Outlook on Energy Price Benchmark Market and Overview of SC Crude Oil Futures

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Steady Volume and Share Increase of Asia Pacific Oil Consumption

Regional Oil Consumption in 1990
- APAC: 21.1%
- N.A.: 29.2%
- Europe: 35.7%
- C&S.A: 5.4%
- M.E.: 5.5%
- Africa: 3.0%

Regional Oil Consumption in 2000
- APAC: 27.9%
- N.A.: 29.7%
- Europe: 25.9%
- C&S.A: 6.4%
- M.E.: 6.8%
- Africa: 3.3%

Regional Oil Consumption in 2017
- APAC: 35.20%
- N.A.: 24.70%
- M.E.: 9.50%
- Africa: 4.10%
- C&S.A: 24.70%
- CIS: 4.40%
- Europe: 15.30%

N.A.: North America
C&S.A: Central and South America
M.E.: Middle East
APAC: Asia Pacific
CIS: Commonwealth of Independent State

Data: BP
China: 2nd Largest Oil Consumer, Highly Depend on Import

2017 Oil Consumption by Country (kb/d)

Crude Oil Consumption Dependency on Overseas Import

Data: BP

Data: EIA, National Bureau of Statistics, Customs
Regional Crude Oil Benchmarks

WTI Futures
- CME
- WTI

Brent Futures
- ICE
- Brent
- DME
- Oman
- MOE
- MCX

Dubai / Oman OTC Assessment
- SHFE
- INE
- TOCOM
SC: Middle Eastern Crude CRF Price to North-East Asia

Lot size: 1000 bbls
Contracts listed: up to 36 months

<table>
<thead>
<tr>
<th>Currency</th>
<th>RMB denomination, accept USD as margin</th>
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</thead>
<tbody>
<tr>
<td>Trade Price</td>
<td>Net Pricing— No Tariff or VAT</td>
</tr>
<tr>
<td>Delivery Mode</td>
<td>Bonded Physical Delivery</td>
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<td>Participant Types</td>
<td>Onshore and Offshore Participants</td>
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<tr>
<td>Underlying</td>
<td>Medium Sour Crude</td>
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<table>
<thead>
<tr>
<th>Nation</th>
<th>Deliverable Crudes</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Arab Emirates</td>
<td>Dubai</td>
</tr>
<tr>
<td>United Arab Emirates</td>
<td>Upper Zakum</td>
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<tr>
<td>Sultanate of Oman</td>
<td>Oman</td>
</tr>
<tr>
<td>State of Qatar</td>
<td>Qatar Marine</td>
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<tr>
<td>Republic of Yemen</td>
<td>Masila</td>
</tr>
<tr>
<td>Republic of Iraq</td>
<td>Basrah Light</td>
</tr>
<tr>
<td>People’s Republic of China</td>
<td>Shengli</td>
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</tbody>
</table>
Price of Producing Region and Consuming Region

- Producing Region Price
  - FOB Middle East Oil

- Freight, Insurance

- Other Cost

- Consuming Region Price
  - SC Price

Regional Supply and Demand
Market Size Increases Steadily

- From launch day to 15-Feb-2019, accumulated trading volume of the China crude contract was 33 million lots, with daily average volume of 150k lots.
- On 7-Dec-2018, the single-day trading volume reached historical high at 360k lots.
- It took NYMEX WTI 3 years and IPE Brent 5 years to reach an average daily trading volume of 50k lots equivalent.
- At close of 15-Feb-2018, total market open interest was 37k lots, with daily average open interest at 21k lots.
- Note: above numbers are counting single-sided
Offshore Participation

Account Number

Trading Volume

Open Interest

Onshore  Offshore

Note: as of Feb 15, 2019

48 Overseas Intermediaries

J.P.Morgan  UOB  Goldman Sachs  Phillip Futures  Straits Financial

MAREX SPECTRON  ADM  DBS
Delivery Went Smoothly

- **Mar 26th**: SC started trading
- **Jun 20th**: First shipment of crude oil arrived at Dalian
- **Jun 26th**: First Crude Oil Warrant Issued for 500kb
- **Aug 31st**: Last trading day of SC1809, which was the first SC contract
- **Sep 7th**: Delivery cycle completed with 601kb of crude oil delivered

By Feb 2019, 6 contracts have completed their delivery cycles (SC1809, SC1810, SC1811, SC1812, SC1901, SC1902), with a total amount of 5.4 million barrels delivered.

- In April 2018, Shell and Unipec entered into a one-year crude oil trading contract using INE SC prices as benchmark.
  - Contract tenor: Sep 2018 – Aug 2019
- In Oct 2018, Unipec and one Chinese independent refinery signed a contract trading 350kb of middle eastern heavy and sour crude based on INE SC1812 prices.
## Chinese Futures Market and Futures Exchanges

### 2018 Top 10 Global Commodity Exchanges

<table>
<thead>
<tr>
<th>Ranking</th>
<th>Exchange Name</th>
<th>Volume (100mn lots)</th>
<th>YoY Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Shanghai Futures Exchange (SHFE)</td>
<td>12.02</td>
<td>-11.90%</td>
</tr>
<tr>
<td>2</td>
<td>Chicago Mercantile Exchange Group (CME Group)</td>
<td>11.82</td>
<td>4.43%</td>
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<tr>
<td>3</td>
<td>Dalian Commodity Exchange (DCE)</td>
<td>9.82</td>
<td>-10.84%</td>
</tr>
<tr>
<td>4</td>
<td>Zhengzhou Commodity Exchange (ZCE)</td>
<td>8.18</td>
<td>39.57%</td>
</tr>
<tr>
<td>5</td>
<td>Intercontinental Exchange (ICE)</td>
<td>7.97</td>
<td>1.54%</td>
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<tr>
<td>6</td>
<td>Moscow Exchange (MOEX)</td>
<td>4.78</td>
<td>-2.64%</td>
</tr>
<tr>
<td>7</td>
<td>Multi Commodity Exchange of India (MCX)</td>
<td>2.30</td>
<td>15.97%</td>
</tr>
<tr>
<td>8</td>
<td>Hong Kong Stock Exchange (HKEX)</td>
<td>1.85</td>
<td>17.53%</td>
</tr>
<tr>
<td>9</td>
<td>National Association of Securities Deal Automated Quotations Group (NASDAQ Group)</td>
<td>0.24</td>
<td>-54.43%</td>
</tr>
<tr>
<td>10</td>
<td>Tokyo Commodity Exchange (TOCOM)</td>
<td>0.24</td>
<td>-2.32%</td>
</tr>
</tbody>
</table>

Source: FIA

### Global Exchange Traded Commodities Market Share (2001-2018)

![Graph showing market share and trading volumes over time for various regions and markets.](source: FIA)
Outlook on Pricing Benchmark Market

- Increasing uncertainties in oil supply, demand and macro economy
- Increasing fluctuation in energy prices
- Greater importance of benchmark market for price discovery and hedging purposes
- Opening up of Chinese futures market provides international solution