

Global Coal and Coke Flows, 2008

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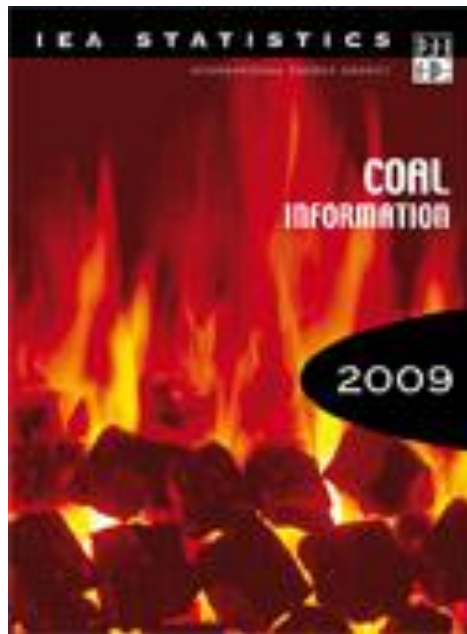


Global Coal and Coke Flows

What we will see:

- 1 How much steam coal is produced/ consumed?
- 2 Who are biggest Producers? Consumers?
- 3 How much /where is the steam coal trade?
- 4 How much/why/where is the FG coke trade?
- 5 Anomalies in FG coke trade
6. Where is FG coke trade headed?

About the International Energy Agency (IEA)



- Paris based
- Energy Policy Advisor to 28 Member countries
- Policies:
 - Energy Security
 - Economic Development
 - Environmental Protection

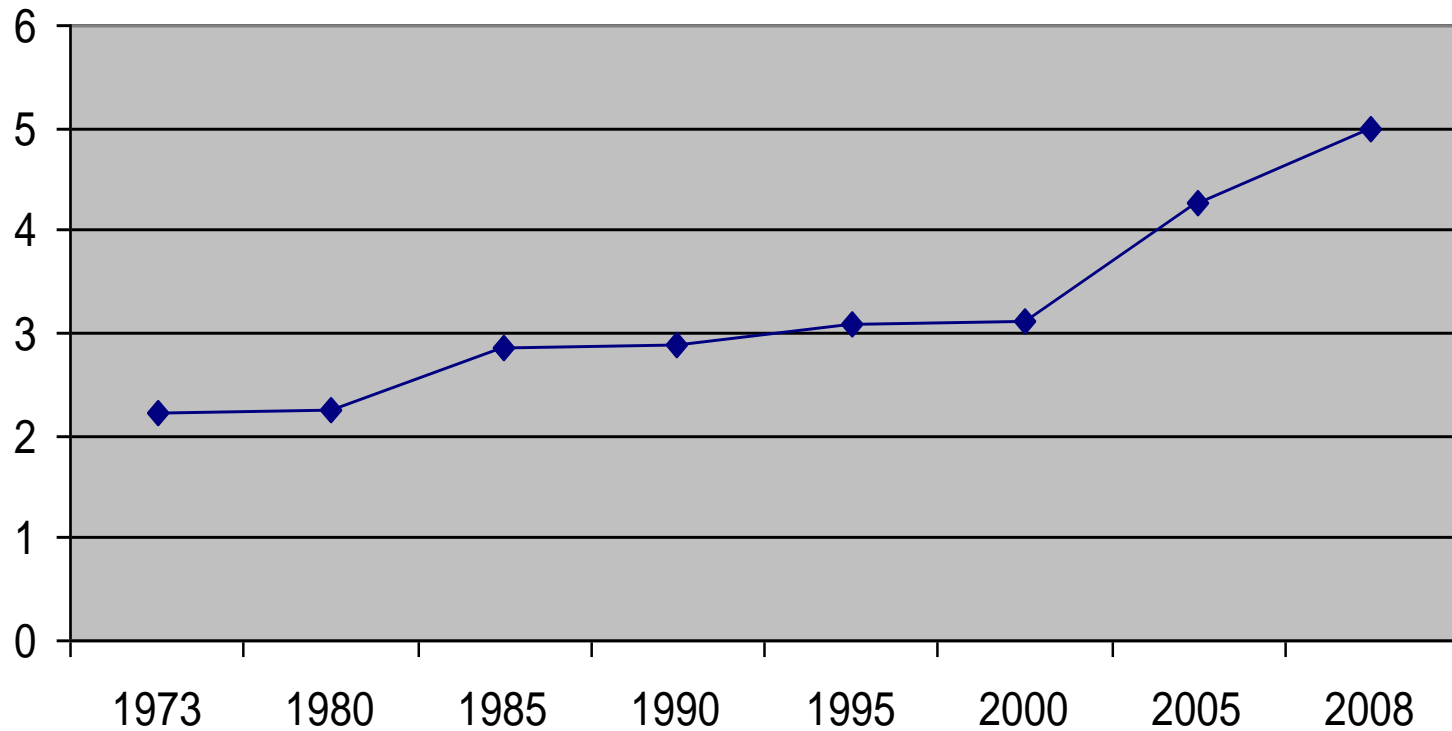


28 IEA Member Countries

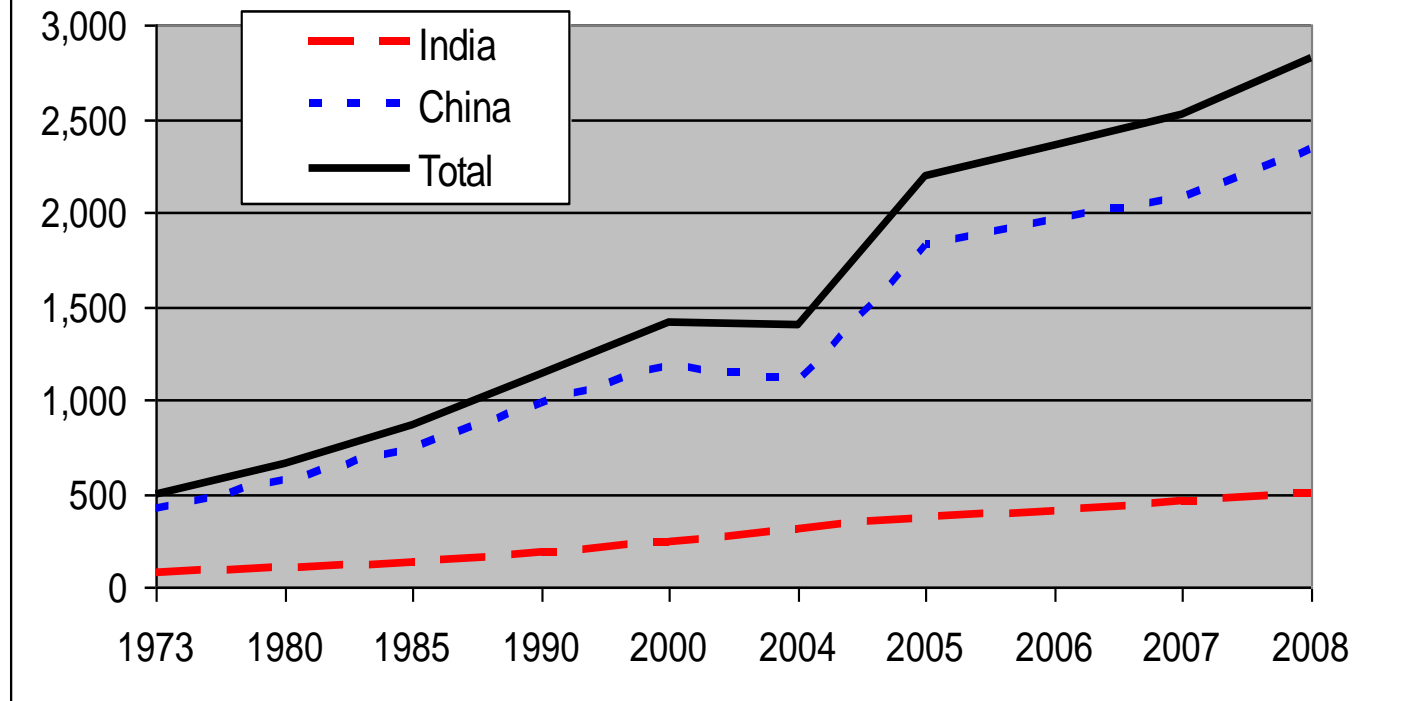
- Australia
- Austria
- Belgium
- Canada
- Czech Rep
- Denmark
- Finland
- France
- Germany
- Greece
- Hungary
- Ireland
- Italy
- Japan
- Korea (S)
- Luxembourg
- Netherlands
- New Zealand
- Norway
- Poland
- Portugal
- Slovak Rep
- Spain
- Sweden
- Switzerland
- Turkey
- United Kingdom
- United States



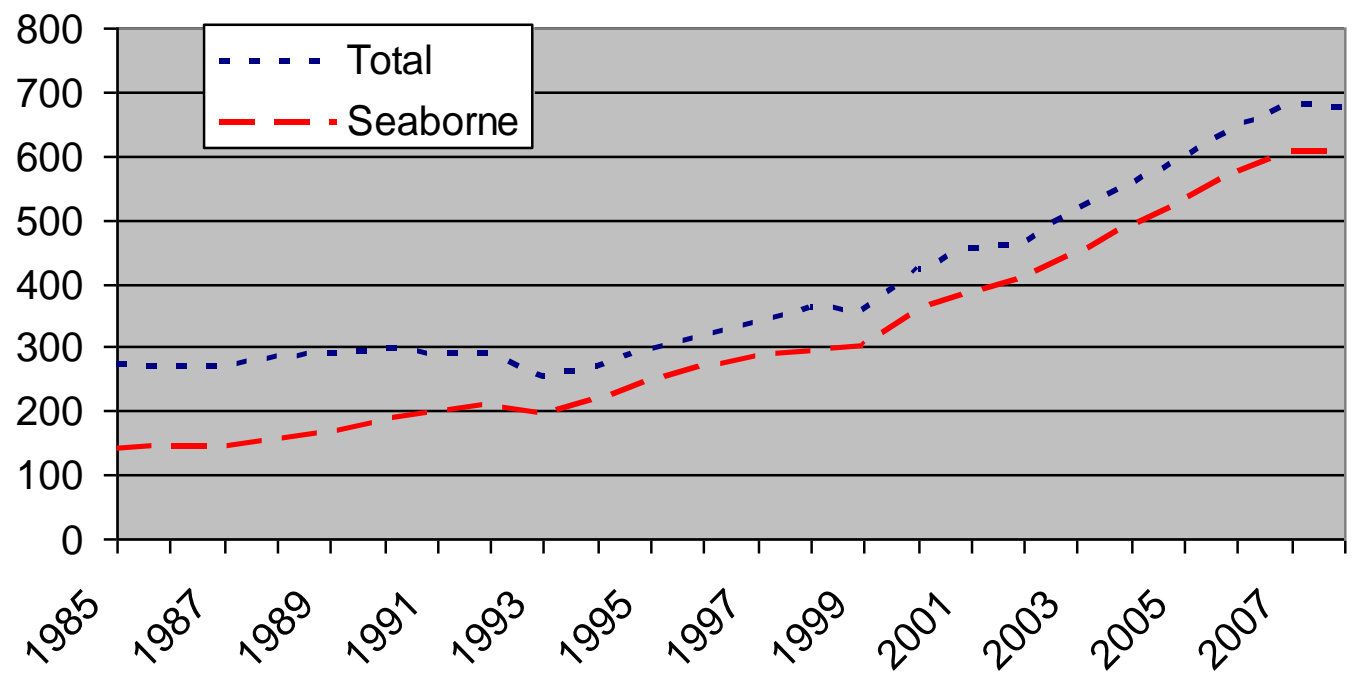
Global Steam Coal Production, B mt/yr 1973 to 2008



China and India Steam Coal Consumption, B mt/yr 1973-2008



Global Steam Coal Trade, MM mt/y 1985-2008



2008 Steam Coal

Major Net Exporters and Importers MM met tons

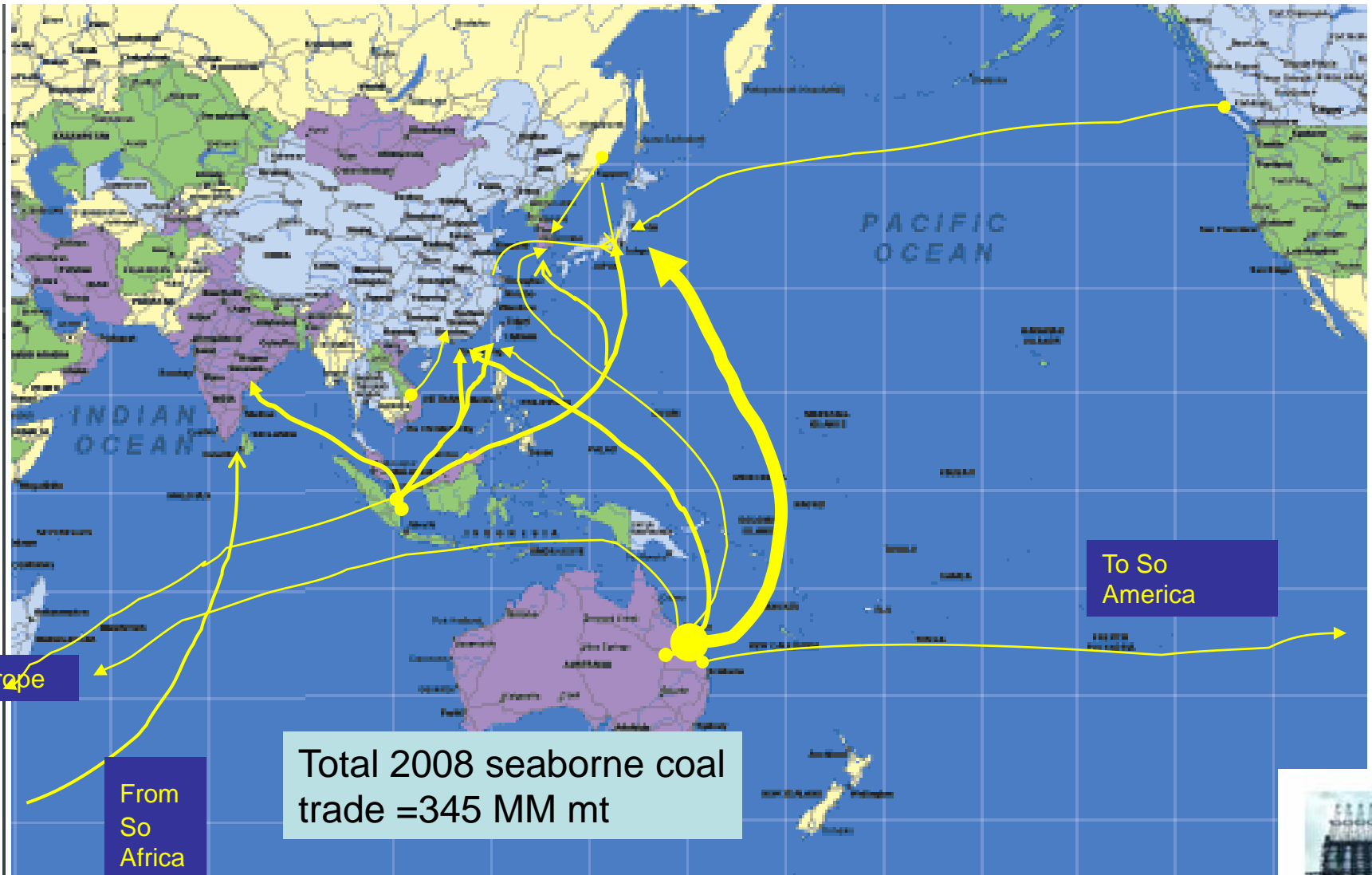
	Prod	Cons	Net Exp			Prod	Cons	Net Imp
China	2333.9	2326.6	7.3		India	461.9	491.7	29.8
USA	949.2	937.1	12.1		Europe (IEA)	104.5	268.5	164.0
So Africa	234.2	172.9	61.3		Japan		128.2	128.2
Indonesia	214.9	41.9	173.0		Korea	2.8	81.0	78.2
Australia	185.3	70.0	115.3		Chinese Taipei	2.4	60.2	57.8
Russia	181.9	121.9	60.0		Malaysia	1.1	17.0	15.9
Kazakhstan	90.6	63.6	27.0		Hong Kong		13.5	13.5
Colombia	77.3	3.7	73.6		Mexico	9.6	12.7	3.1
Poland	72.3	70.7	1.6					
Vietnam	39.9	19.9	20.0					
Ukraine	37.6	36.3	1.3					
DPR Korea	28.6	25.9	2.7					
Subtotal	4445.7	3890.5	555.2		Subtotal	582.3	1072.8	490.5

2008 Steam Coal

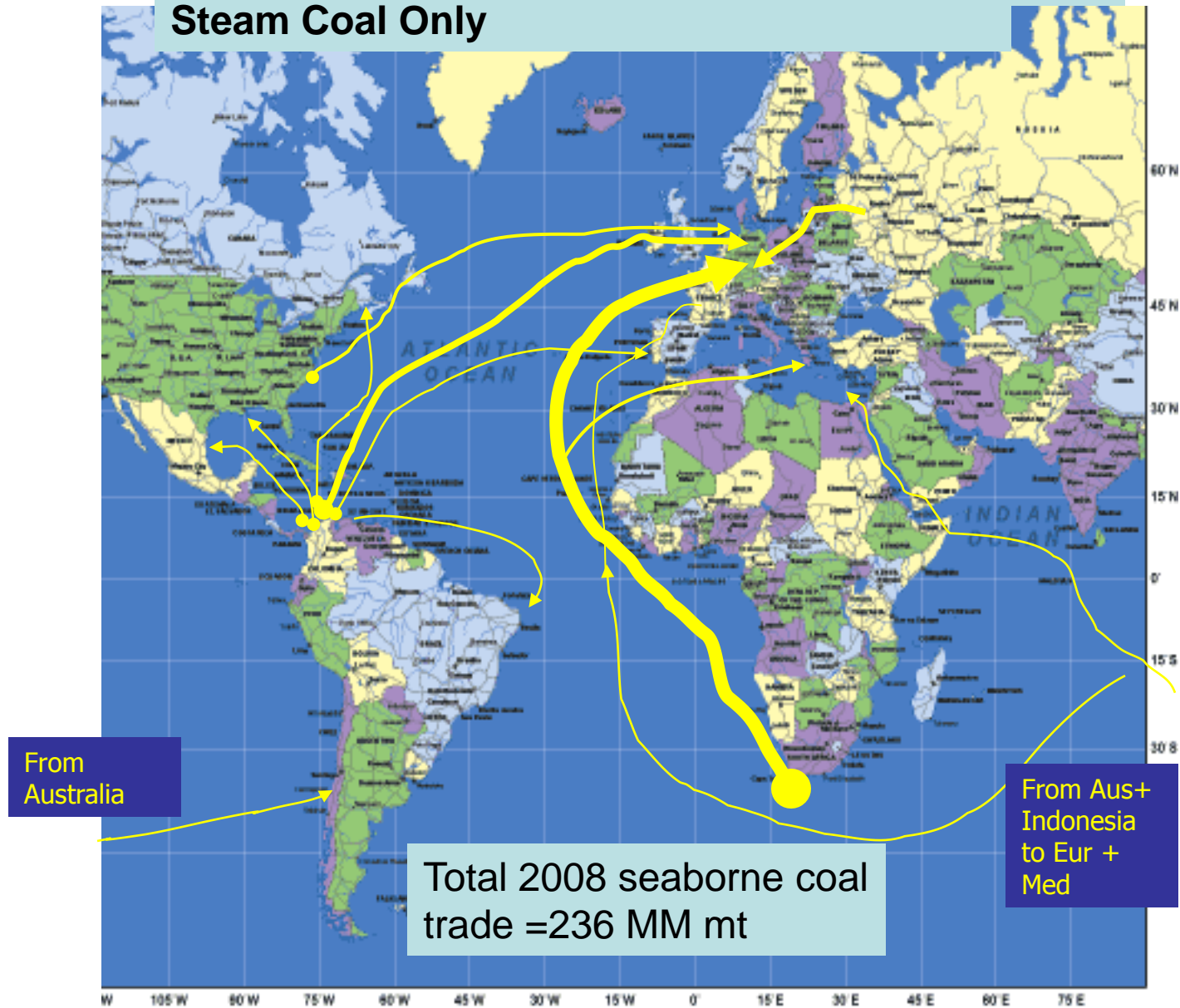
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2008 Pacific Basin Seaborne Trade Routes Steam Coal Only



2008 Atlantic Basin Seaborne Trade Routes Steam Coal Only



Fuel Grade Pet Coke 2008, MM mt/yr

Global Production	104
Less to inventory	- 4
<u>Less Calcineable</u>	<u>-25</u>
Net FG Production	75
<u>Less domestic use</u>	<u>-39 (est)</u>
Net for trade	36
Trade breakdown:	
Seaborne trade	31
Land Trade	5

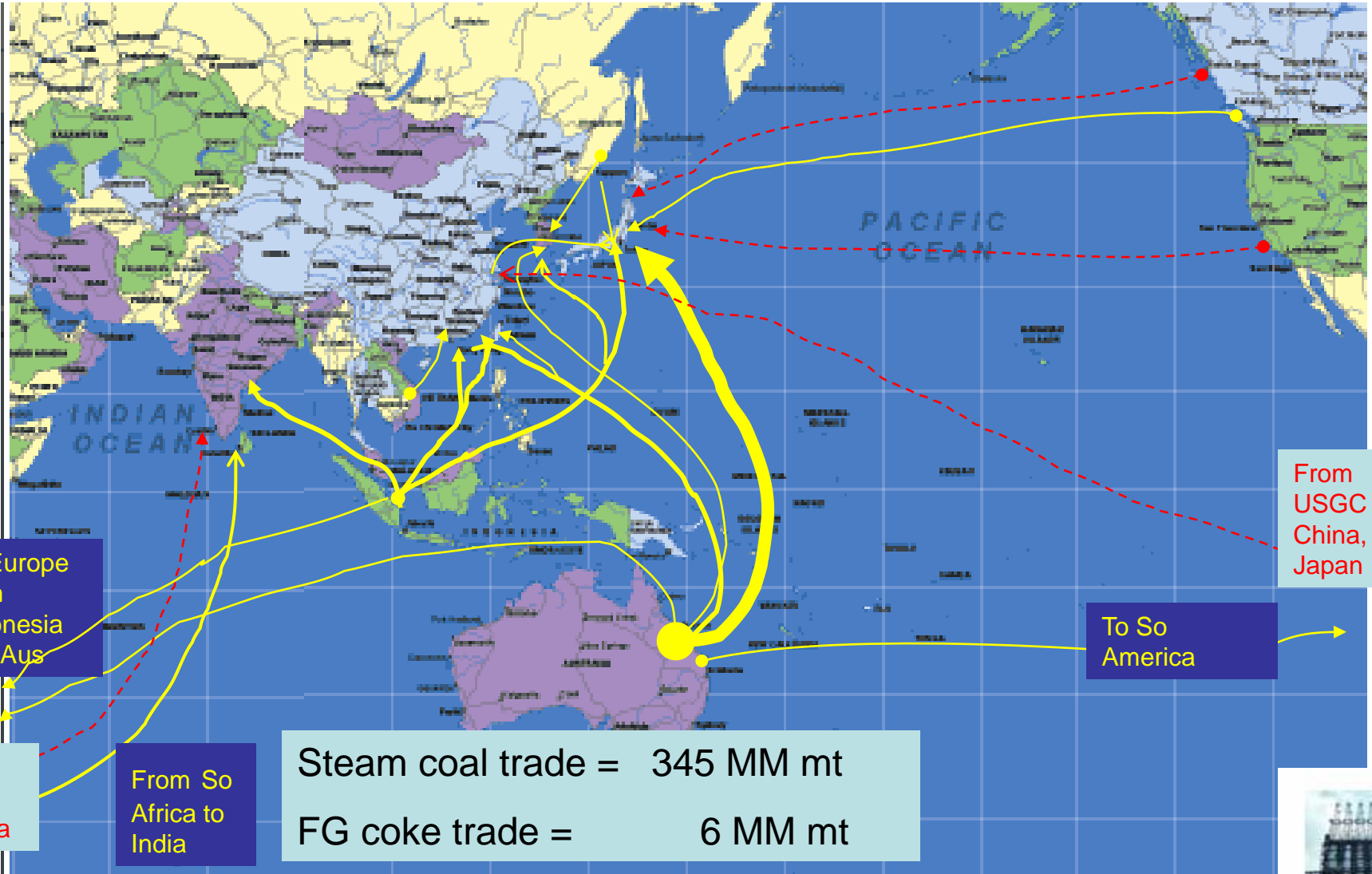


Fuel Grade Pet Coke, Net Seaborne Trade, MM mt/yr

Exporter:	To Atlantic Basin	To Pacific Basin	Total
US	12.6	5.5	18.1
Canada	0	0.7	0.7
Carib/Venezuela	7.0	0	7.0
Med	0.4		
Other unidentified	<u>5.0</u>	<u>0</u>	<u>5.0</u>
Total	24.6	6.2	30.8



2008 Pacific Basin Seaborne Trade Routes Steam Coal and FG Pet Coke



2008 Atlantic Basin Seaborne Trade Routes Steam Coal and FG Pet coke

From USWC
to Europe

From USGC
to China,
Japan

From
USGC to
India

From Aus+
Indonesia

From
Australia

Coal trade = 236 MM mt
Coke trade = 25 MM mt



Global Coal and Coke Flows

What we saw:

1 How much steam coal is produced/ consumed?

A: 5 B mt/yr, still growing

2 Who are biggest Producers? Consumers?

A: China, USA, India

3, 4 How much /where is the steam coal/FG trade (MM mt/y)?

	<u>Steam Coal</u>	<u>FG coke</u>
A: Atlantic basin	236	25
<u>Pacific Basin</u>	<u>345</u>	<u>6</u>
Global total	582	31

Typically, FG coke flows to same consuming areas as steam coal



Global Coal and Coke Flows

What we saw (cont'd)

5. Anomalies in FG coke trade

1. USWC to Europe and USGC to Asia both passing through Panama canal in opposite directions

A: small quantities, sizing, sulfur

2. Carib (Hovensa/St Croix) to Florida (JEA), why not USGC to Florida?

A: Jones Act ships

3. USGC FG coke to India via So African Cape; how can compete with Indonesia, So Africa and Australia steam coal?

A: very small quantities, may be Calcineable

4. Why does US import Colombian steam coal while exporting FG coke?

A: USGC FG coke too high in sulfur for existing US conventional boilers



Global Coal and Coke Flows

What we saw (cont;d):

6. Where is FG coke trade headed:

Bullish FG coke trade issues:

- Continuing interest in FG coke preference over steam coal for cement plants
- New RIL coker in India exceeding domestic demand
- New Petro Canada Upgrader
- Reduced need for CPC as domestic potlines close
- India and China economies continue to grow

Bearish FG coke trade issues:

- Current reductions in coke production from soft refining margins
- Higher freight as global economy improves
- Long term Impact of GHG/CO2 regs



Steam Coal And FG Coke trade Reference charts

Following 4 slides are for reference

- Steam coal producers rank 1990, 2000, 2008
- Pacific Basin Steam Coal seaborne trade (majors only)
- Atlantic Basin Steam Coal seaborne trade (majors only)
- FG Coke seaborne trade



Major steam coal producers

Historical Rank , MM mty/yr

Country	2008	2008 rank	2000 rank	1990 rank
China	2333.9	1	1	1
US	949.2	2	2	2
India	461.9	3	3	3
So Africa	234.2	4	4	4
Indonesia	214.9	5	9	
Australia	185.3	6	5	8
Russia	181.9	7	6	5
Kazakstan	90.6	8	8	7
Colombia	77.3	9	10	
Poland	72.3	10	7	6



2008 Pacific Basin Steam Coal Seaborne Trade, (Majors only) MM t/y

Exporters

	Indonesia	Australia	PR China	Vietnam	Russia	So Africa	Canada	Total
Importers								
Japan	26.6	67.0	11.4	2.0	8.9	0.1	2.0	117.9
Chinese Taipei	26.0	18.6	10.8	0.0	0.9	0.0	0.0	56.3
Korea	25.3	18.6	0.0	0.9	6.4	0.9	1.9	54.1
India	20.7	0.7	0.0	0.0	0.0	7.8	0.0	29.1
China, PR	11.5	0.0	0.0	16.9	0.5	0.0	0.0	28.9
Hong Kong, China	12.7	0.0	0.0	0.0	0.0	0.0	0.0	12.7
Total Major Consumers Pacific	122.7	104.7	22.2	19.8	16.8	8.7	3.9	299.0



2008 Atlantic Basin Steam Coal Seaborne trade, (Majors only) MM t/y

	So Africa	USA	Indonesia	Colombia	Russia	Total
Importers:						
West Europe	24.5	11.7	6.6	21.5	51.0	115.3
Med	15.9	1.5	11.6	12.7	4.1	45.8
N Amer	4.3	0.0	2.4	32.8	0.2	39.7
LA	1.9	1.1	0.1	4.6	0.6	8.3
East Europe	0.2	0.4	0.4	4.3	1.6	7.0
Africa +ME	2.3	1.7	0.2	0.0	0.0	4.2
Total Major Consumers Atlantic	49.2	16.5	21.2	75.8	57.7	220.4



2008 Seaborne FG Coke Trade, MM mt/yr

	To Pacific Basin		To Atlantic Basin						Total
	Asia/Pacific	Latin Am (Pacific)	Latin Am (Atlantic)	Med	N Eur	Carib	E Eur	USA	
Exporters:									
Canada WC	0.7								0.6
USEC	-	0	0	-	-	0	0		0.0
USWC	4.5	0.4	.1	.1	0.5	0	0		5.5
USGC	0.6	0	2.0	5.0	3.7	0.6	0.6		12.5
Aruba/Ven			2.0	2.0	2.0	0.5		0.5	7.0
Med				0.4					0.4
Unidentified				2.5	2.5				5.0
Total	5.7	0.4	4.1	10.0	8.7	1.1	0.6	0.5	31.0