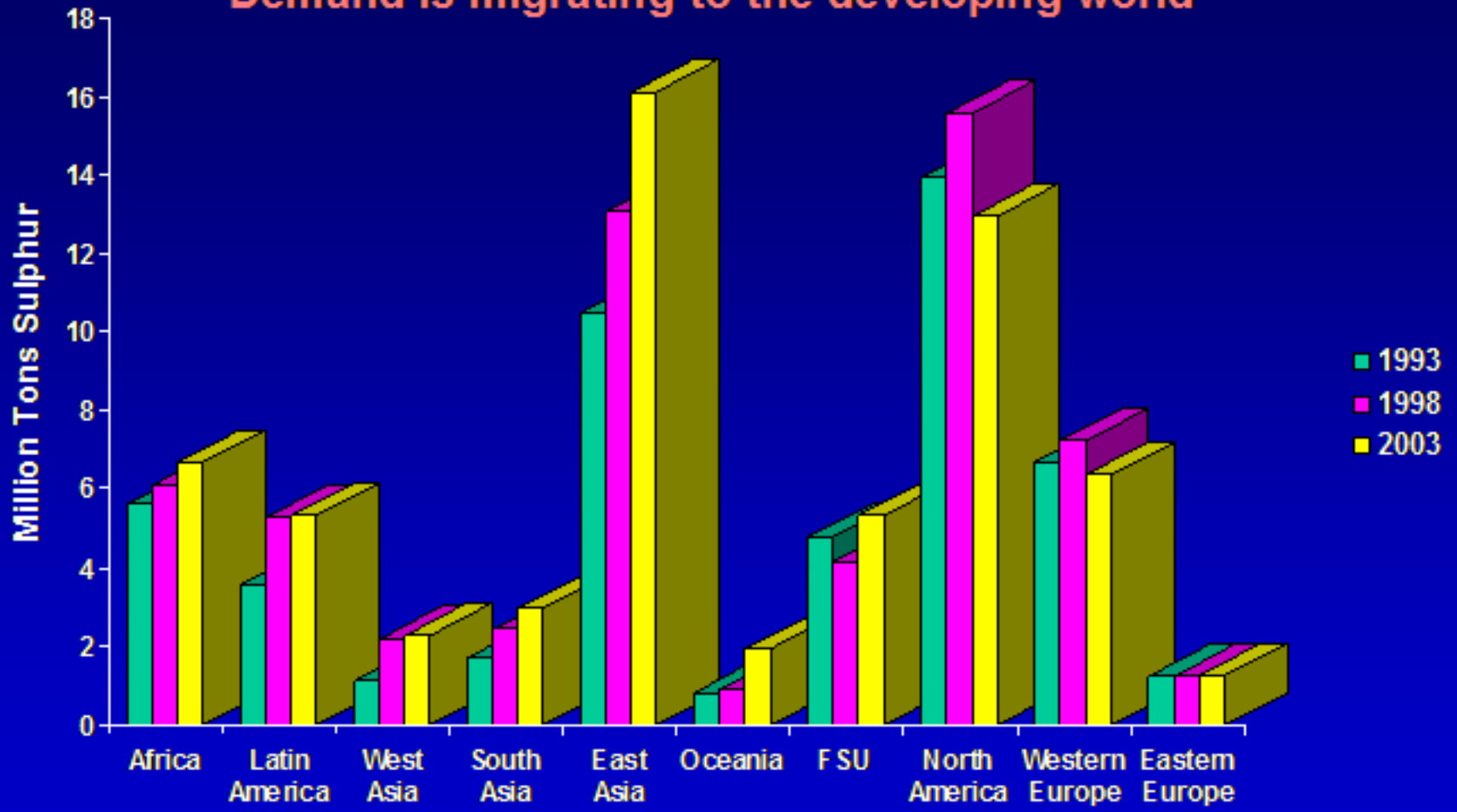
Regional Sulphur in All Forms Production Forecast*

Million Tons Sulphur



Regional Sulphur Consumption

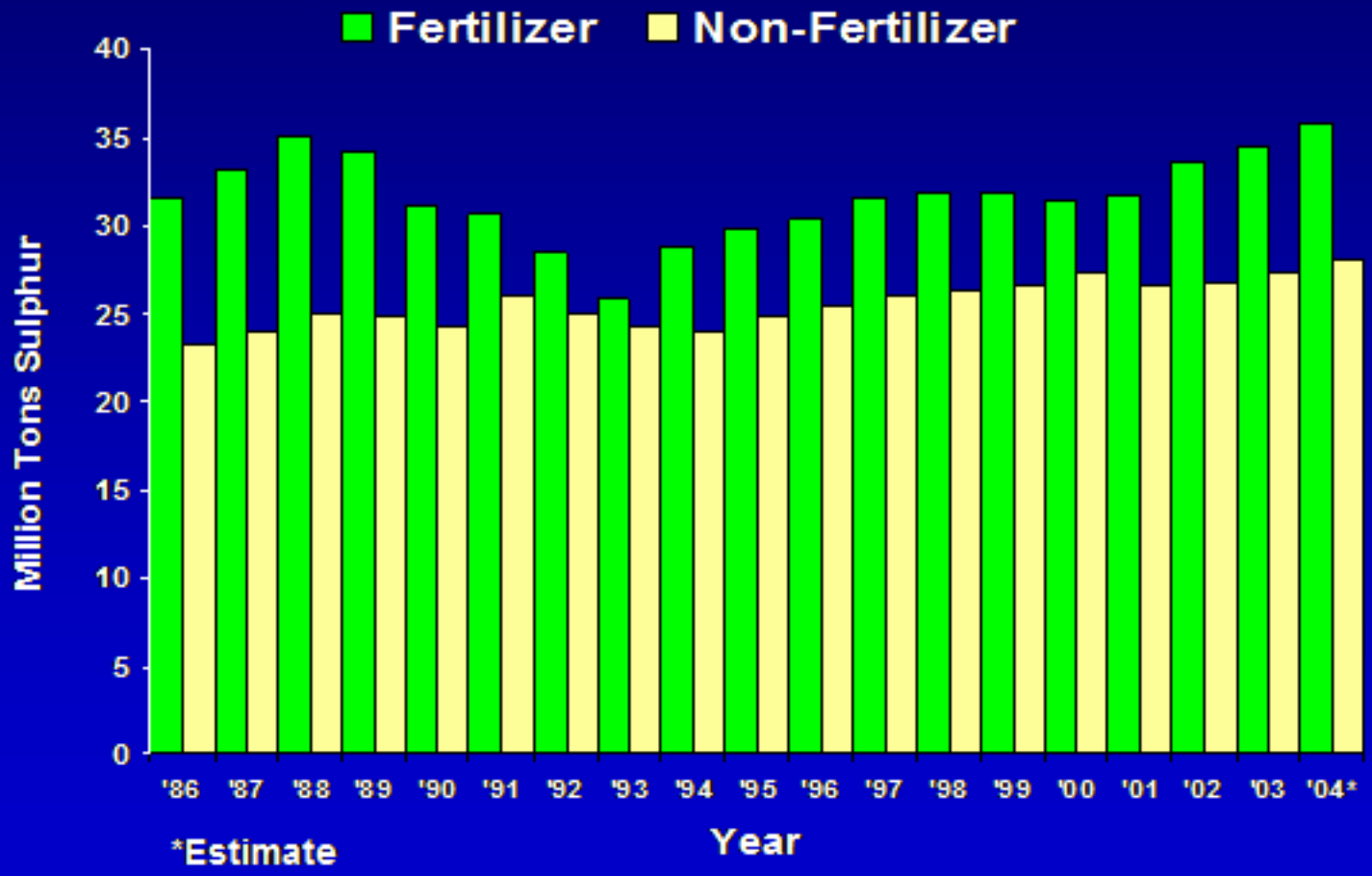
Demand is migrating to the developing world



In last decade: regional growth in Asia, Latin America, Africa, and Oceania. Recent recovery in FSU. Regional declines in North America and Europe. East Asia is largest sulphur consumer since 2000

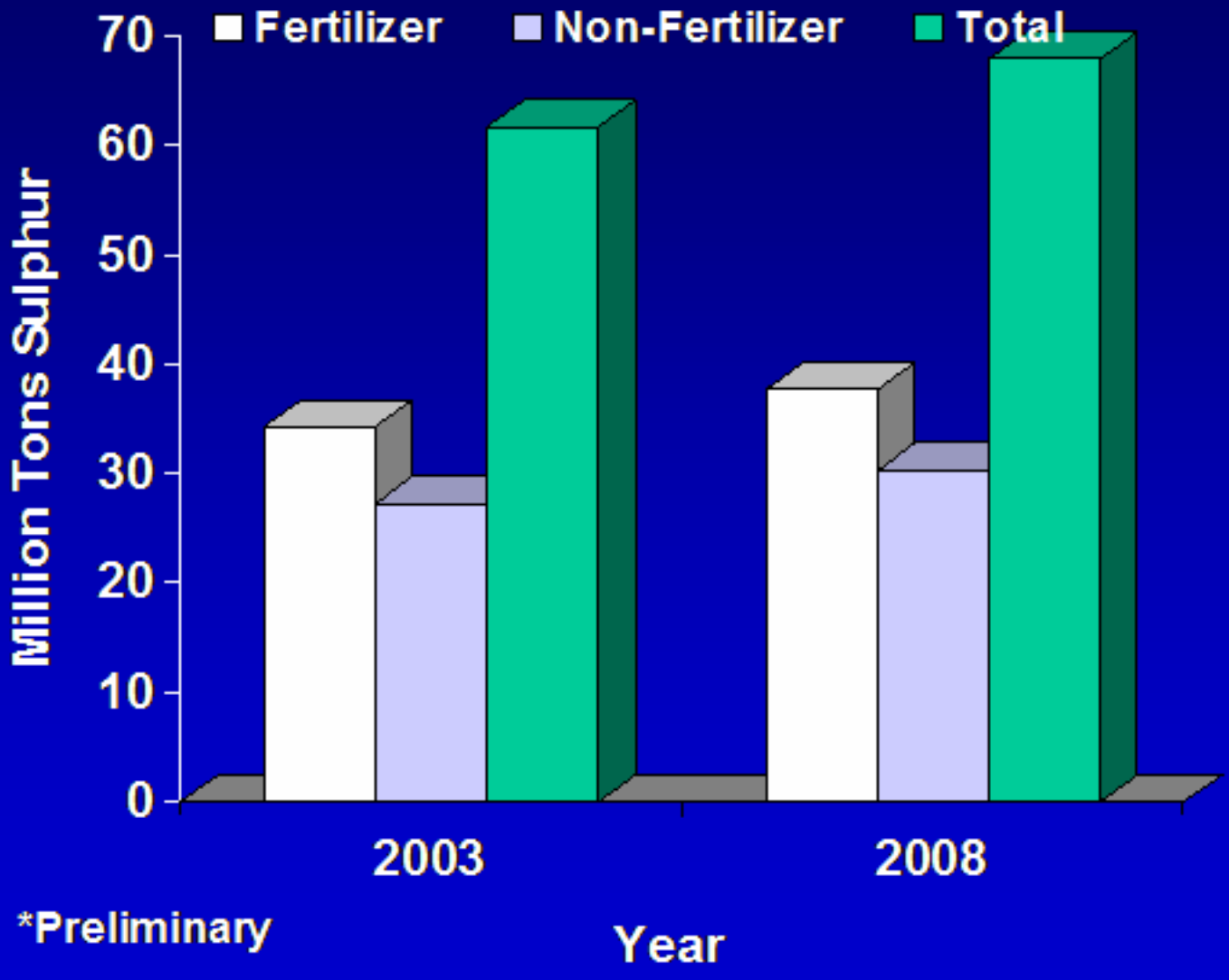
Sulphur Consumption by Major End Use

95% consumed as sulphuric acid
55% consumed for phosphate fertilizer manufacture



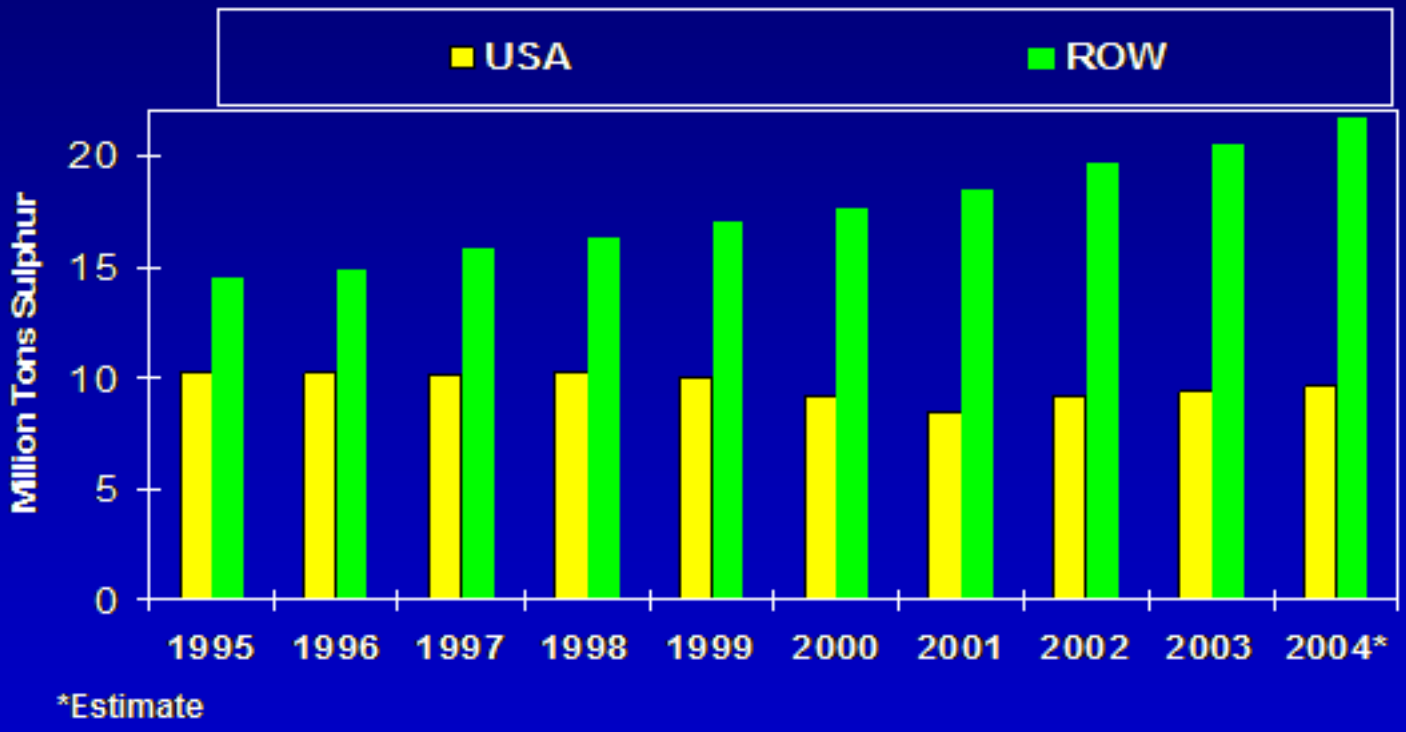
Demand growth slower than supply

World Sulphur Consumption Forecast*



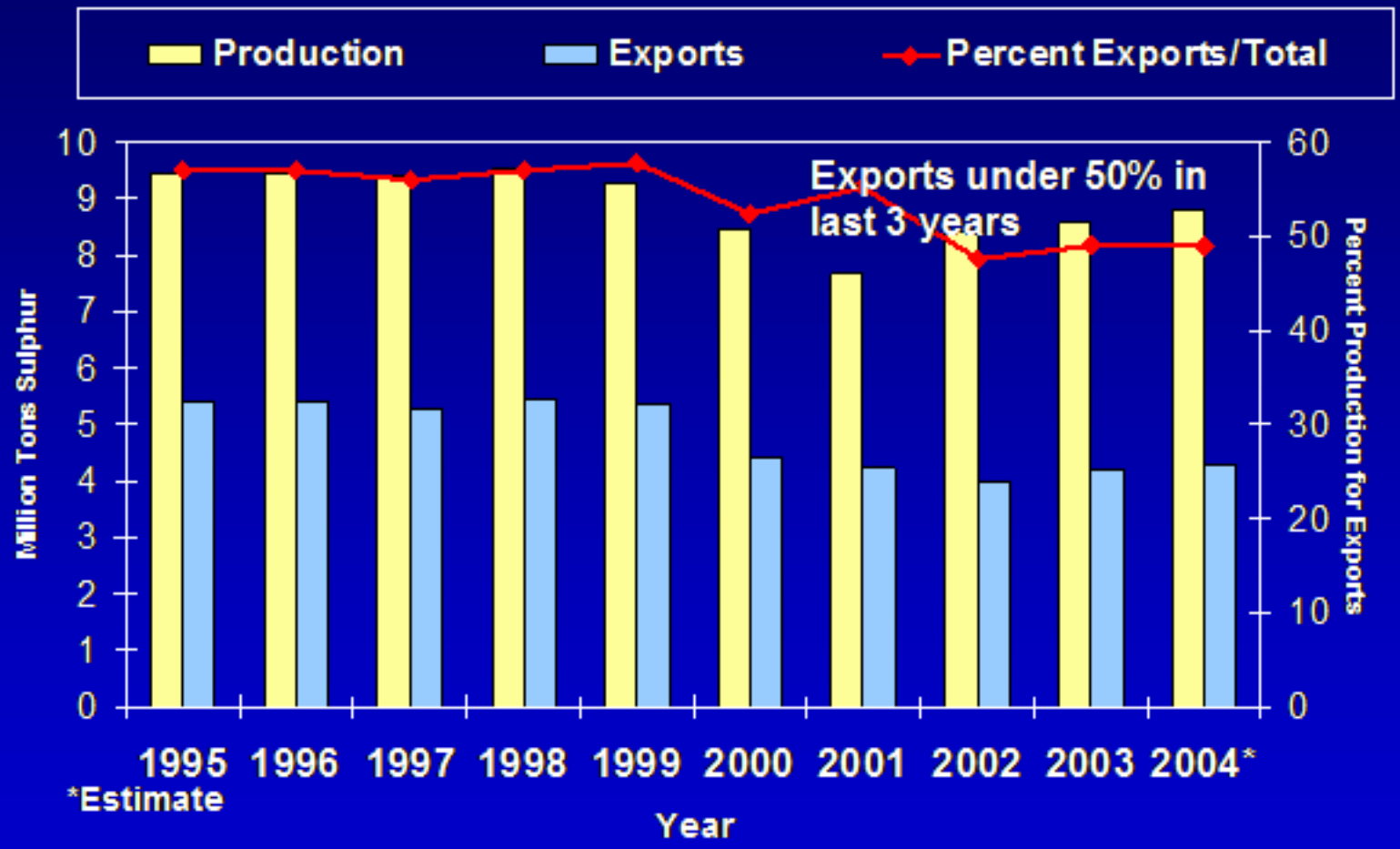
*Preliminary

U.S. and Rest of World Sulphur Use for Phosphoric Acid Production



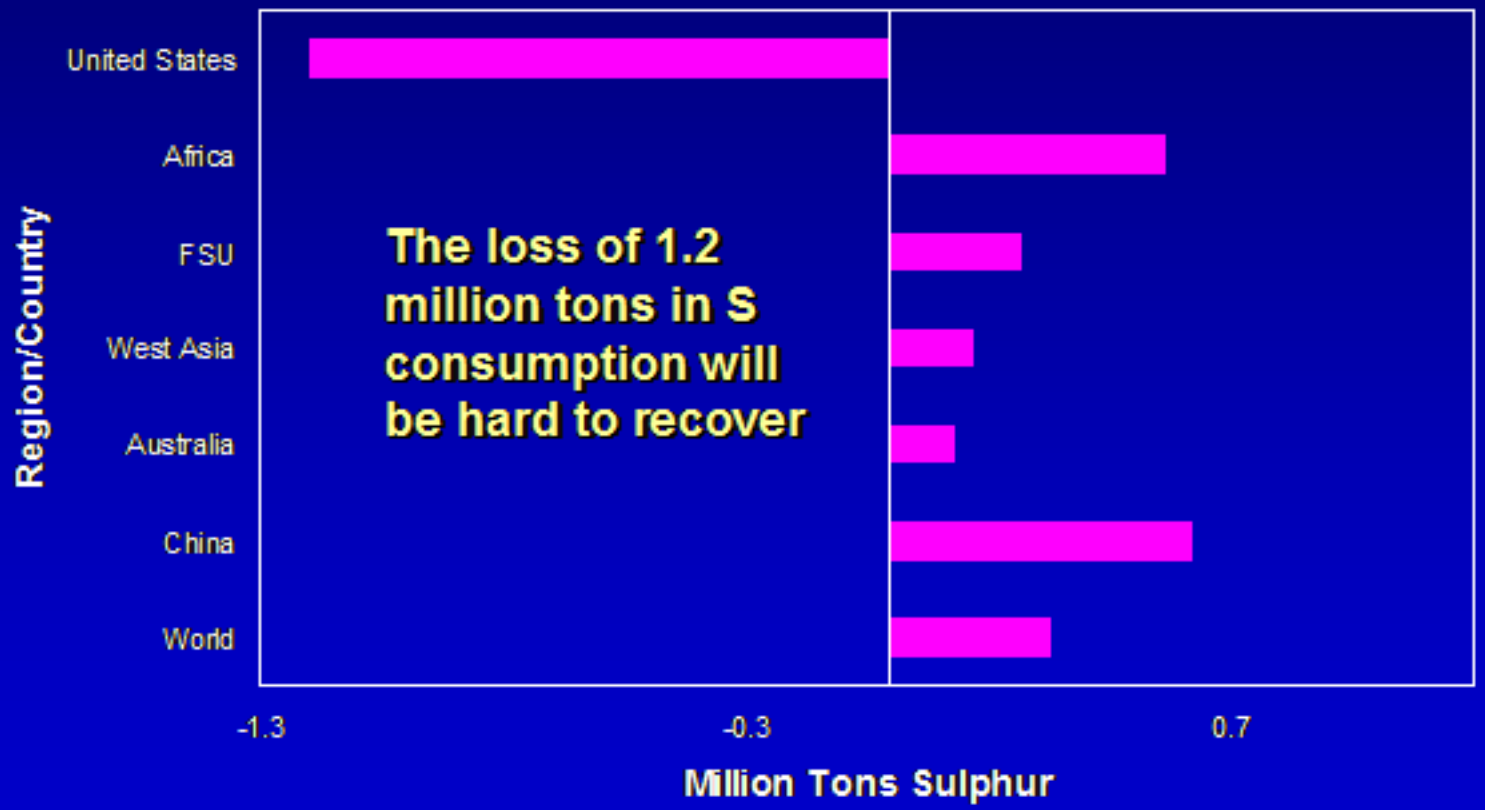
Shift to developing regions/regions with phosrock: China, Africa, Russia, India, Australia

U.S. Sulphur Consumption for Phosphate Fertilizer Production and Exports

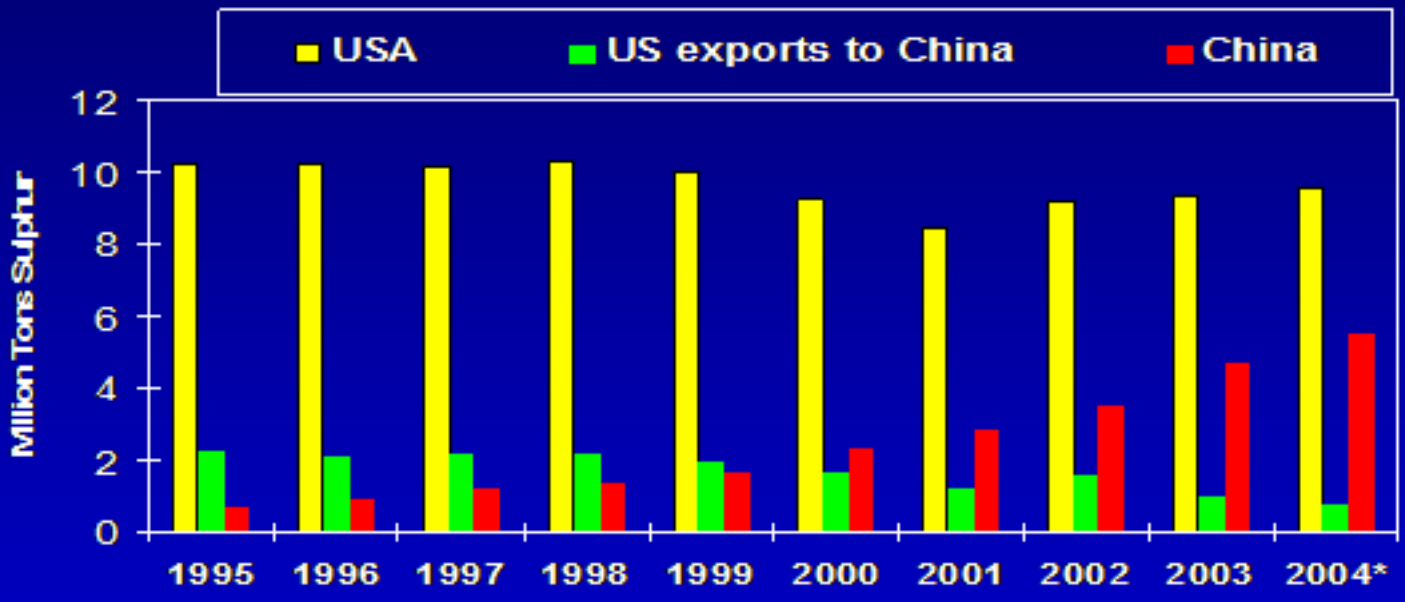


Phosphate sulphur consumption represents about 75% of U.S. consumption about half of which goes to export

Difference in Sulphur Consumption for Processed Phosphate Exports: 1995 versus 2003



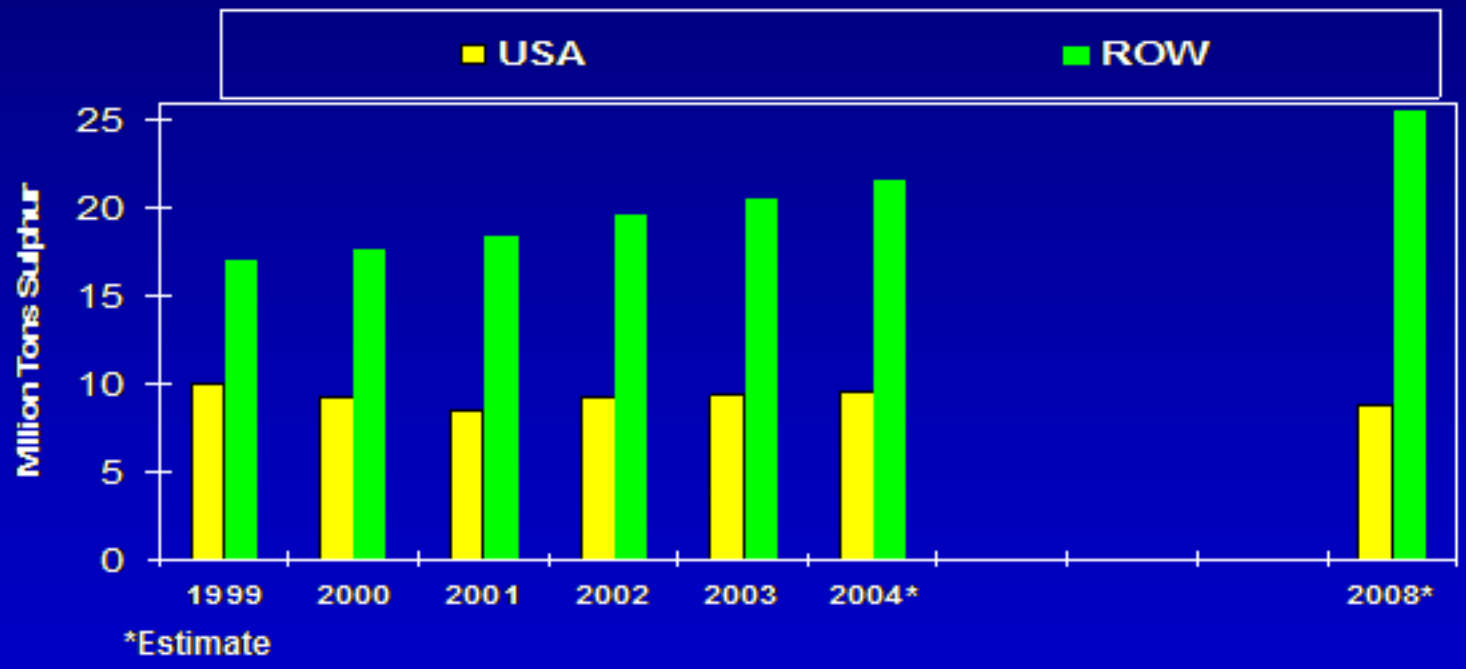
U.S. and China Sulphur Use for Phosphoric Acid Production



*Estimate

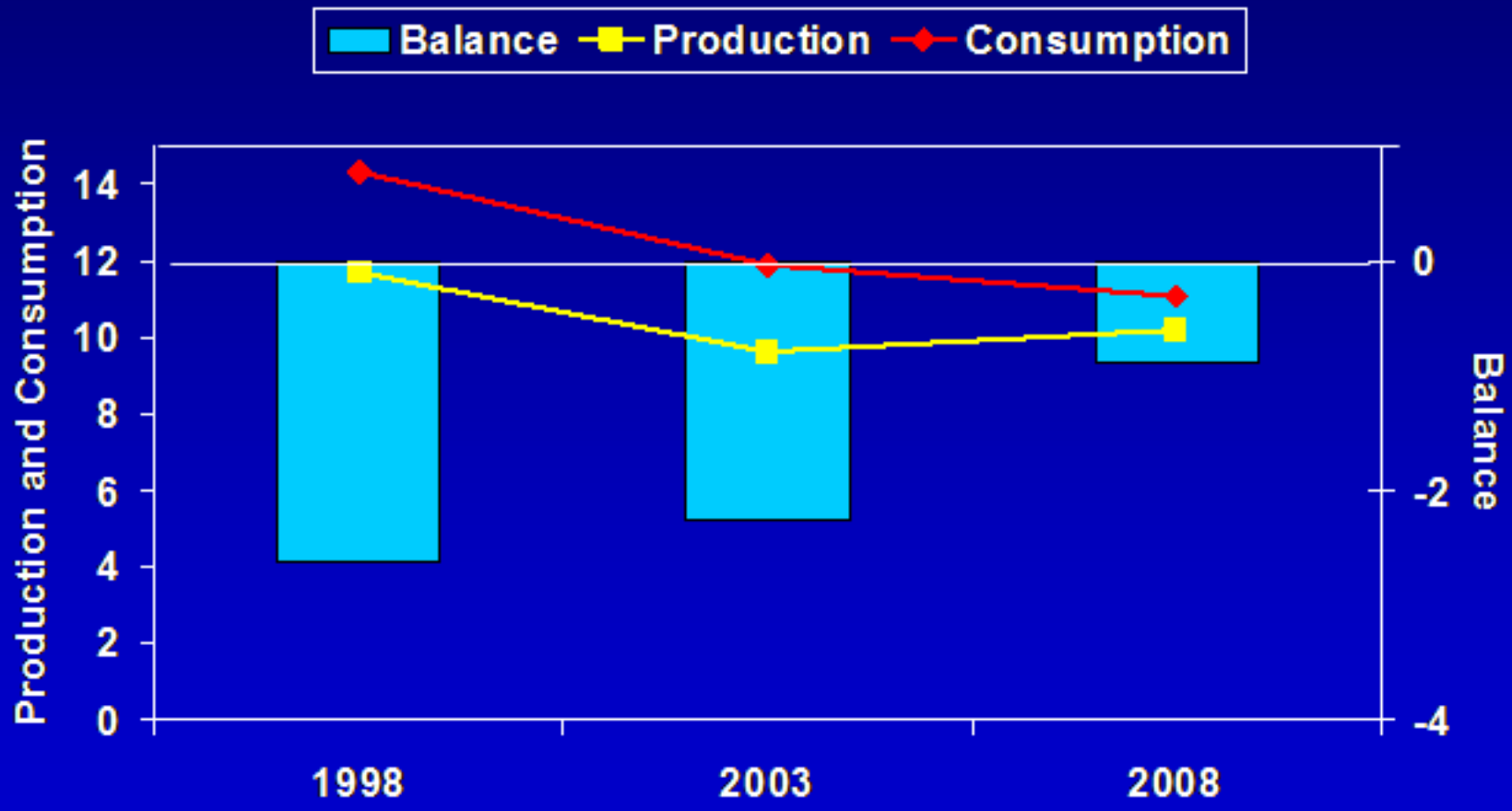
China is now second largest phosphoric acid producer; consumption increased eight-fold in a decade. US exports to China indicative of export decline. Chinese sulphur imports fuel phosphoric acid production

U.S. and Rest of World Projected Sulphur Use for Phosphoric Acid Production



Shift to developing regions/regions with phosrock: China, Africa, Russia, S. Arabia; U.S. will increasingly be residual supplier

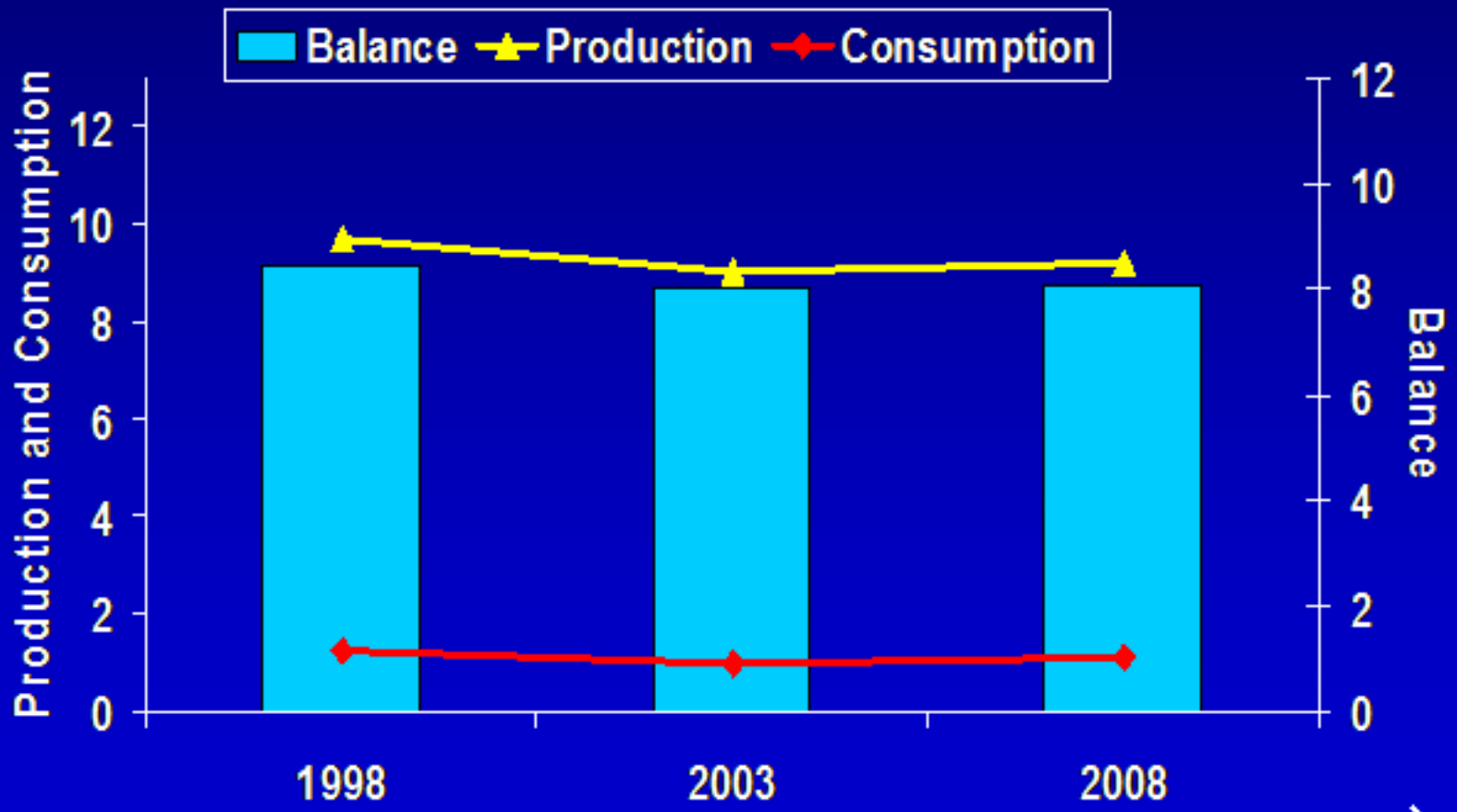
United States Sulphur in All Forms Balance Chart (Million Tons)



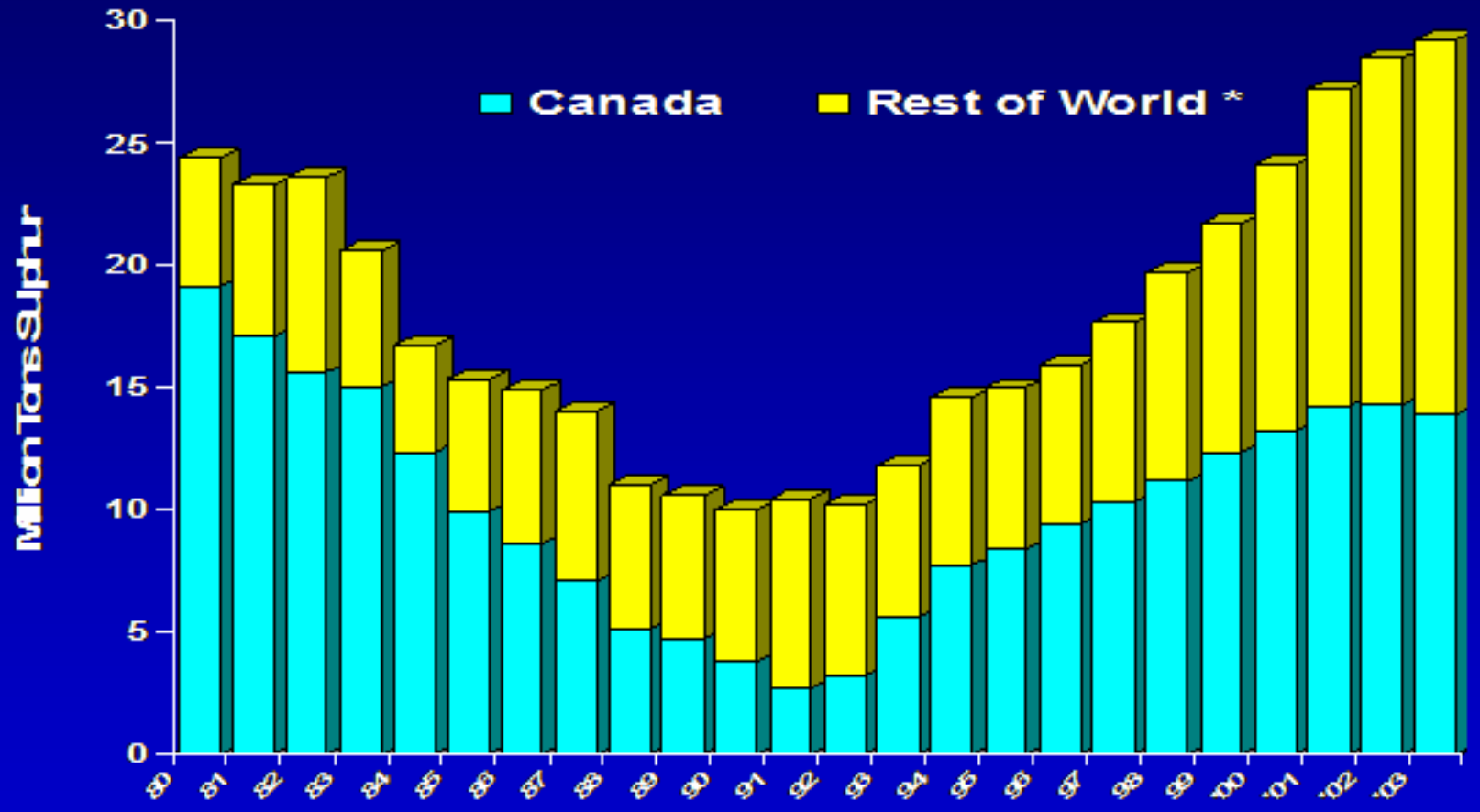
US is a net importer of sulphur, mostly from Canada for SE phosphate industry, exporting from West Coast. What will the future bring?

Canadian Sulphur in All Forms Balance Chart

(Million Tons Sulphur)

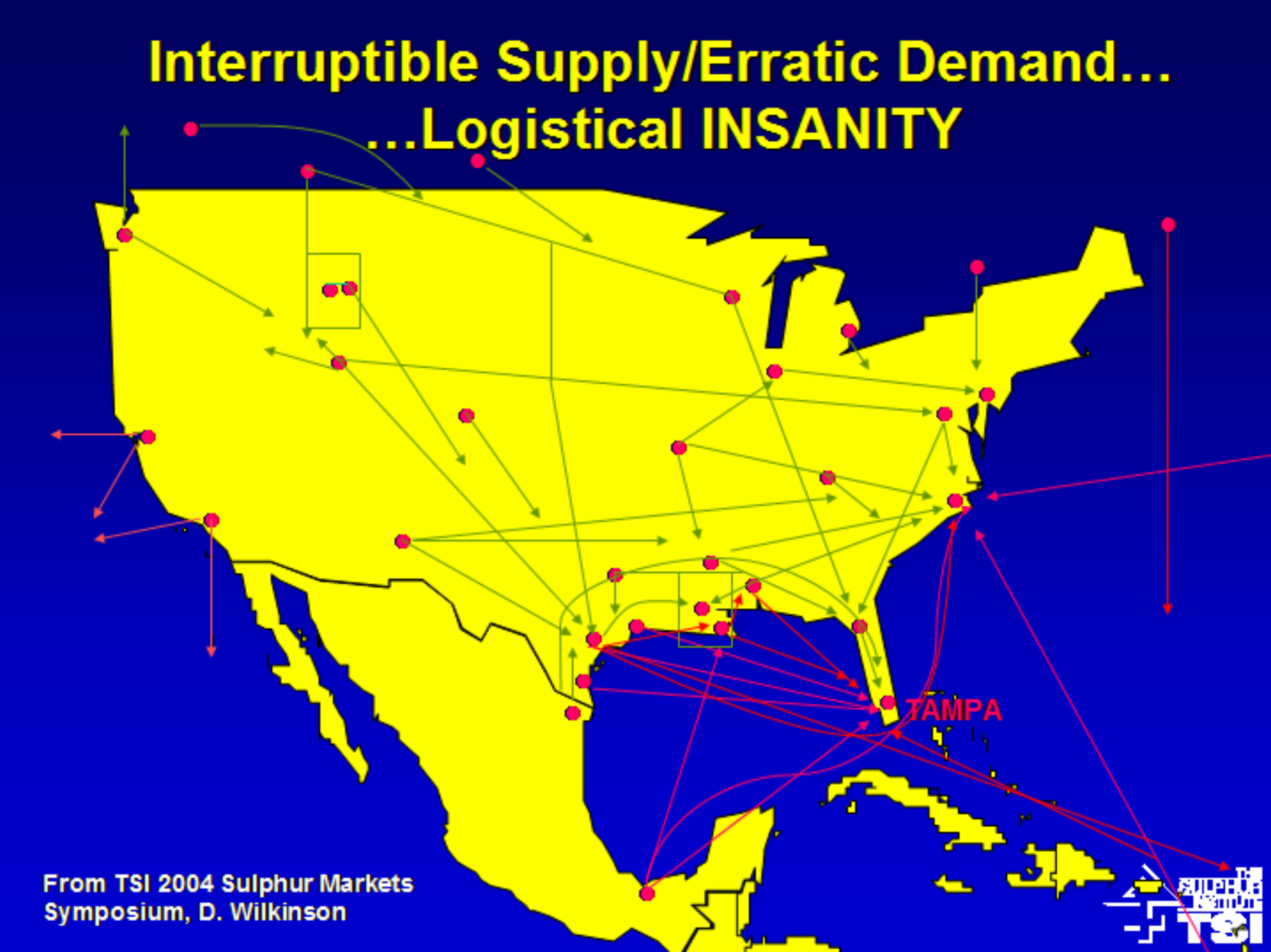


Brimstone Inventories



* Most non-Canadian inventories are in FSU and West Asia

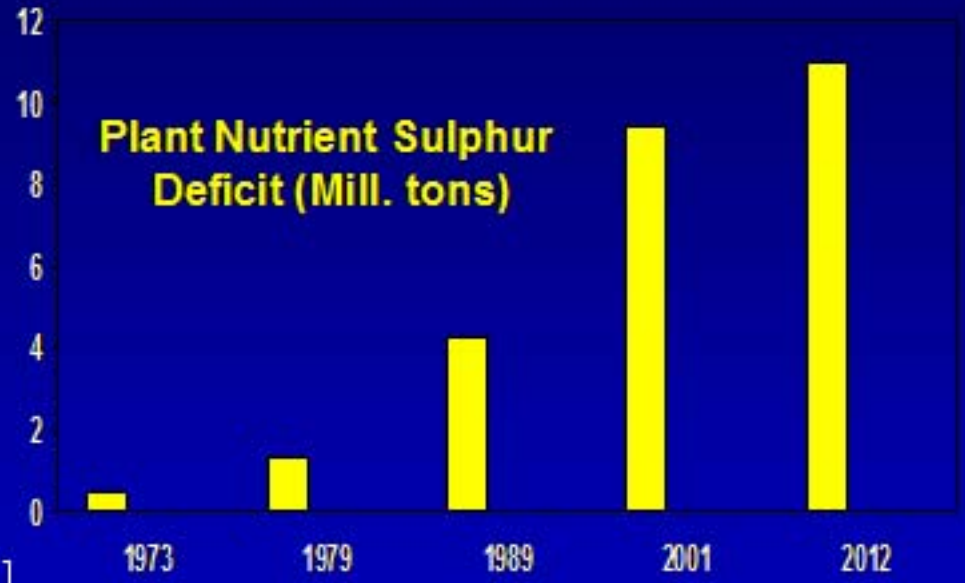
Interruptible Supply/Erratic Demand…
…Logistical INSANITY



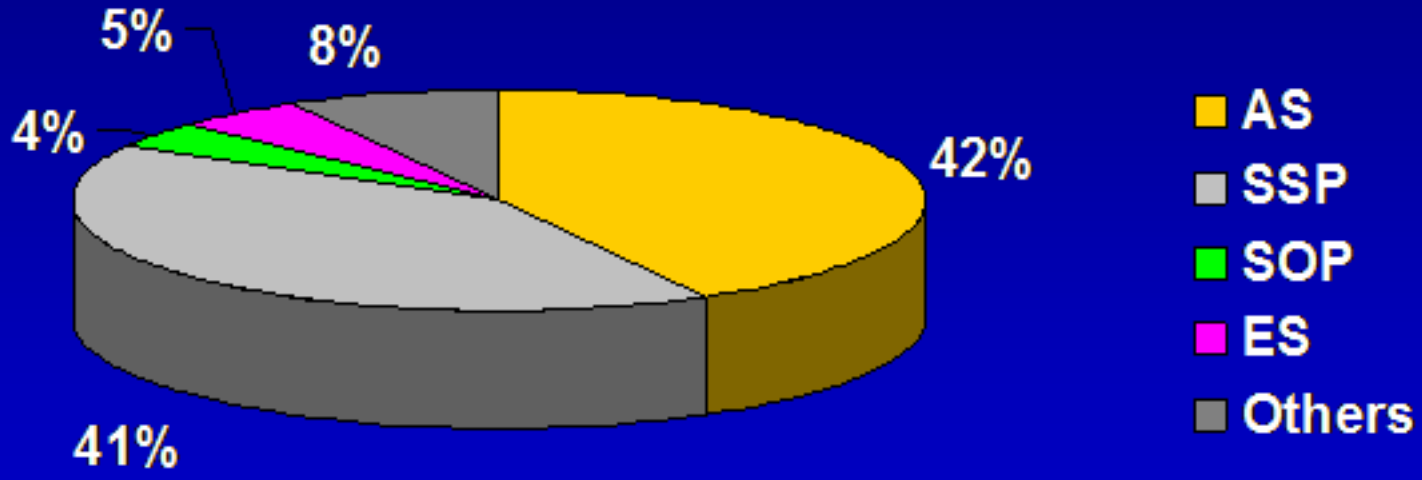
From TSI 2004 Sulphur Markets Symposium, D. Wilkinson

Sulphur (S): The Fourth Major Plant Nutrient

- The fourth major plant nutrient after nitrogen, phosphorus and potassium
- Required in similar amounts as phosphorus
- About 10 million tons S are applied as fertilizers worldwide
- Additional total S fertilizer market annual potential for 11 million tons S by 2012 primarily in Asia and the Americas.

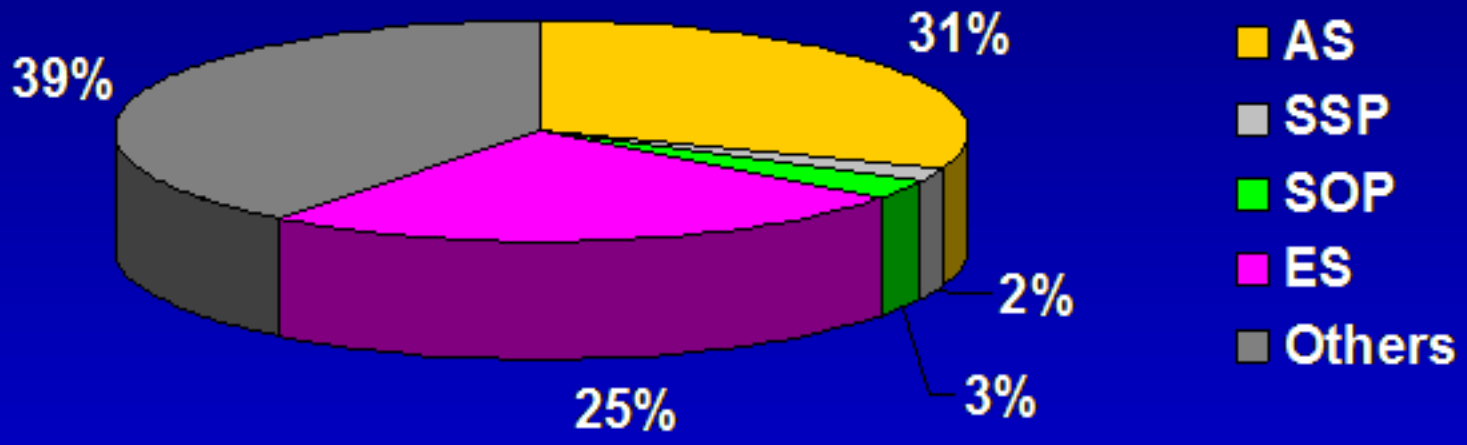


World: Traditional Sulphur Fertilizers Take Major Market Share



Current Application Worldwide: 10. 6 million tons S annually

North America: Modern Sulphur Fertilizers Take Major Market Share



Current Application: 1 million tons S annually

There are 17 sulphur-containing fertilizer products manufactured in North America from about 34 different companies.

TSI Members 2004

Bay Sulfur Company
BCT Chemtrade Corporation
Canadian National
Canadian Pacific Railway
ConocoPhillips Company
Enersul Inc.
ExxonMobil Oil Corporation
H.J. Baker & Bro., Inc.
Jupiter Sulphur LLC
Koch Sulphur LLC
Kuwait Petroleum Corporation
International Commodities Export Corporation
Martin Gas Sales, Inc.
Polish Steamship Company
PRISM Sulphur Corporation
Qatar Petroleum
Ruhr-Schwefelsäure GmbH
Savage Industries
Shell Canada Limited
Shell Oil Products US
Shell Europe Oil Products
Solvadis ag
Sultran Ltd.
Tessenderlo Kerley, Inc.
Verschure Shipping B.V.
Yara International