Fertilizer Outlook and Technology Conference

Savannah, GA
11/17/10

SULFUR OUTLOOK

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CON-SUL, INC.

- **Consulting in all commercial aspects of Sulfur**

- **Founded - 1987 when Agrico sold to Freeport**
- **Entered fertilizers – 1971; Sulfur -- 1981**
- **Do not maintain detailed global project data base**
- **Provide interpretative approach based on experience**
- ***North American Quarterly Sulfur Review* integrates commercial, agricultural and sulfur perspectives**

- **Member, The Sulphur Institute**

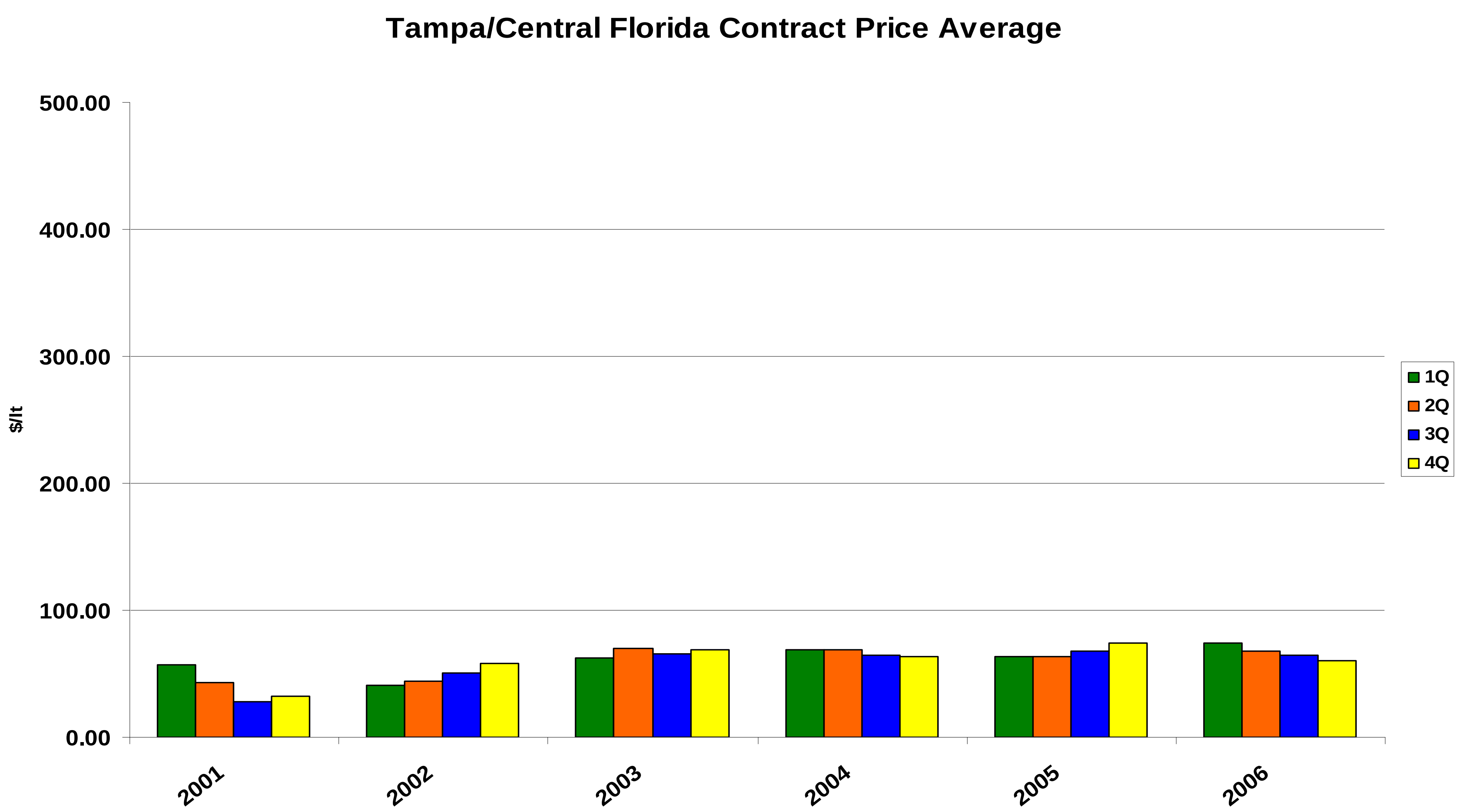
"SULFUR -- AN ADVANTAGED ELEMENT"


IS THAT
SULFUR?

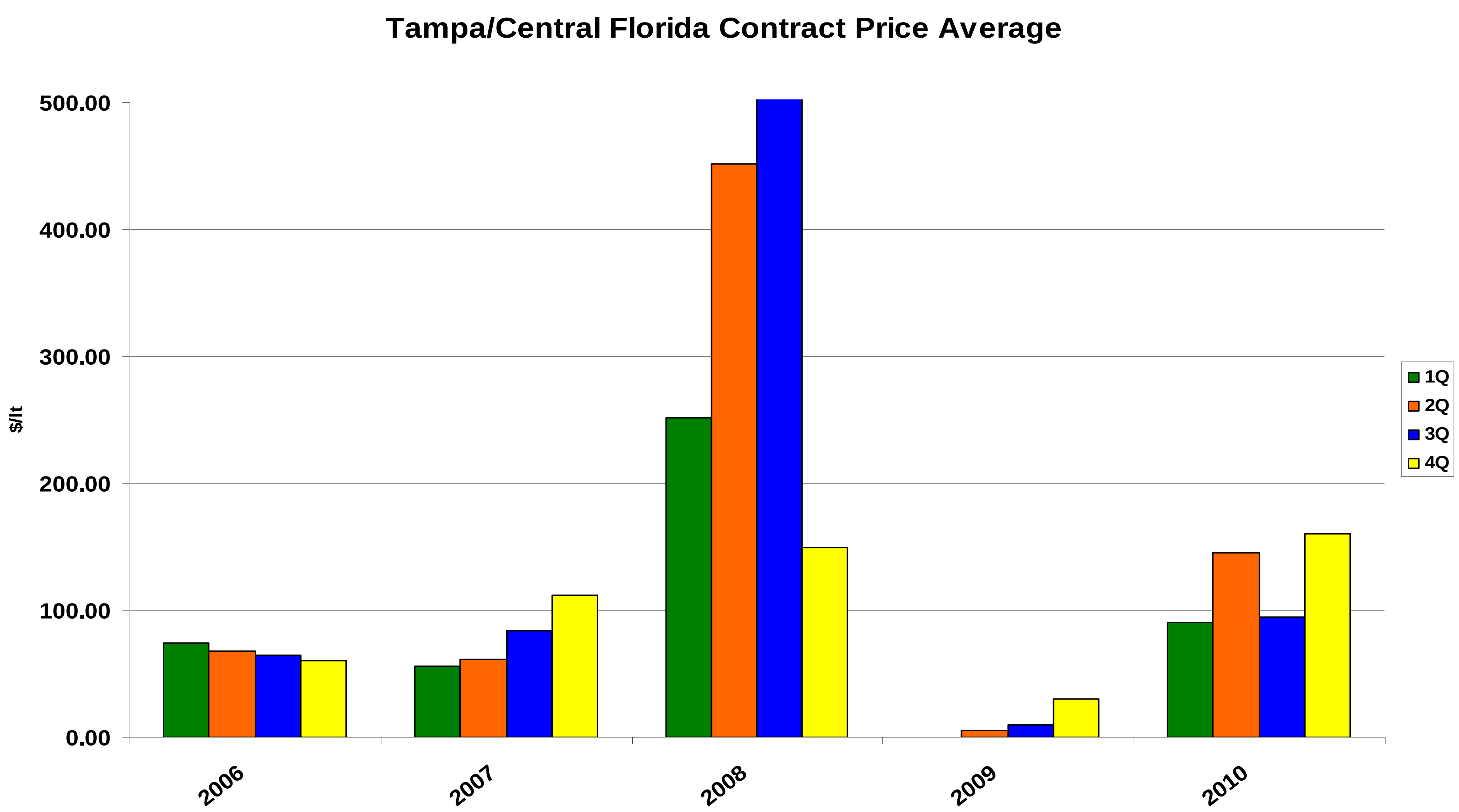
OUTLINE

- **Why so volatile – supply, demand & price?**
- **Global Balance Estimates 2008-2015**
- **US Supply/Demand Fluctuations 2008-2010**
- **2011 US 1H Outlook/2H Guesstimate**
- **2012 Outlook Commentary**

HISTORIC PRICING



RECENT PRICING



SOLID SULFUR:
Going … Going… or Coming -----?

FORMED (SOLID) SULFUR EXPORTS/IMPORTS

GULF COAST	2008	2009	2010e
EXPORTS	360MT	1,478MT	600MT
IMPORTS	100MT	0	400MT

OUTLINE

- Why so volatile – supply, demand & price?
- Global Balance Estimates 2008-2015
- US Supply/Demand Fluctuations 2008-2010
- 2011 US 1H Outlook/2H Guesstimate
- Conclusions

VOLATILITY

LIMITED ACCESSIBLE STORAGE

GONE: **Alberta "Foothills Blocks"**
Saudi Arabian Blocks
Galveston Block (1MMT)
Kazakh and Russian Blocks Declining

S & D NO LONGER SOLVED BY HUGE, EASILY ACCESSIBLE, CANADIAN INVENTORY

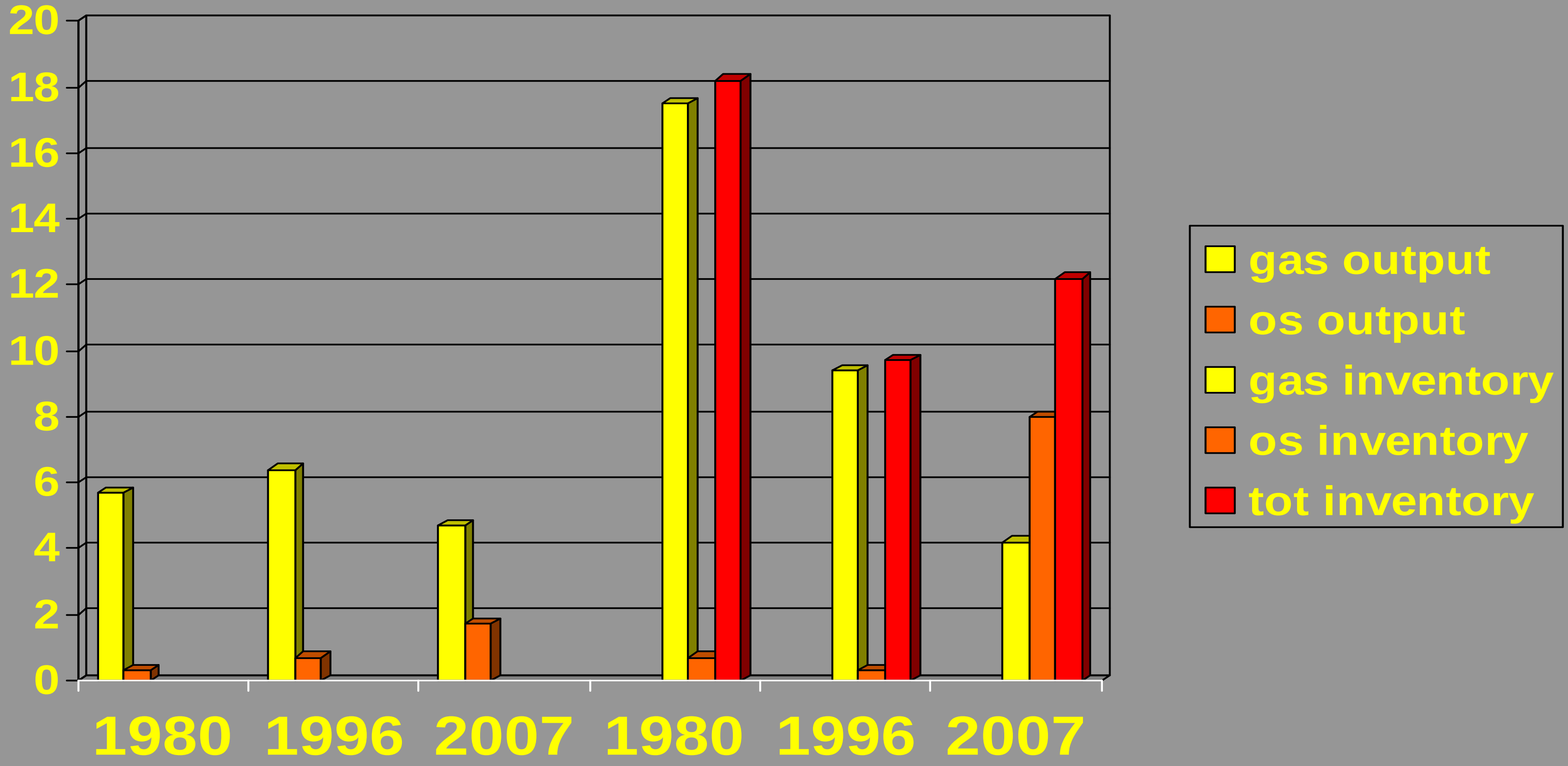
In early 1980s North America had close to 25 million tons of sulfur in easily accessible Blocks.
12million remain, 9 million not accessible

9MMT -- A LACK OF LOGISTICS

Photo Toronto Globe and Mail and Edward Burtynsky

GAS/OIL SAND – SULFUR OUTPUT/INVENTORY

MILLION METRIC TONS



POOR INFRASTRUCTURE

VOLATILITY (cont.)

INSUFFICIENT INFRASTRUCTURE

– **Russia/Kazakh volume to Black Sea down 10-20% in Winter**

– **Oil Sand output can not be formed on-site. Very little sold at Vancouver**

– **Additional rail shipments limited by truck/bridge/rail infrastructure, demand stability**

VOLATILITY (cont.)
SURGES IN CANADA-US TRANSPORT

- 30 day round trip from Central Canada to US users, 2.4 million tons/year shipments (200,000 tons per month), means 100,000T are always "in-transit"
- When users shut down suddenly, 100,000+T is not unloaded on arrival. Rail yards fill up.
- Refineries must still get rid of sulfur or curtail
- Prices collapse, exports surge and sulfur to landfills

VOLATILITY (cont.)
ERRATIC DEMAND

- **US phosphate fertilizer producers gave no warning of in January 2001 and 2008-9 shutdowns**

- **Chinese buyers repeatedly shift purchases from Vancouver, Arab Gulf and US Gulf to lower price**

- **The change in this October's USDA Outlook roiled the fertilizer industry. Their frequent corrections harm agribusiness**

- **You may recall the surge in DAP and Sulfur following China's unexpected October '09 purchase of DAP**

VOLATILITY (cont.)
A CRITICAL RAW MATERIAL

- **For phosphate fertilizers** -- ***FOOD***
- **For ammonium sulfate** -- ***FOOD***
- **For sulfur fertilizers –** ***FOOD***
- **For innumerable chemicals** -- *hi value products*
- **For rubber making** – *essential industry*
- **For refinery operations** – *essential industry*
- **For metals leaching** – *capital intensive industry*

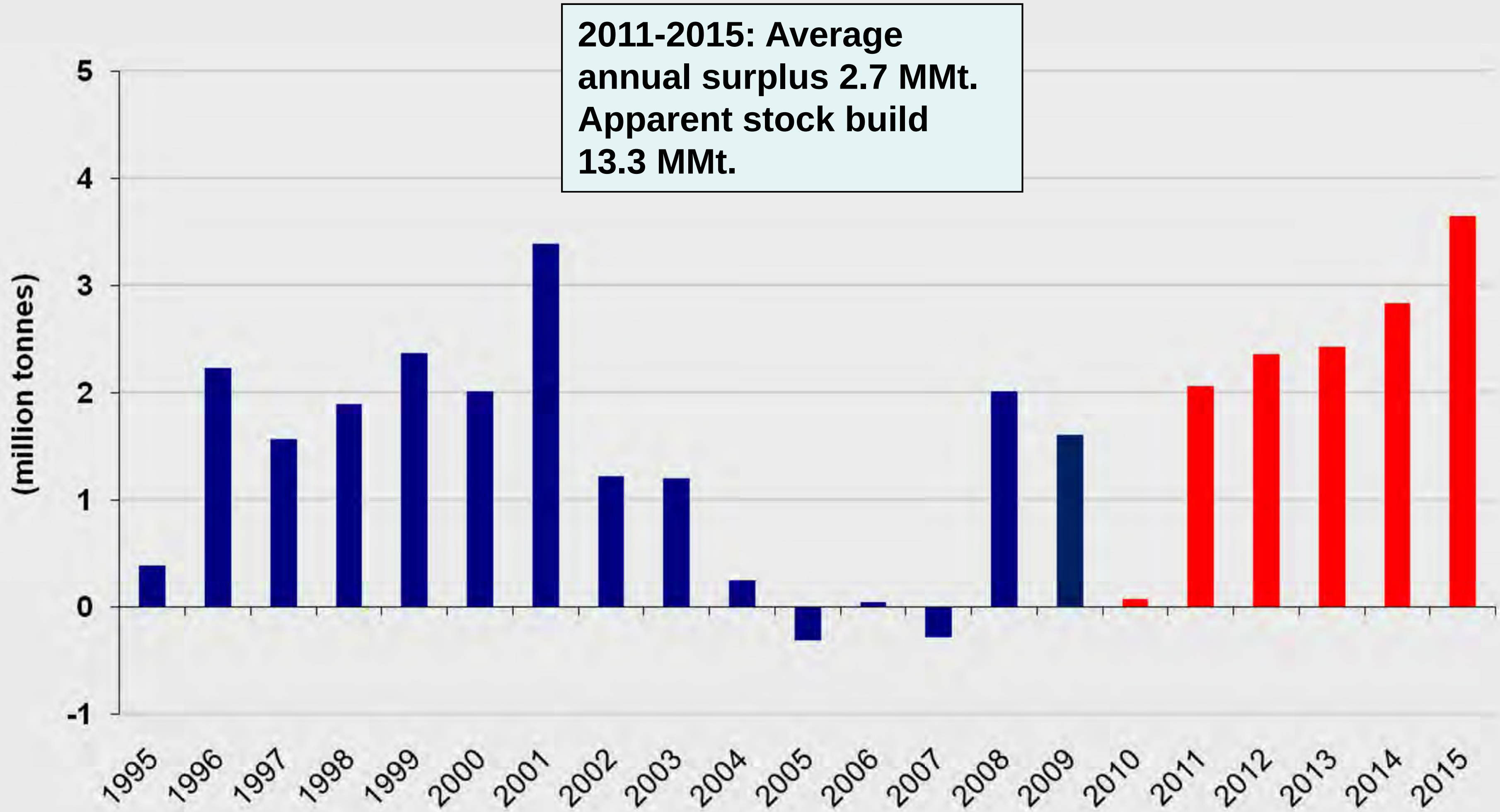
WHEN SULPHUR IS NEEDED

USERS PAY ALMOST ANY PRICE

GLOBAL OUTLOOK

- **NO ONE REALLY KNOWS**
- **Mid-East and Caspian continue slipping**
- **US Refineries and gas lower**
- **Canadian sour gas down**
  Oil Sands reconfiguration

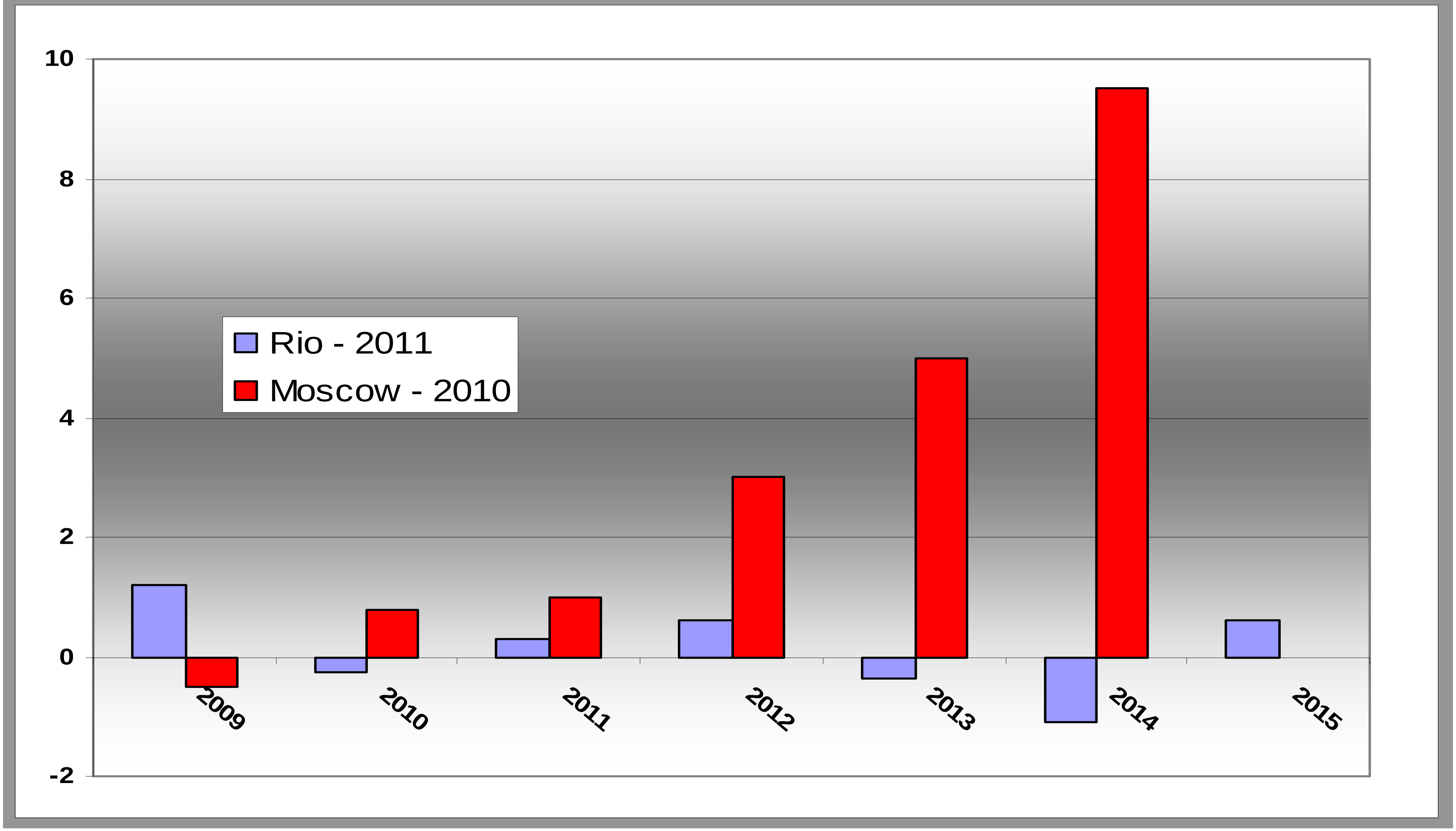
The Sulphur Market Balance, 1995-2015



WORLD SULPHUR BALANCE

IFA PIT Meetings

Source: Fertecon Research Centre (Million Tonnes)



U.S. SULFUR -- Conflicts

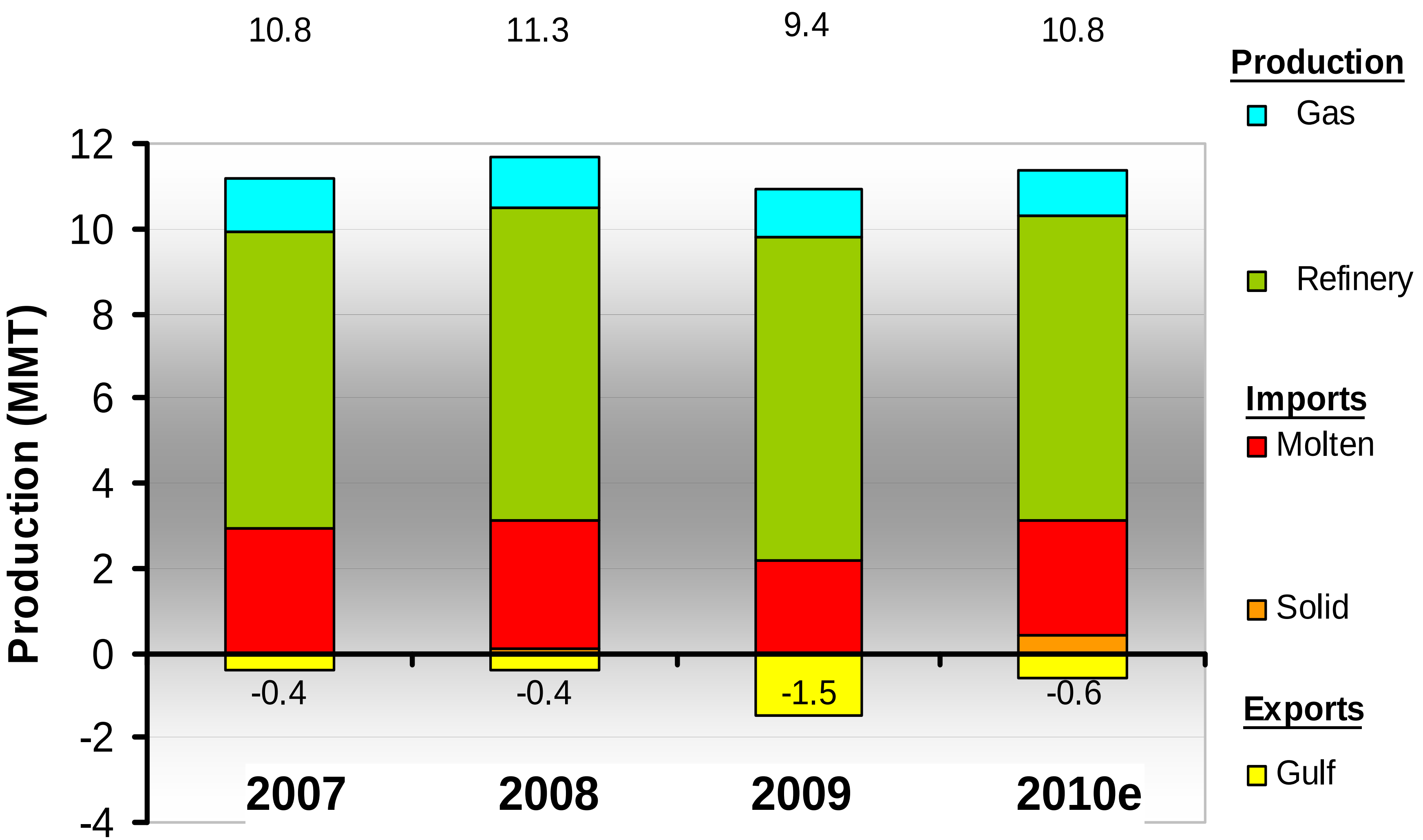
- **THE US MARKET IS NEVER LONG, but CAN OVERFLOW, or be REALLY SHORT**

- **Supply**
  - **Sour feedstocks, Refinery and Coker runs**
  - **Expansions, Logistics, Imports, Inventory**

- **Demand**
  - **Exports, Fertilizer, Economy, Inventory**

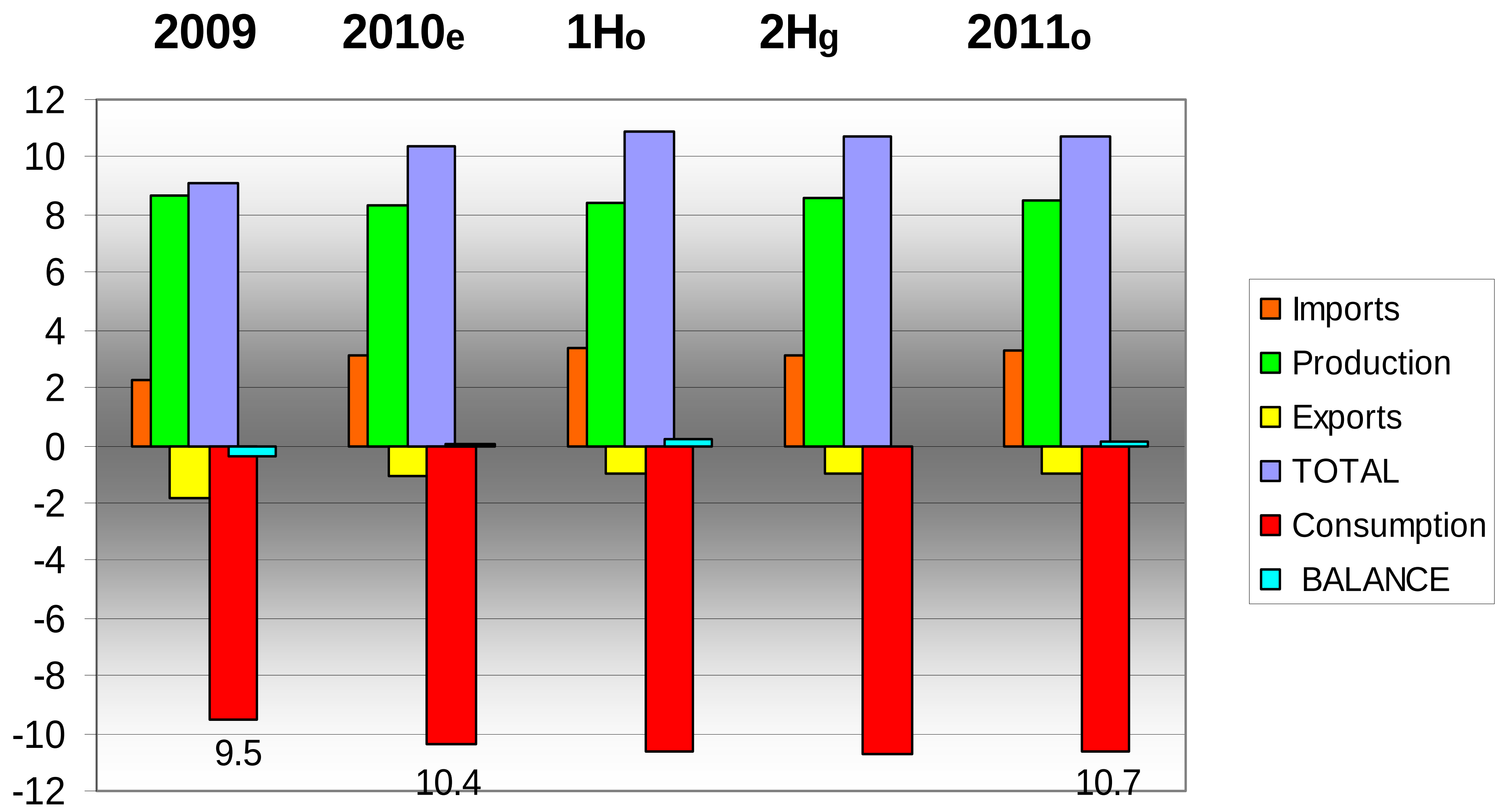

PLEASE DO NOT EXPORT!

US SULFUR SUPPLY
(without West Coast exports)



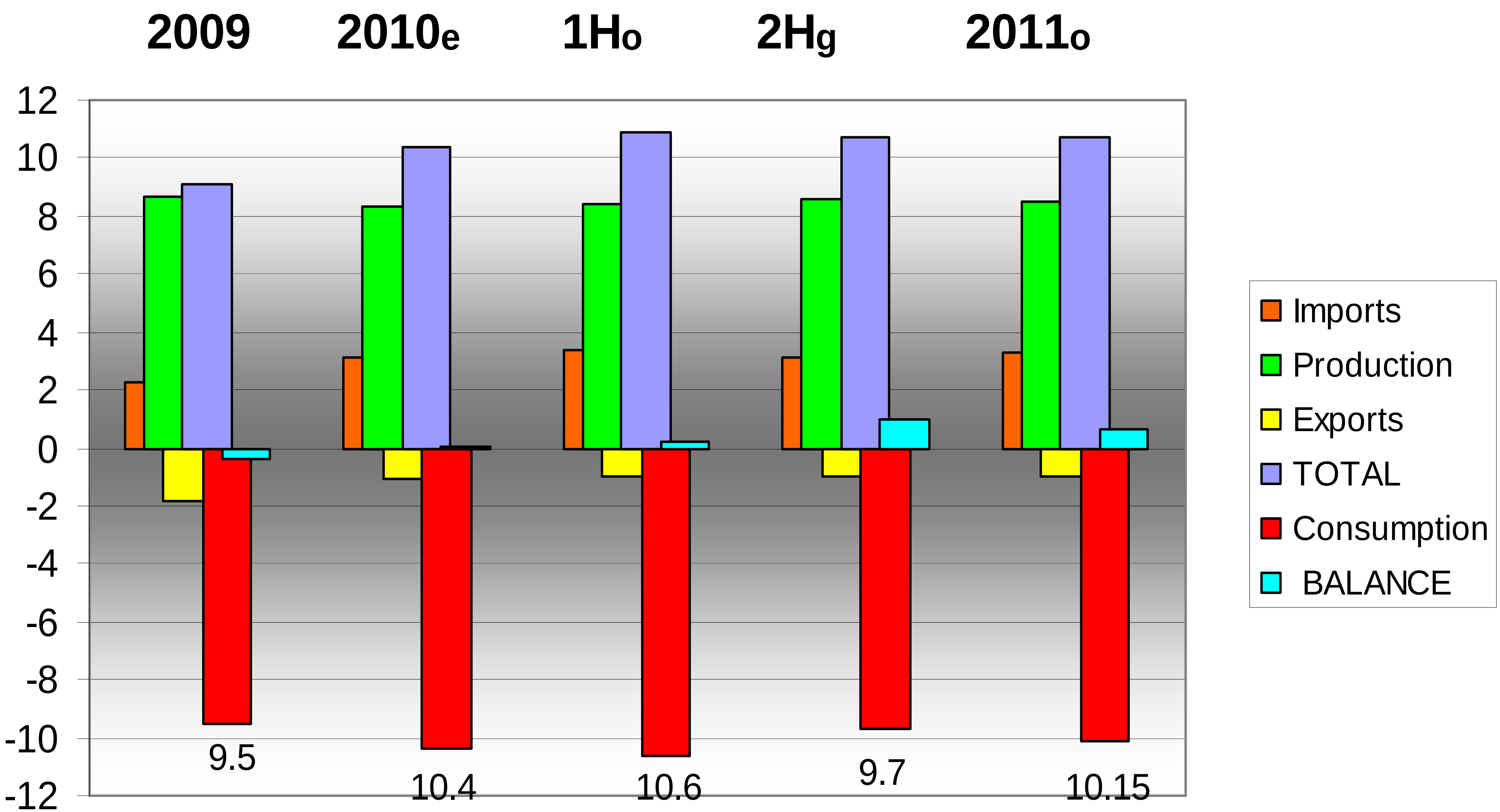
US SULFUR OUTLOOK -- 2011

(without West Coast exports)

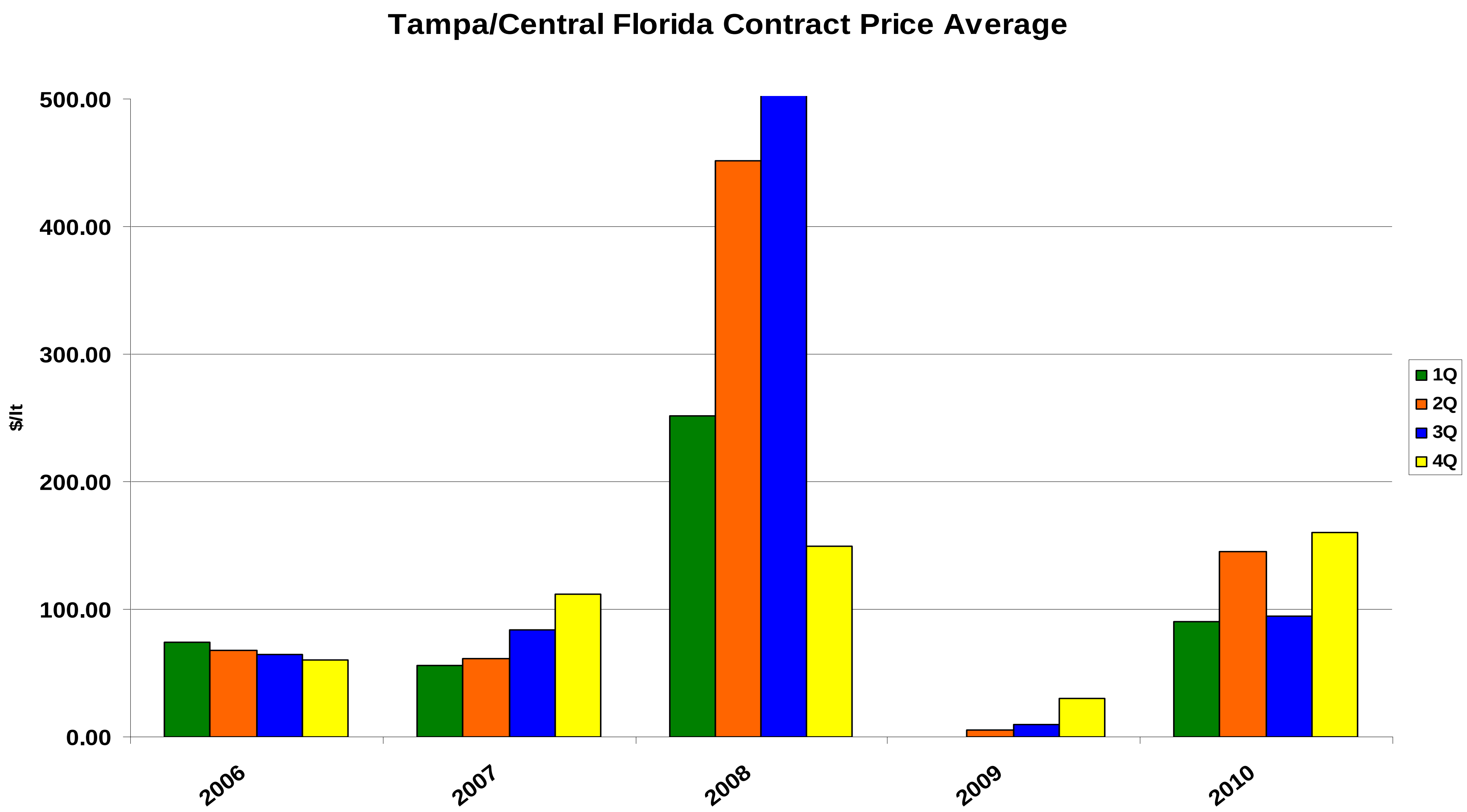


US SULPHUR OUTLOOK -- 2011 B

(without West Coast exports)



PRICING



Tampa/Central Florida Contract Price Average
500.00
400.00
300.00
200.00
100.00
0.00
$/lt
2006
2007
2008
2009
2010
1Q
2Q
3Q
4Q

OIL SANDS
CRITICAL SOURCE of ENERGY and SULFUR

2009	**Alberta**	**1,650,000T*** **	
	US	**1,270,000T**	**2,920,000**
2015-18*	**Alberta**	**2,450,000T**	
	US	**3,000,000T**	**5,450,000**
2020-25**	**Alberta**	**3,220,000T**	
	US	**4,000,000T**	**7,220,000**

* CSI estimate. Requires new project construction

** Unlikely in 2020; *** NB: 2009 gas derived output in Alberta was 3.9MMT


Applause!

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THANK YOU

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