

Sulphur Outlook

Presented at

Fertilizer Outlook and Technology
Conference

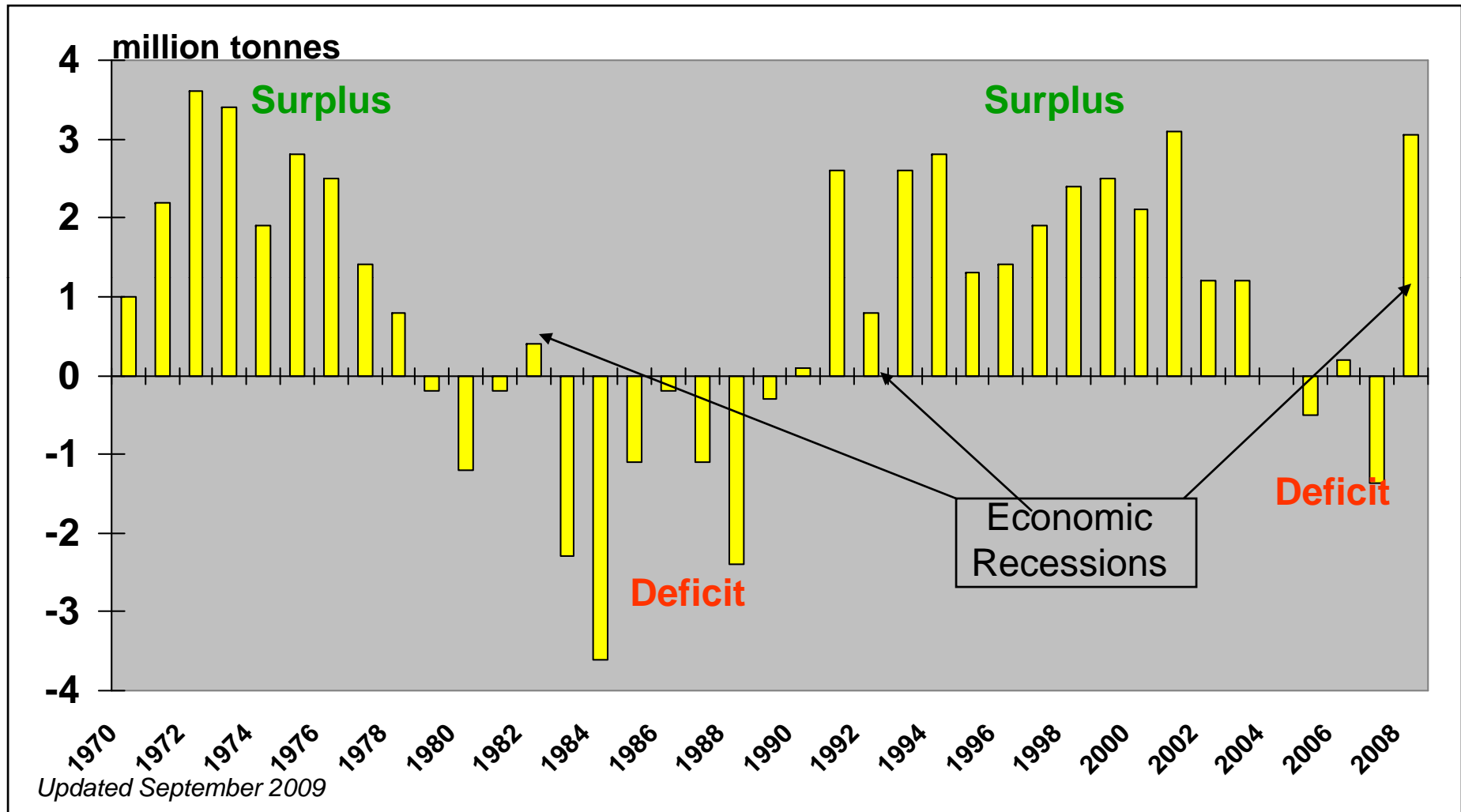
Dr. Robert Boyd
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Tampa, FL
October 2009

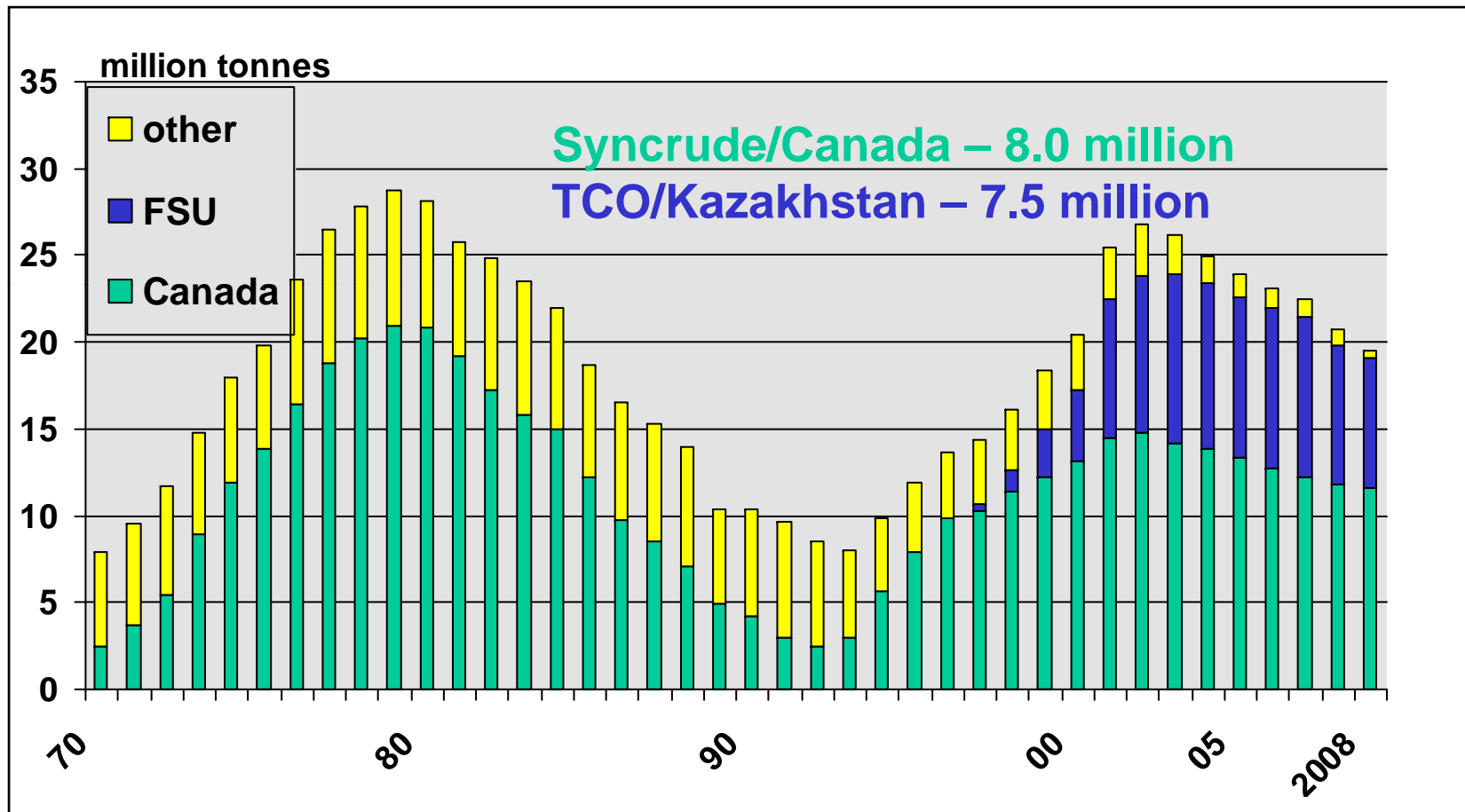
Forward Looking Statements

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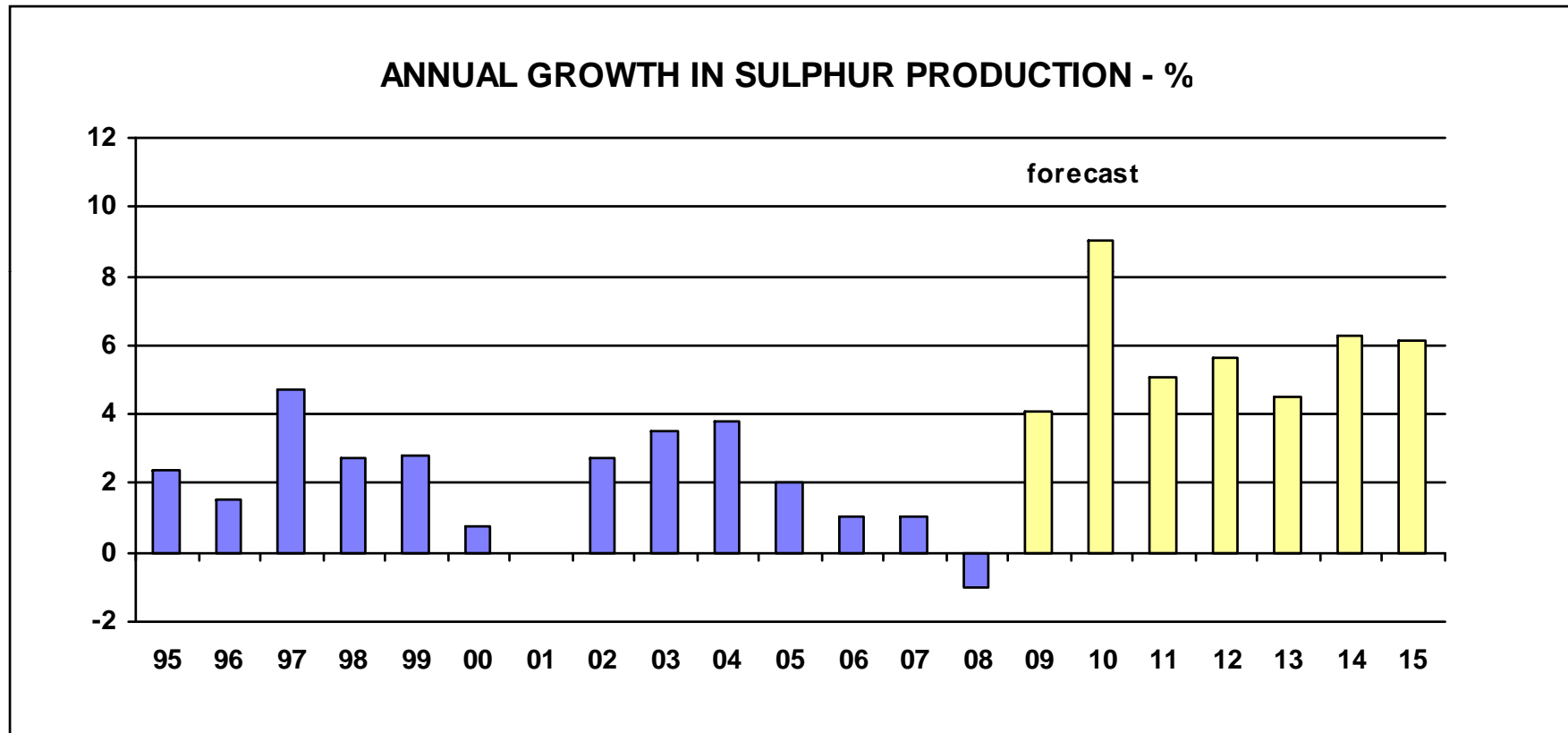
World Elemental Sulphur Balance



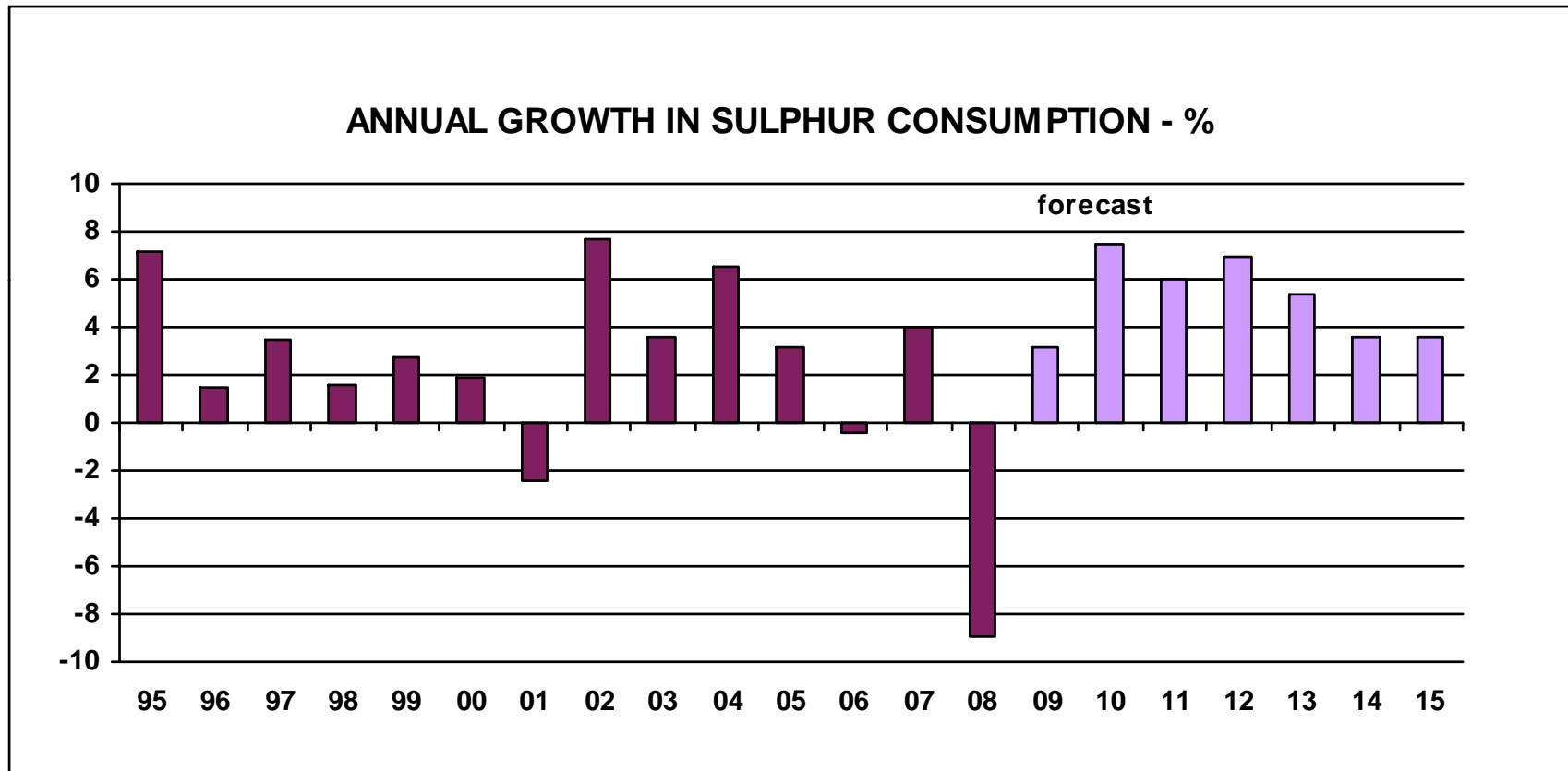
World Sulphur Inventories



Sulphur Production Shows Little Growth in Recent Years

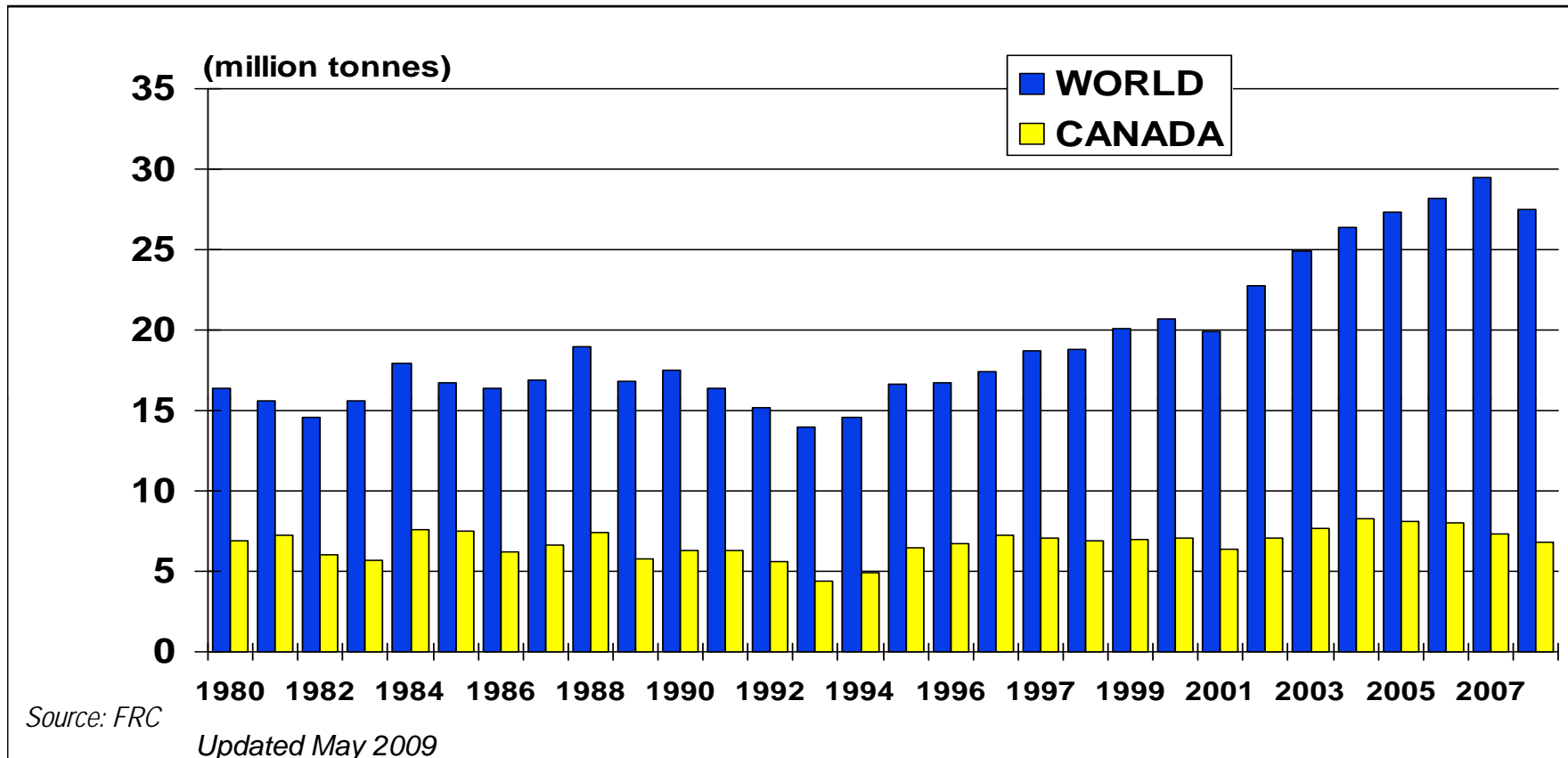


Consumption Takes Massive Hit in 2008



World sulphur demand falls from 49.5 million tonnes in 2007 to 45.0 million tonnes in 2008.

World Sulphur Trade



World trade declines 7% in 2008 to 27.5 million tonnes

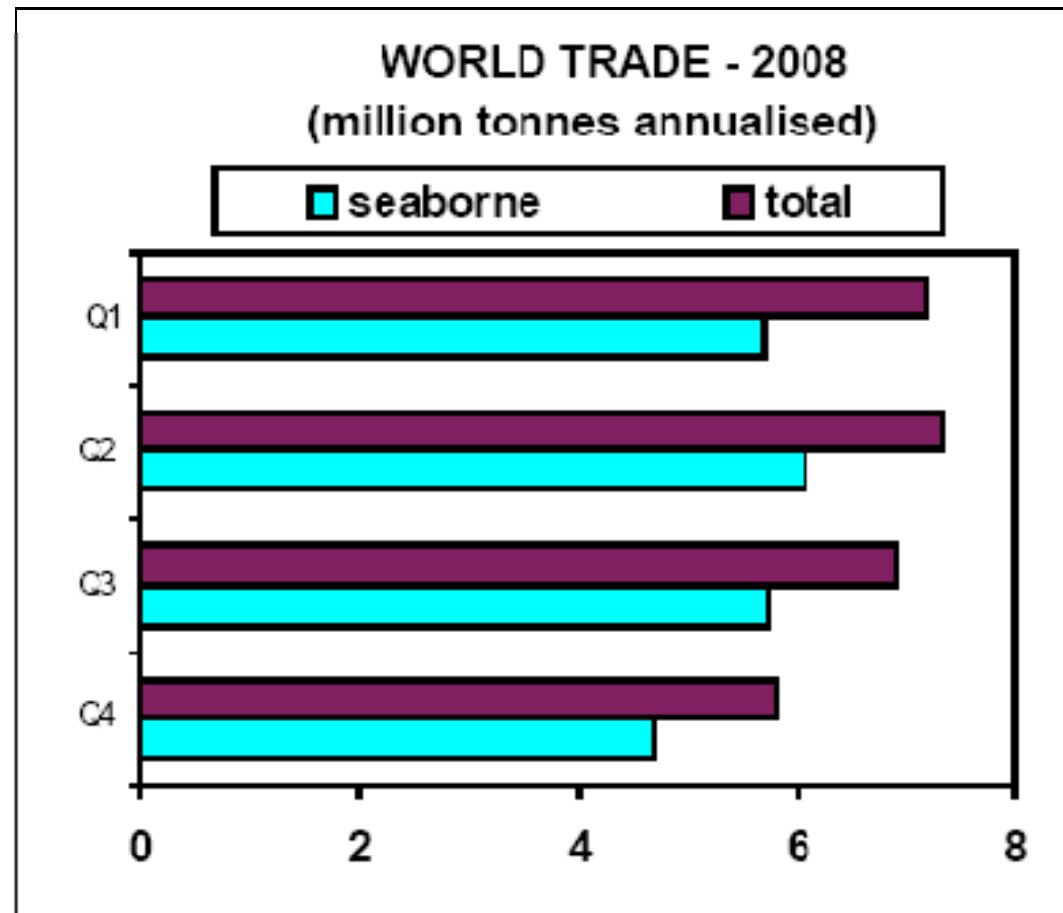
Seaborne trade down 9%

China led the increase with imports less than 1.0 million tonnes in 1997 to a peak of 9.7 million in 2007

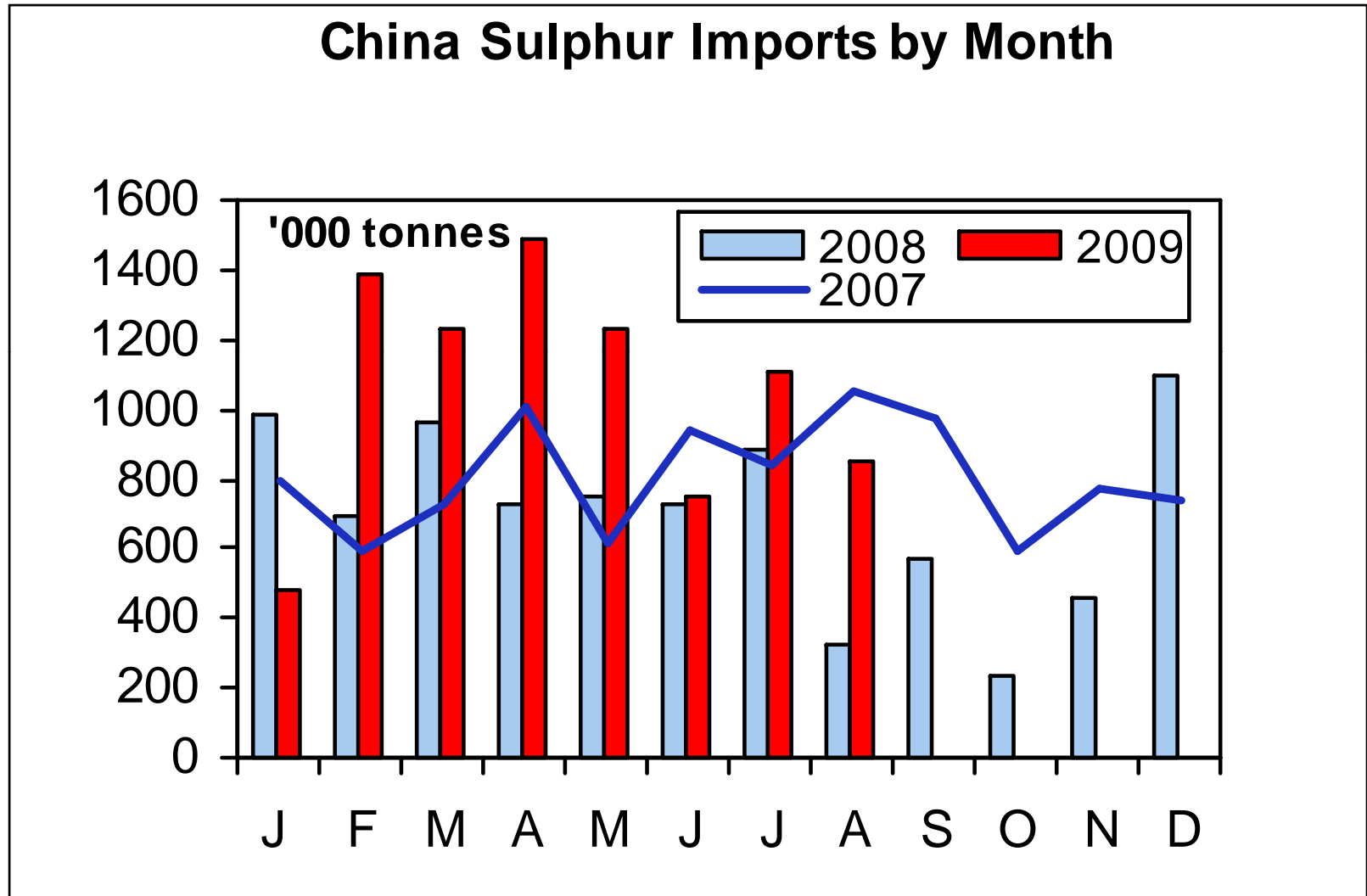
Importers- ranked by 2008 imports (tonnes)

Market	Imports	Origin
China	7,971,000	Japan/Korea, Canada, ME
Morocco	3,088,000	Russia, Kaz., ME
USA	2,966,000	Canada, Mexico, Venez.
Brazil	2,226,000	Canada, USA, ME
Tunisia	1,694,000	Russia, Kaz., ME
India	1,516,000	ME
South Africa	967,000	Canada, ME
Australia	714,000	Canada
Ukraine, Jordan, Mexico, Indonesia, Israel.	350,000 – 500,000	

World Sulphur Trade Collapses in Q4 2008

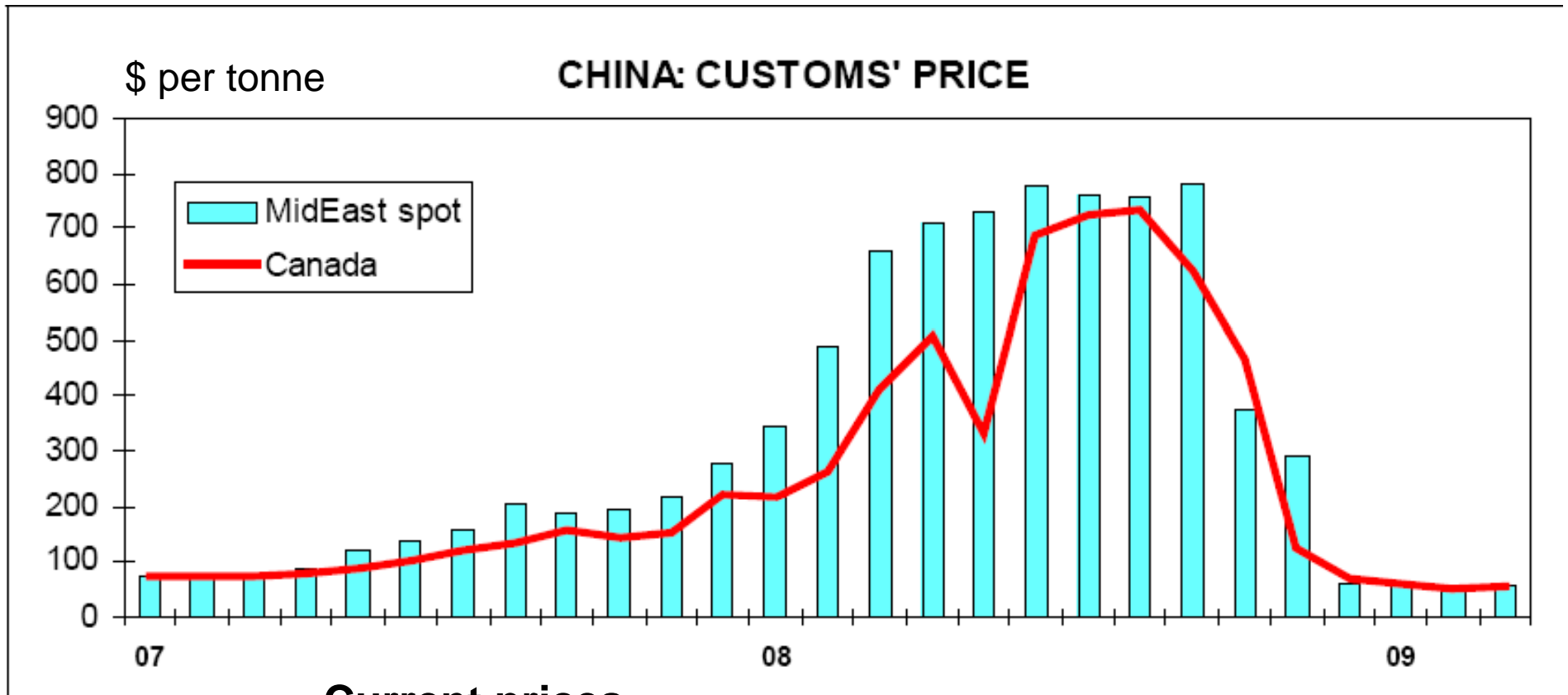


China Sulphur Imports



April 2009 imports set new record – 1.5 million tonnes

Key World Sulphur Price Now cfr China



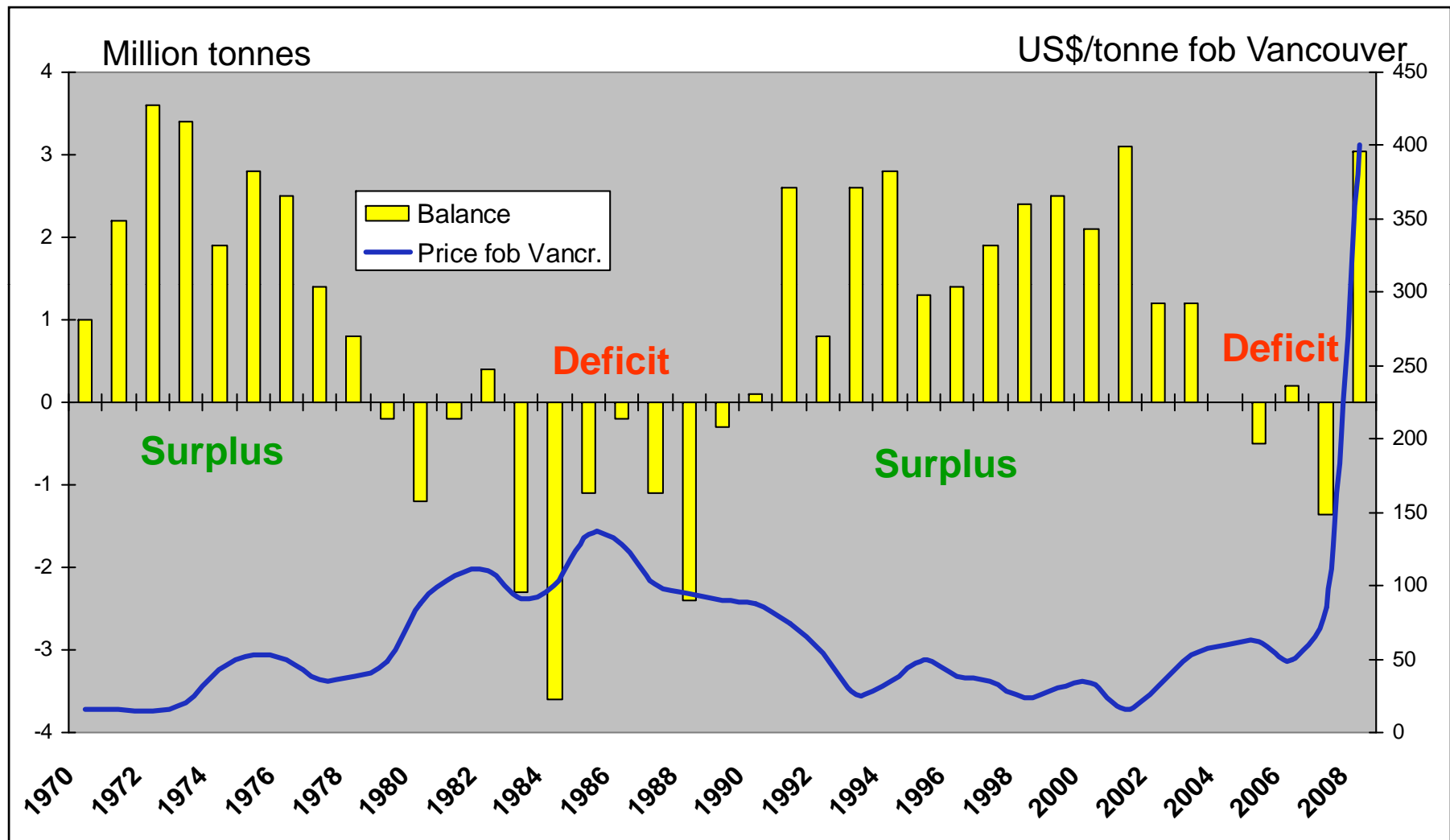
Current prices

Delivered to China \$60-65/tonne

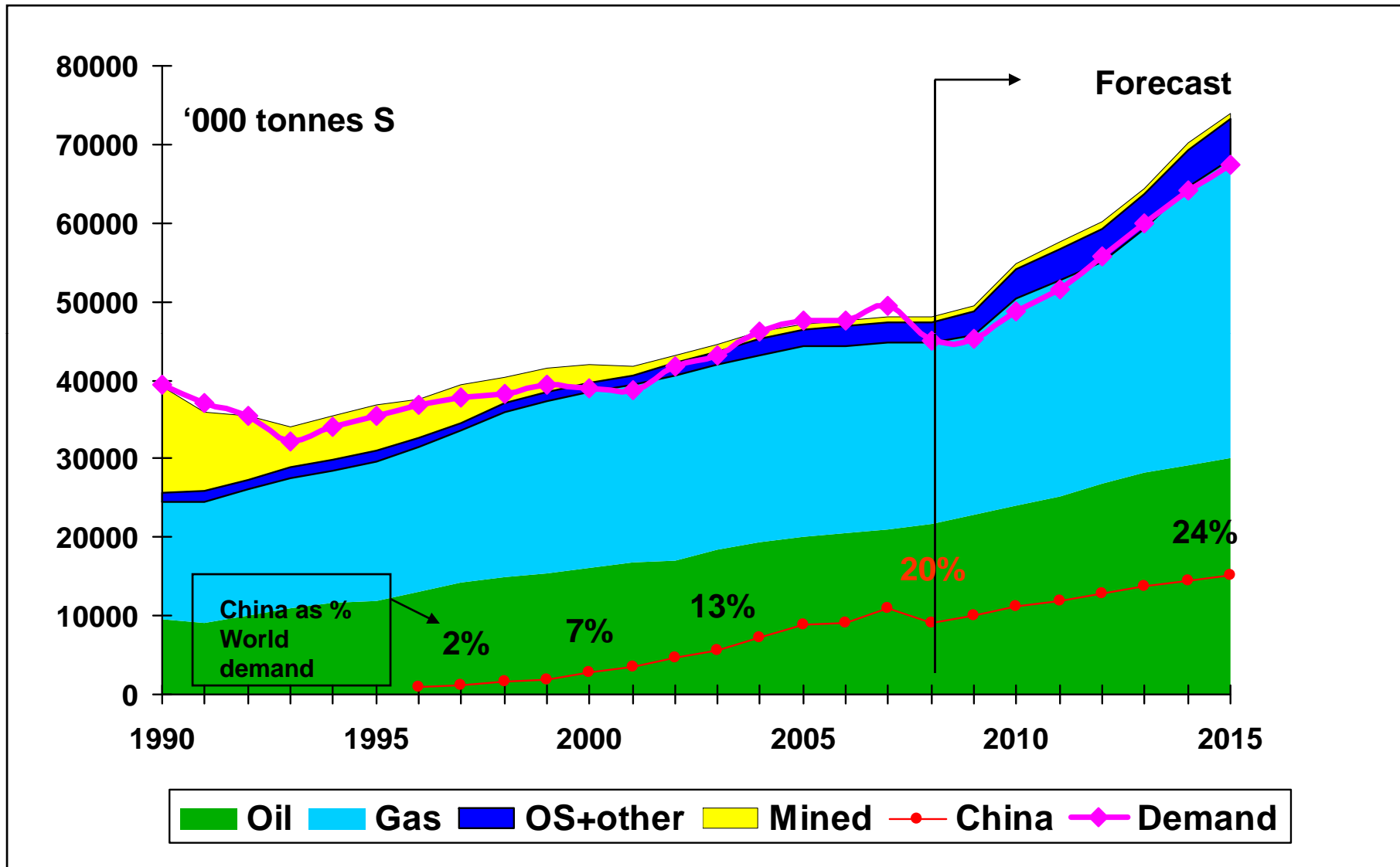
Vancouver \$35-45 fob

ADNOC – October \$45/tonne fob

Elemental Sulphur Balance & Price



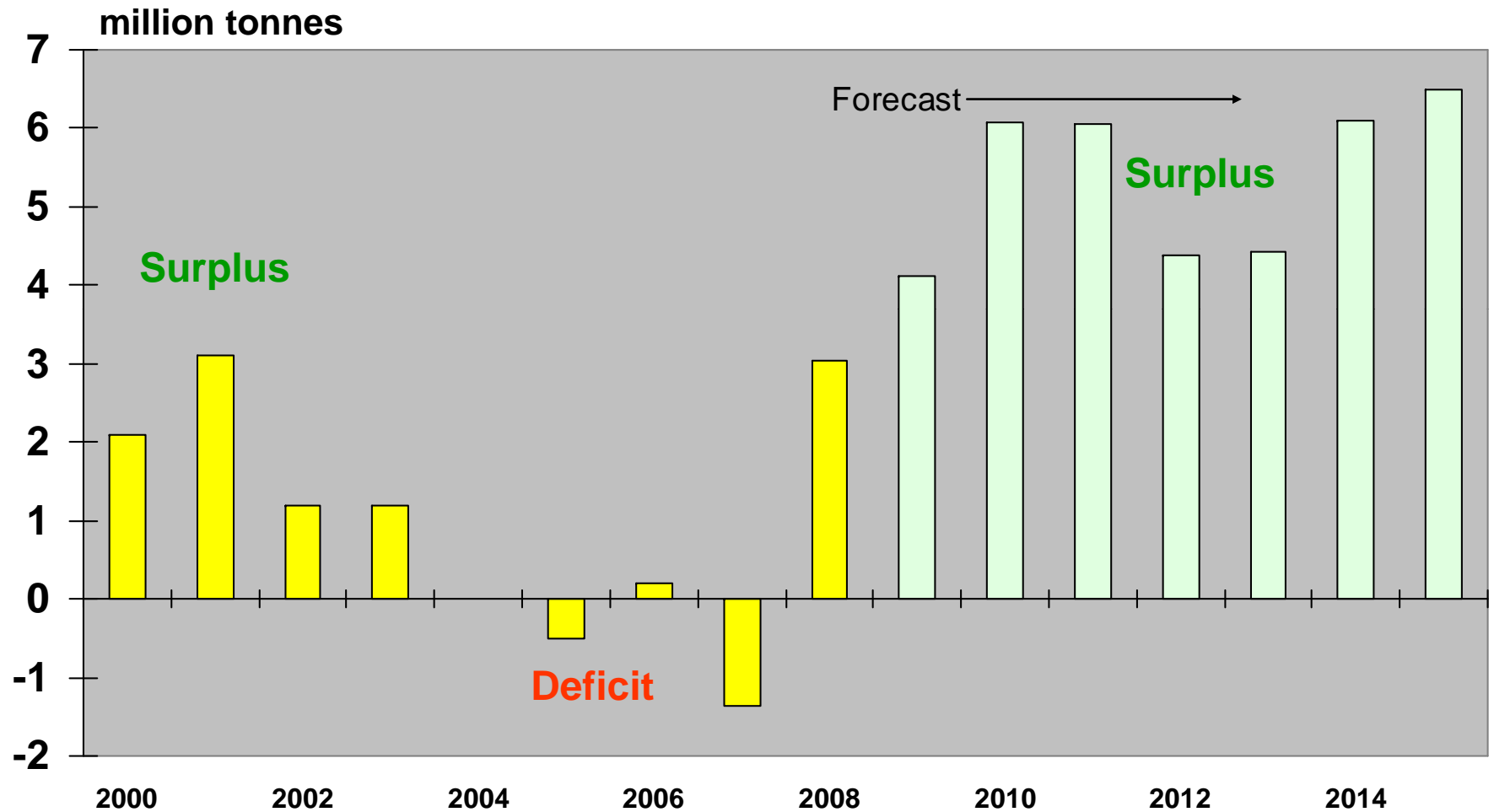
World Elemental Sulphur Production and Demand



Revised September 2009

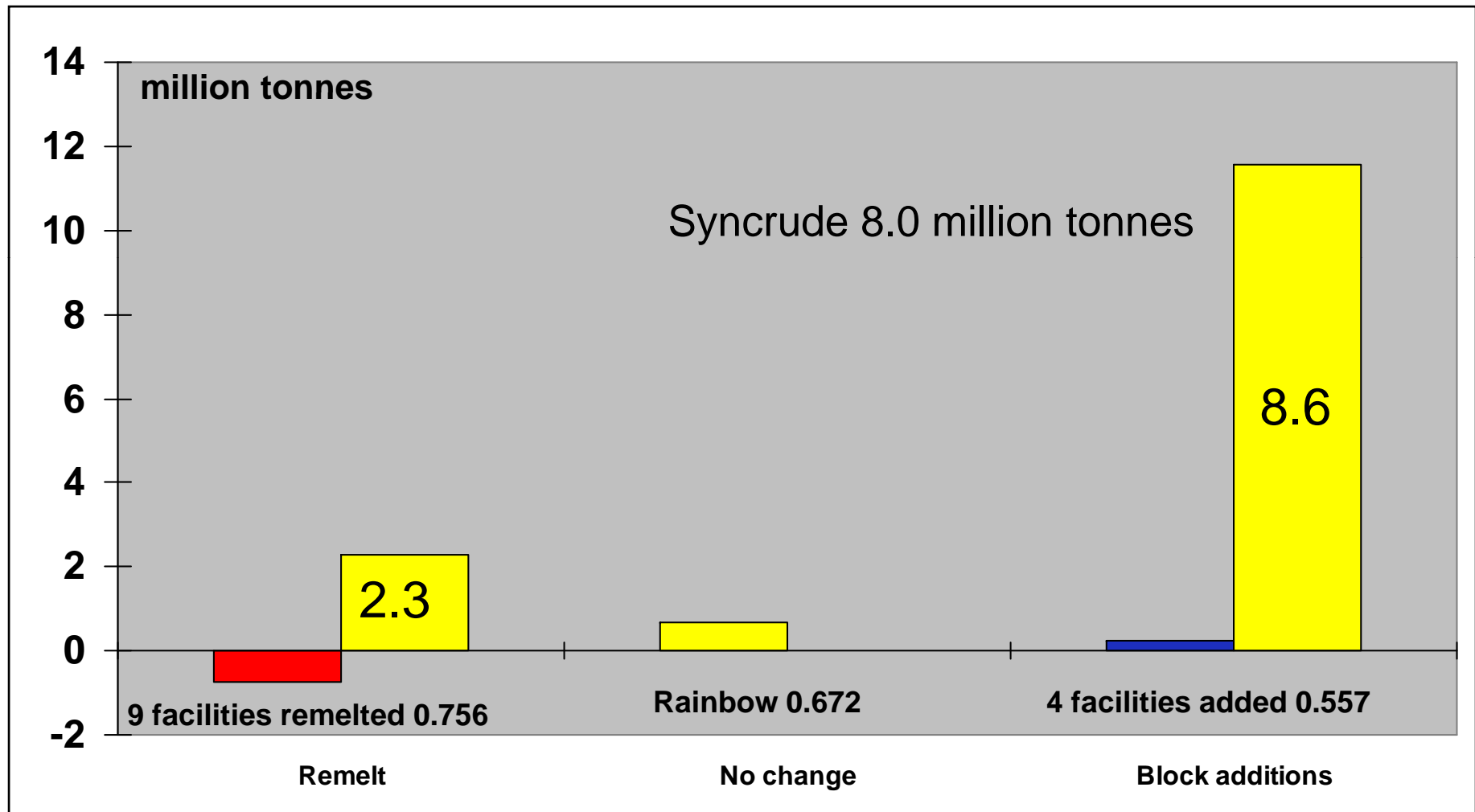
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World Elemental Sulphur Balance - Forecast

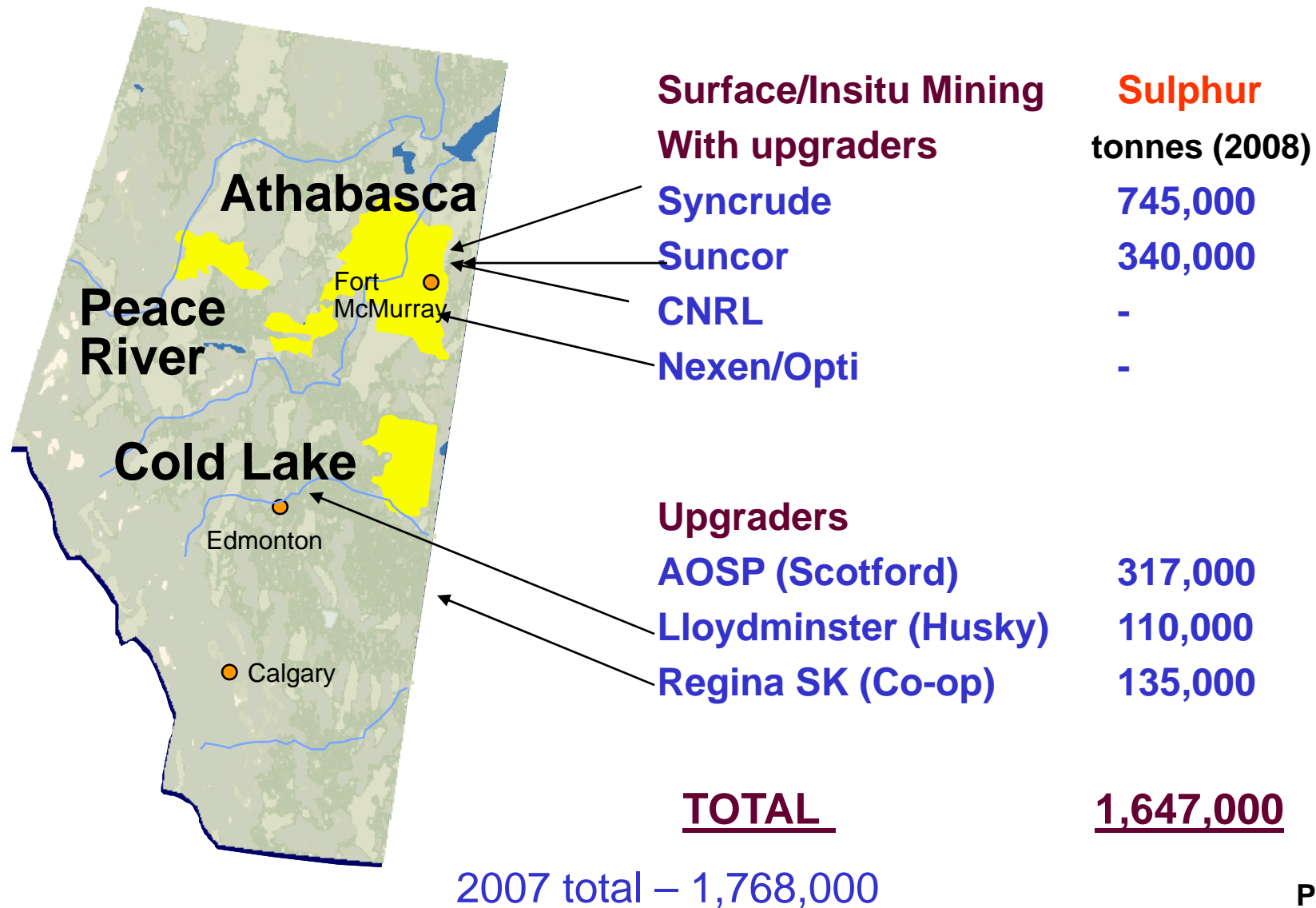


Updated September 2009

Western Canada Inventory - end 2008



Sulphur Production from Oilsands Operations



Ft. McMurray Region Sulphur Production Forecast

FORECAST ELEMENTAL SULPHUR PRODUCTION (‘000 tonnes)								
		2007	2008	2009	2010	2011	2012	2013
Suncor <i>Sulphur recovery 5,100 – 5,400 tonnes per million bbl/SCO</i>								
Oil	‘000 bbls/day	230	250	350	350	350	350	350
Sulphur	tonnes	433	375	450	500	500	500	500
Syncrude <i>Sulphur recovery 6,700 tonnes per million bbl SCO</i>								
Oil	‘000 bbls/day	325	350	350	350	370	400	400
Sulphur	tonnes	764	750	800	850	900	1,000	1,000
CNRL <i>Sulphur recovery 6,300 tonnes per million bbl SCO</i>								
Oil	‘000 bbls/day	0	0	45	110	150	175	175
Sulphur	tonnes	0	0	100	250	350	400	400
Nexen/Opti <i>Sulphur recovery 8,900 tonnes per million bbl SCO</i>								
Oil		0	15	37	60	60	60	60
Sulphur		0	0	30	195	195	195	195
TOTAL	Sulphur	1,197	1,125	1,380	1,795	1,845	2,095	2,095

Red indicates recent revisions to forecast

- **Suncor** struggles with production, reduces capex for upgrader expansion planned for 2010/2011 – now much later.
- **Nexen/Opti** starts production at Long Lake in early 2009, has start-up problems. Has shelved Phase 2 originally planned for 2012.
- **CNRL** on stream in early 2009. Block pouring systems in place.

1 million tonnes of potential production removed from the forecast.

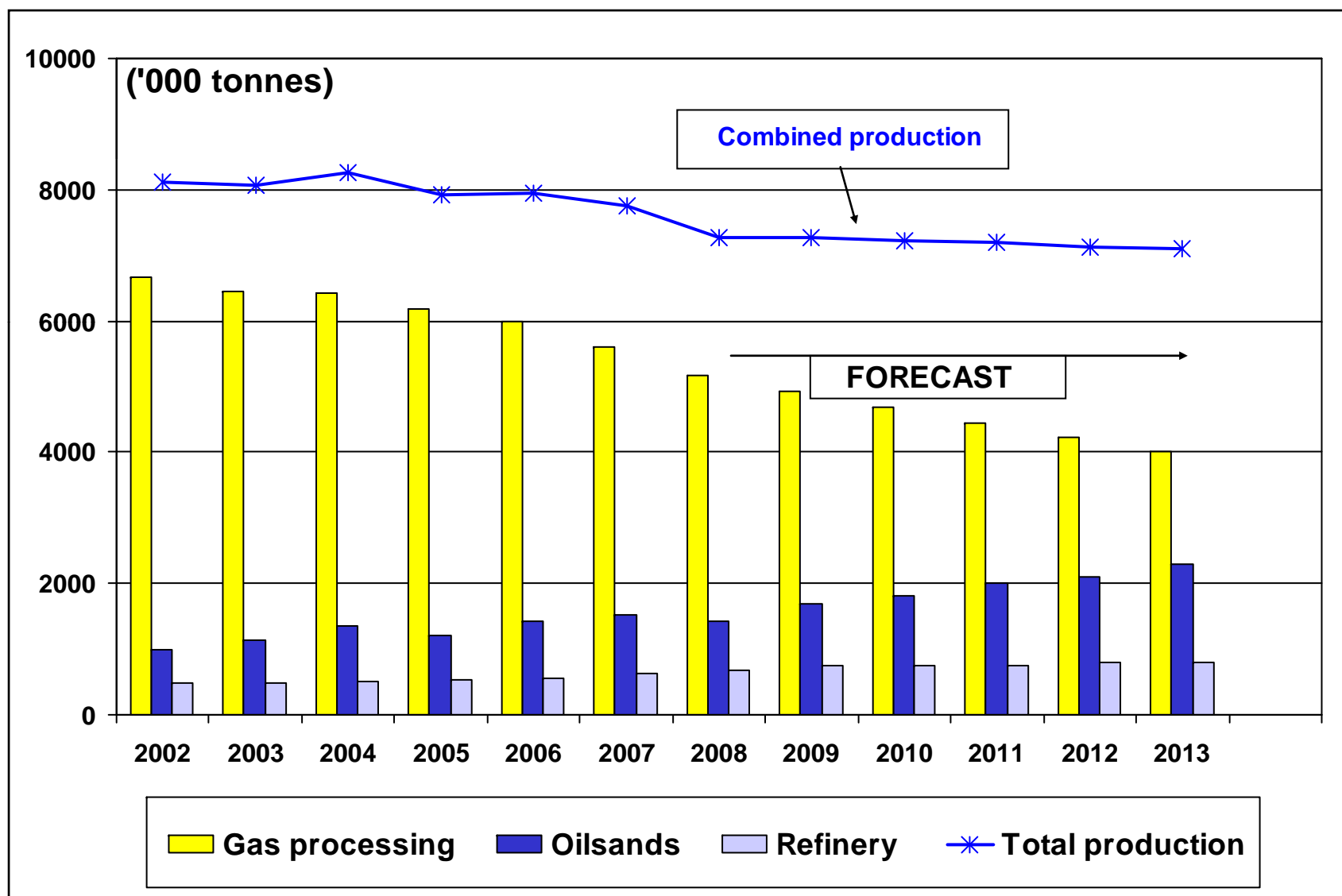
EDMONTON AREA UPGRADERS SULPHUR PRODUCTION FORECAST

('000 tonnes)

		2007	2008	2009	2010	2011	2012	2013
Scotford 1		323	354	360	500	620	620	620
Scotford 2	DELAYED							
BA Energy	SHELVED							
NW Upgrader	STALLED							
Fort Hills	DELAYED							
Synenco	CUT							
Total	DELAYED							
StatoilHydro	DELAYED							
Petro-Canada Strathcona		0	10	70	100	100	100	100
TOTAL	Sulphur	323	364	430	600	720	720	720

- Estimates run from **\$30-80 billion** reduction in planned expenditures.
- Future prospects will be influenced by **lower oil prices**.
- Ability to **finance** major projects now an issue.
- Major **reduction in capex** for 2009.
- **Mining projects** fare better than upgraders.

Canada - Sulphur Production 2002-2013



Canada Sulphur Balance

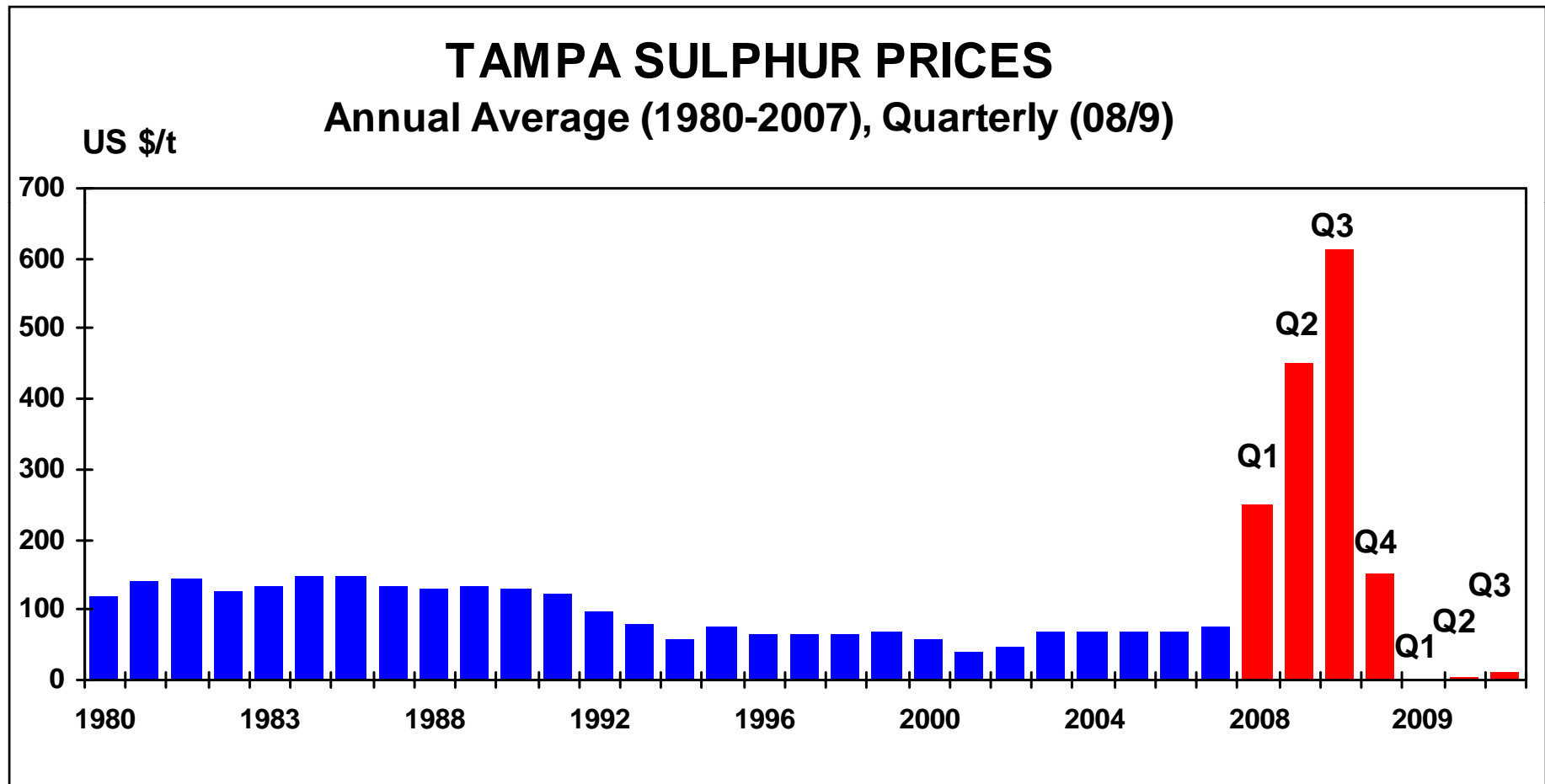
	2008	2009	2010	2011	2012	2013	2014	2015	2020
Production									
Gas	5.18	4.92	4.68	4.44	4.22	4.00	3.84	3.68	3.20
Oil/oilsands	2.09	2.45	2.55	2.75	2.90	3.00	3.00	3.10	4.00
Total Production	7.27	7.37	7.23	7.19	7.12	7.00	6.84	6.78	7.20
Blocking	0.56	1.00	1.10	1.25	1.4	1.4	1.5	1.5	2.0
Remelt	0.76	0.10	0.10	0.10	0.2	0.2	0.3	0.5	0
Net Supply	7.47	6.47	6.23	5.49	5.92	5.40	5.64	5.78	5.2
DEMAND									
Domestic	0.60	0.50	0.55	0.55	0.45	0.30	0.30	0.30	0.3
USA (low)	2.16	1.0	1.2	1.3	1.2	1.0	0.8	0.7	0.5
(high)		1.2	2.2	2.0	1.9	1.9	1.4	1.0	0.7
Offshore	4.71	4.77	3.48	3.49	3.57	3.6	3.94	4.48	4.2
(Potential)		4.97	4.48	4.19	4.27	4.5	4.54	4.78	4.4

In any scenario, future availability for offshore export is much lower.

Q4 Demand Collapse Stresses US Market

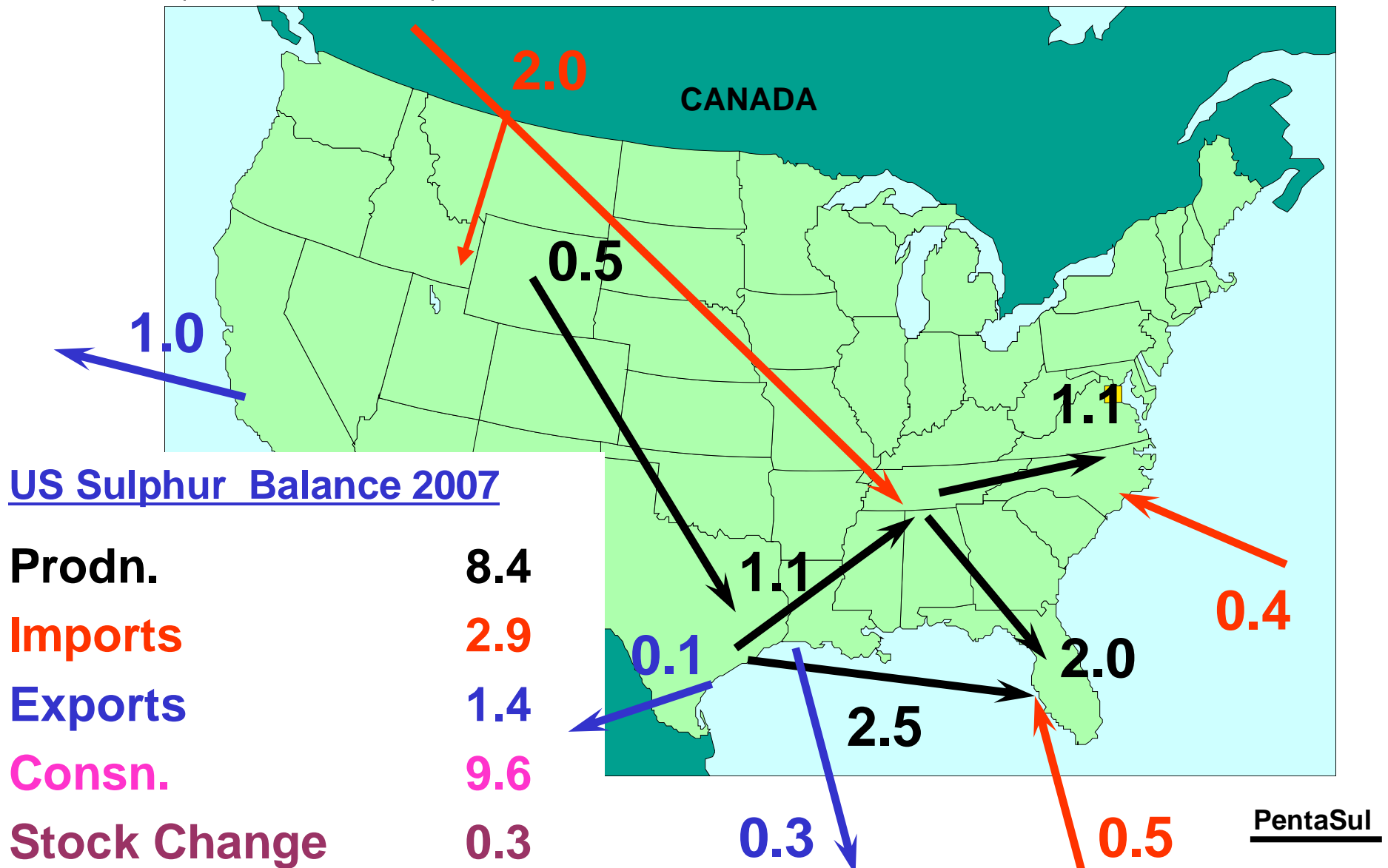
- Demand for both phosphates and industrial collapses from September 08.
- US sulphur production above expectations.
- Short-term: imports backed out, inventory builds everywhere. Prices crater.
- Longer-term: focus on prilling intensifies.
 - Serious implications for **Canada** for US sales and offshore via competition from US Gulf.
 - **US Gulf export price** likely to become benchmark, may eventually impact or even set domestic price.

US Sulphur Prices High, Volatile in 2008



US Sulphur Long Range Movements

(million tonnes)



US Sulphur Demand Collapse Q4-08

- Started in the phosphate sector.
 - Export market disappears on low demand
 - Domestic fall season disastrous.
- Industrial sector follows.
 - Economic crisis causes widespread cutbacks.
 - Caprolactam hard-hit.

About 1.4 million t sulphur demand lost in Q4 compared with Q3.

US Gulf Exports Surge in Late 2008

US GULF SULPHUR EXPORTS	
(‘000 tonnes)	
Martin Midstream, Beaumont	
2006	195
2007	341
2008	228
GSS, River Sulphur Facility, Faustina	
2006	107
2007	66
2008	75
US Gulf 2006 Total	302
US Gulf 2007 Total	407
US Gulf 2008 Total	303

183,000 tonnes exported in Nov/Dec 2008 alone lifted 2008 total to over 300,000 tonnes again.

How the Q4 Slump was Balanced

US Sulphur Market Changes Q4 vs. Q3 2008 '000 tonnes		
US Demand	<1,400>	
US Production	+200	Refineries stronger
Net Supply Cut Needed	<1,600>	
More US Exports	+200	USG Nov/Dec
More US Blocking	+200	Galveston
Canadian Imports Cut	+200	
US Sulphur System	+1,000	Started empty

System severely stressed. Cooperation all round.
 Railcars stalled contributed to Canadian pullback.

US Sulphur Balance

	2006	2007	2008
DEMAND	11.25	11.52	10.02
- Cons.	9.85	10.00	8.75
- Exports	1.40	1.52	1.27
CA+	1.10	1.11	0.97
US Gulf	0.30	0.41	0.30
SUPPLY	11.33	11.15	11.56
- Recovered	8.39	8.28	8.59
Oil Refining	6.96	7.00	7.43
Gas Processing	1.43	1.28	1.16
- Imports	2.94	2.87	2.97
Canada	2.10	2.09	2.16
Mexico	0.48	0.42	0.36
Venezuela	0.36	0.34	0.34
Other	-	-	0.11
STOCK CHANGE	0.08	(0.37)	1.54

million tonnes

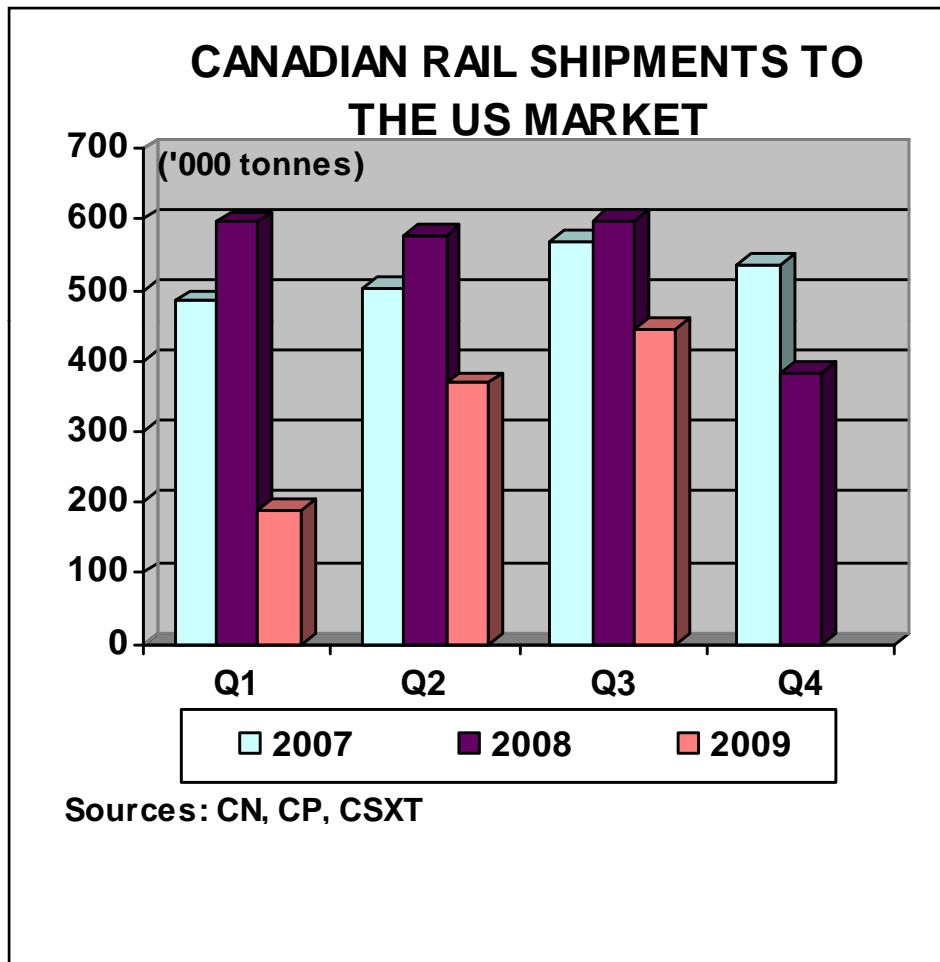
US Sulphur Market Rebalances in 2009

- Phosacid capacity utilization ramps up in February/March to 70% and to >80% by the summer.
- Industrial plants begin to restart.
- Strong US Gulf exports all year.
- Canadian imports will be about 1 million tonnes less than in 2008.
- Slightly higher refinery sulphur production.

Blocking ceases at Galveston mid-February.

350,000 tonnes inventory now being drawn down.

Canadian Sales to US Market



- 2008 strong until Q4 slump. For the year **CN** market share increased to **57%**, **CP 40%**.
- Q1-09 the worst quarter since 2001, both major railways show declines.
- Steady recovery since.

US Sulphur Market Rebalances in 2009

US Sulphur Supply/Demand Changes Quarter-on-Quarter '000 tonnes				
	Q4-08	Q1-09	Q2-09	Q3-09
Demand	<1,400>	+100	+400	+400
Production	+200	<100>	+50	<100>
Supply Change	+1,600	<200>	<350>	<500>
Canadian Imports	<200>	<200>	+200	+75
Offshore Imports	0	<150>	0	+25
Blocking	<200>	+50	+100	0
Exports	<200>	<350>	+200	<20>
Inventory	+1,000	<850>	+150	<420>

US Refinery Sulphur Growth Projects

Company	Location	Current Sulphur (‘000 tonnes)	Expansion O/S date	Sulphur Increase (‘000 tonnes)
Valero	Corpus Christi, TX	190	2008	40
Marathon	Garyville, LA	200	2009	175
Total	Port Arthur, TX	70	2011	140
Valero	Norco, LA	50	2012	30
Motiva	Port Arthur, TX	175	2012	250
Valero	Port Arthur, TX	270	On hold	100
Chevron	Pascagoula, MS	325	2013?	250
TOTAL		1,280		985

US Gulf

Company	Location	Current Sulphur (‘000 tonnes)	Expansion O/S date	Sulphur Increase (‘000 tonnes)
Marathon	Catlettsburg, KY	55	2010	90
BP	Whiting, IN	120	2011	360
Marathon	Detroit, MI	25	2011	100
COP/EnC	Wood River, IL	120	2011	550
COP/EnC	Borger, TX	125	2012	100
Tesoro	Martinez, CA	70	2012	70
Husky	Lima, OH	10	2012?	250
BP/Husky	Toledo, OH	40	2013?	100
TOTAL		565		1,620

Non USG

Most of the above directly driven by AB oilsands.

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USG Prillers Play Major Role in 2009

US Gulf Sulphur Exports 2009				
'000 tonnes				
	Beaumont	RSF	Galveston	Total
Jan.	86	100	-	186
Feb.	70	100	37	207
March	70	40	30	140
April	90	35	-	125
May	0	0	32	32
June	127	37	-	164
July	9	38	55	102
Aug.	138	30	21	189
Sept.	31	18	-	49
Oct. ^e	50	-	24	74
YTD	671	398	24	1,268

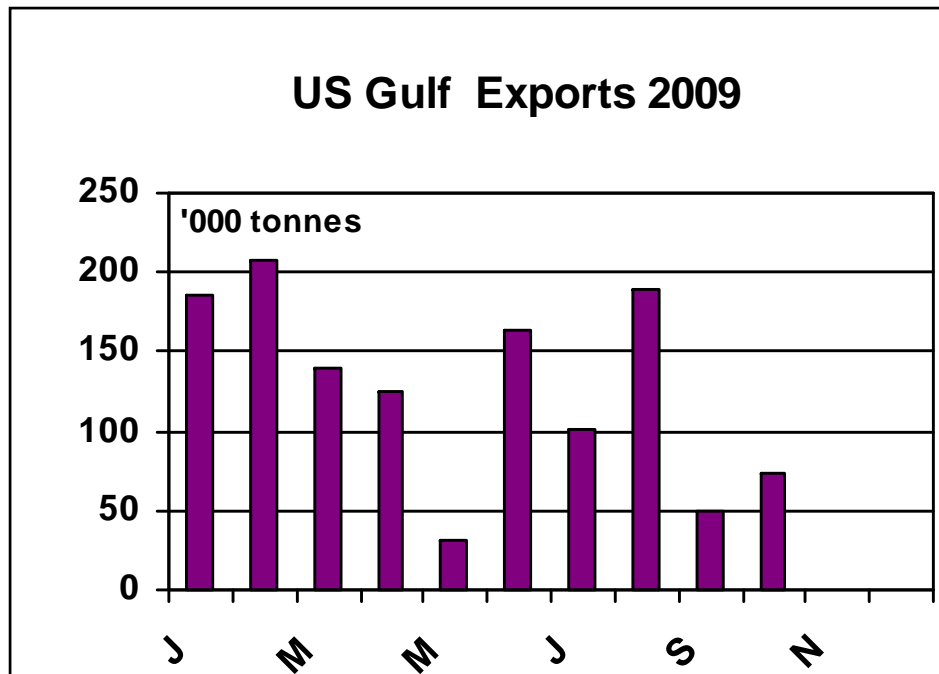
Two existing plants ran flat out in Q1-09.

New unit at Galveston started in February 2009.

Sales to China in Q1, Atlantic markets from Q2.

Exports volume sustained in summer months.

Volume declines from Sept.



US Sulphur Active Prillers

West Coast

- Four existing CA plants well-matched to present and expected surplus of around 0.8-1.0 million tonnes/year.
- Marsulex CA plant assumed dead.
- Small WA plant still has a role.

Gulf Coast

- **Martin Midstream** - 4,200 tonnes/day capacity at **Beaumont** and 150,000 tonnes prill storage.
(Subscribers – XOM, Shell, COP)
 - **GSS** – 4,000 tonnes/day at **RSF New Orleans** with 90,000 tonnes prill storage; (XOM, Shell, Marathon)
 - **GSS** - 2,000 tonnes/day at **Galveston** with 90,000 tonne prill and 650,000 tonne block storage capacity.
(Subscribers BP, XOM, Shell, Valero for first two lines.
Third line will include other subscribers - Lyondell)
- 15,000 tonnes/day total nominal prilling capacity available.

US Regional Analysis

US Regional Sulphur Surpluses million tonnes			
	Current	2015 proj.	Increase
West Coast	1.0	1.3	0.3
Midwest	0.8	0.8	0
Chicago	0.9	1.8	0.9
Texas Coast	3.0	3.6	0.6
Gulf Coast	0.2	0.9	0.7

TX and GC already being developed by incumbents.

Chicago-area options being studied, up for grabs!

US Prilling Projects

Big incentive for US refiners to get involved proactively before the next demand downturn – 2001 in spades!

- **Southern States** at **Savannah**, GA announces ~350 t/day unit for 2009.
- **Chevron** looking at Alabama or Mississippi forming location for Pascagoula tonnage.
- **Koch, Corpus** confirmed with **Martin's** PrillMax 2,000 t/day by end 2009.
- **Kinder Morgan/Devco** still looking for a project in Houston/Beaumont area. **Total** at **Port Arthur** candidate, but has yet to commit to a partner.
- **Midwest** – several active projects. **BP** heavily involved, **COP** and **XOM** will also commit; at least two plants likely to be built at third party locations.

US Sulphur Balance

	2008	2009	2010	2011	2012	2013	2015
DEMAND	10.02	11.3	11.1	11.4	11.9	12.4	12.6
- Cons.	8.75	8.6	9.0	9.2	9.3	9.3	9.0
- Exports	1.27	2.7	2.1	1.9	2.6	3.1	3.6
CA+	0.97	1.1	1.1	1.1	1.1	1.1	1.1
US Gulf	0.30	1.6	1.0	0.8	1.5	2.0	2.5
SUPPLY	11.56	11.1	11.1	11.4	11.9	12.4	12.6
- Recovered	8.59	8.9	8.9	9.0	9.3	10.0	10.4
Oil Refining	7.43	7.7	7.9	8.0	8.3	9.0	9.4
Gas Processing	1.16	1.2	1.0	1.0	1.0	1.0	1.0
- Imports	2.97	2.2	2.2	2.4	2.6	2.4	2.2
Canada	2.16	1.4	1.5	1.5	1.7	1.4	1.2
Mexico	0.36	0.5	0.4	0.5	0.5	0.5	0.5
Venezuela	0.34	0.3	0.3	0.4	0.4	0.5	0.5
Other	0.11	-	-	-	-	-	-
STOCK CHANGE	1.54	(0.2)	-0-	-0-	-0-	-0-	-0-

million tonnes

Possible Evolution of a 21st Century US Sulphur Export Industry

Past and Present

- Mining industry exports via Webb-Pomerene org.
- CA builds export industry to accommodate structural surplus.
- Post-2001 US Gulf prilling units built – not structural but standby.
- 2008 market downturn precipitates more projects including non-US Gulf locations.

Future??

- Acceptance of non-CA sulphur exports from US as a permanent feature.
- Commitment to establishing a marketing program, and a slate of customers regardless of domestic market.
- US Gulf export price likely to become a benchmark, could possibly replace the outmoded *“Tampa Price”*.