Review of Current and Potential Asian Oil Benchmarks

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Dramatic changes on global oil trading

World oil industries shifting to east

China’s oil market and potential crude benchmark
Dramatic changes on global oil trade

- Trade in the Atlantic Basin declines
- Global oil trade shifts towards east
- China is becoming the world largest crude importer
Crude trade declines in the Atlantic Basin

Source: BP, PIRA, Unipec Research, * Europe excludes FSU

Crude Oil Imports into the US and Europe

Source: BP, PIRA, Unipec Research, * Europe excludes FSU
US crude imports led down by shale revolution

Source: EIA, Unipec Research
WTI is challenged as global oil benchmark

Spreads of WTI/BRENT and WTI/LLS

Source: Reuters, Unipec Research
Increasing speculations in NYMEX WTI contract

Source: CFTC, Unipec Research
Crude production declines in the North Sea

Crude Production of Major Grades in the North Sea

Source: Reuters, Unipec Research
Crude runs and imports of OECD Europe slide

**Crude Runs and Imports of OECD Europe**

- **Crude Runs**
- **Crude Imports**

Source: BP, PIRA, Unipec Research
Indonesia became a net oil importer

Crude Oil Production and Net Export of Indonesia

Source: OPEC, Argus
Limited liquidity of Dubai benchmarks

Production of Dubai Crude Benchmarks

Source: FGE, Unipec Research
Global crude pricing mechanism needs to be improved

- Crude production declines in the North Sea
- Crude runs and imports of OECD Europe slide
- WTI is challenged as global crude benchmark
- Increasing speculations in NYMEX WTI contract
- Limited liquidity of Dubai benchmarks
- Indonesia became a net oil importer
- China is becoming the world largest oil importer
- China is building an market-oriented oil market

Source: Unipec Research
Dramatic changes on global oil trading

*World oil industries shifting to east*

China’s oil market and potential crude benchmark
Asia-Pacific is the world biggest oil consumer

Source: IEA, Unipec Research
Asia-Pacific owns the world largest refining capacities

Source: PIRA, Unipec Research
Crude deficit widens in Asia-Pacific

Refining Capacity and Oil Production in Asia-Pacific

Source: PIRA, Unipec Research
Asia-Pacific became the target market of crude suppliers.

Crude Trade Volumes and Share of Asia-Pacific

Source: BP, PIRA, Unipec Research
Middle East crude trades shifting to east

Middle East Crude Exports by Destination

Source: PIRA, Unipec Research
African crude trades shifting to east

Africa Crude Exports by Destination

Source: PIRA, Unipec Research
FSU crude trades shifting to east

Source: PIRA, Unipec Research
Latin American crude trades shifting to east

Latin America Crude Exports by Destination

Source: PIRA, Unipec Research
Content

Dramatic changes on global oil trading

World oil industries shifting to east

China’s oil market and potential crude benchmark
China’s oil demand keeps rising at lower growth rate

Source: National Bureau of Statistics of China, Unipec Research
China’s crude shortage continues to widen

China accounts for larger share in global crude trade

![Crude Oil Imports and its Share in the world](image)

Source: BP, Unipec Research
China is becoming the world largest crude importer by 2016

Source: China Customs, EIA. * forecasts by Unipec Research
China’s oil market reform speeds up

2013
Reform launched:
- ChemChina obtained 10 million tons/year crude import quota.
- Oil products pricing mechanism adjusted.

2015
Reform speeds up:
- Upstream sectors open to private investment.
- More independent refineries approved to import crude oil.
- A few independent refineries obtain oil products export quota.
- China’s refining market sees more competitions.

2016 onwards
Reform moves on:
- Further improving oil product pricing mechanism.
- Launching Shanghai crude futures contract.
- Preparing oil products futures contracts.
The potential INE crude benchmark will play a key role

The Potential Crude Benchmarks in Shanghai International Energy Exchange (INE)

<table>
<thead>
<tr>
<th>Region</th>
<th>Country</th>
<th>Crude</th>
<th>Minimum API</th>
<th>Maximum Sulfur Content (%)</th>
<th>Premium ($/bbl)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Middle East</td>
<td>UAE</td>
<td>Dubai</td>
<td>30.0</td>
<td>2.2</td>
<td></td>
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<tr>
<td></td>
<td>Oman</td>
<td>Oman</td>
<td>30.0</td>
<td>1.3</td>
<td></td>
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<tr>
<td></td>
<td>UAR</td>
<td>Upper Zakum</td>
<td>33.0</td>
<td>2.0</td>
<td></td>
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<tr>
<td></td>
<td>Yemen</td>
<td>Masila</td>
<td>31.0</td>
<td>0.8</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Qatar</td>
<td>Qatar Marine</td>
<td>31.0</td>
<td>2.2</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Iraq</td>
<td>Basrah Light</td>
<td>29.5</td>
<td>3.0</td>
<td></td>
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<tr>
<td>China</td>
<td>China</td>
<td>Shengli</td>
<td>24.0</td>
<td>1.0</td>
<td></td>
</tr>
</tbody>
</table>

Note: quality baseline is API gravity of 32 and sulfur content of 1.5%. Crude for delivery and premium level shall be decided and adjusted by INE according to market condition.
Summaries

• Driven by the US shale revolution and restructure in world refining industries, global oil trade is shifting towards east.

• Asia-Pacific has become the world biggest oil consumer and refinery center, and also the largest target market of crude oil.

• The dramatic changes in global oil trade, together with increasing speculations and limited liquidities of major crude benchmarks, require improvement in global crude pricing mechanism.

• China is becoming the largest crude importer, and its share in global crude trade is rising.

• Aiming to build a more efficient and open oil market, China’s oil market reform has speeded up. The potential INE crude benchmark will play a key role in global oil trade.
Thank You!