Global Fuel Oil Market Overview

Sharmilpal Kaur, Associate Editorial Director
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Global fuel oil market overview: Is the market bottoming out?

• Broad-based oil outlook
• Changing crude oil flows – what do shifting heavy/light crude oil dynamics mean for the residual fuel oil market?
• Shifting refining dynamics globally and how they affect demand and supply fundamentals
• Key emerging concerns in 2013 and beyond
New crude trade flows govern markets

Crude Exports in 2018 and Growth in 2012-18 for Key Trade Routes* (million barrels per day)

* Excludes Intra-Regional Trade

Source: IEA
US predicted to become world’s largest oil producer, overtaking Saudi Arabia, by 2020

- Implications for crude producers, Asian buyers, US role in Mideast...
US heavy-sour imports grow, but light-sweets getting quickly displaced...

Persian Gulf OPEC exports to US vs West African exports

Persian Gulf OPEC = Iran, Iraq, Kuwait, Saudi Arabia, UAE, Qatar

Source: US EIA
Refinery shutdowns in Europe and elsewhere have flipped dynamics.
Paradigm shift in market value of refining barrel

Value – the lighter the product, the higher the value (Before 2011)

Value – From 2012, paradigm shift in demand/supply fundamentals shift market value
Shifting fundamentals as gasoil demand rises

Light ends

Gasoil

Light ends
World oil demand growth hinges on Chinese, US economies for now

IEA projects 840,000 b/d growth in global oil demand to 90.7 mil b/d in 2013

- Signs of improvement in China and the US counterbalanced by weak macroeconomic conditions in Europe
- Strongest growth in Asia; modest growth in the Americas, Africa, Middle East, FSU; continued decline in Europe

<table>
<thead>
<tr>
<th>Region</th>
<th>2011</th>
<th>2012</th>
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<tr>
<td>Africa</td>
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<td>3.4</td>
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<tr>
<td>Americas</td>
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<td>14.5</td>
<td>14.2</td>
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<tr>
<td>FSU</td>
<td>4.4</td>
<td>4.6</td>
<td>4.7</td>
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<tr>
<td>Middle East</td>
<td>7.4</td>
<td>7.6</td>
<td>7.8</td>
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<tr>
<td><strong>TOTAL</strong></td>
<td><strong>88.8</strong></td>
<td><strong>89.8</strong></td>
<td><strong>90.7</strong></td>
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Globally, 380CST FO prices much higher than Europe and USGC - hence Asian market is key.
China adding on average 600 kb/d (30 mil mt) refining capacity annually since 2009

India adding on average 200 kb/d (10 mil mt) refining capacity annually since 2009

IEA: Global refining surplus to rise to 4.4 mil b/d over 2013-2017. More than half of new capacity in non-OECD Asia

Japan shutting ~1.12 mil b/d capacity by March 2014 in response to 2010 regulation mandating upgrades

Australia shut 2 out of 8 refineries over 2003-2012, third to close in H2 2014 -- 35% of original 829,000 b/d capacity shut over past decade
Global crude demand: Why China matters

Chinese demand makes up 11% of the global 90.64 m b/d appetite

- US 21%
- US 21%
- China 11%
- Europe 5*
- Others 30%
- Iran 2%
- Mexico 2%
- Korea 3%
- Canada 3%
- Saudi Arabia 3%
- Brazil 3%
- Russia 4%
- India 4%
- Japan 5%

Source: IEA
China has been slightly shifting its crude oil buying patterns

China crude imports Jan-Mar 2013

- Saudi Arabia: 13,971,171 mt
- Angola: 9,705,699 mt
- Iraq: 6,231,675 mt
- Russia: 6,011,360 mt
- Oman: 5,563,428 mt
- Iran: 5,048,482 mt
- Venezuela: 3,516,708 mt
- Kazakhstan: 2,908,518 mt
- UAE: 2,389,060 mt
- Kuwait: 2,229,957 mt
- Other countries: 11,401,510 mt
- Total: 68,977,568 mt

China is now importing more Latin American grades: Vasconia, Castille Blend, Napo, Oriente, Maya, Mesa 30, Marlim, Escalante, Santa Barbara grades
Japan also importing more Latin American grades especially for direct burning.
Japan’s higher LNG, oil use for power expected to continue

10 major power utilities’ oil, LNG consumption 2011-12

- Oil Use (LHS)
- LNG Use (RHS)

100% nuclear plants shut

Fukushima quake

95% of nuclear capacity, 19% of total power capacity, remains shut

2013?

Source: Japan FEPC data
Roughly equal share of fuel oil, direct-burn crude for power generation
India buying more heavy Mexican crude

Secretaria de energia Mexico
India refining capacity stagnates by 2014

Source: IEA
US reducing crude imports from Latin America

Source: IEA
Canadian crude output growing at a fast clip too...

- Resurging growth in conventional oil production
- New investments in oil sands
- But declining output in Eastern Canada
Canadian, Colombian exports to US gain in recent years; Mexico and Venezuela down

Between 2008-2012:

- Imports from Canada UP 18% to ~2.9 mil b/d
- Imports from Colombia UP 118% to ~440 kb/d
- Imports from Mexico DOWN 21% to ~1 mil b/d
- Imports from Venezuela DOWN 22% to ~930 kb/d

Source: EIA
Slight increase seen in US refinery crude demand, exports to Canada

- Planned new US refining capacity coming up between 2013-2018 ~ 824,000 b/d
- Planned expansions/upgrades coming up between 2013-2018 ~ 140,265 b/d

Source: IEA, NEB, Bentek
Despite Europe and other US refinery shutdowns, Gulf Coast refineries appear unscathed.
US refinery yields of residual fuel oil falling
US exports of fuel oil rising

U.S. Exports of Residual Fuel Oil (Thousand Barrels)
Singapore accounts for half of US FO exports.

U.S. Exports to Singapore of Residual Fuel Oil (Thousand Barrels)

- January 1993 to January 2013
- Data trends showing fluctuations in exports over time.

Graph indicates a significant increase in exports from 2008 onwards.
Tightening sulfur limits – supply concerns
Questions/comments?

Sharmilpal.kaur@platts.com