**Appendix 3**

**Low Sulfur Fuel Oil Futures Contract of the Shanghai International Energy Exchange (Revised and Restated)**

(Released and implemented on June 10, 2020; revised on September 16,2021 for the first time, implemented on March 1, 2022; revised on May , 2025 for the second time, implemented on , 2025)

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| --- | --- |
| Product | Low Sulfur Fuel Oil |
| Contract Size | 10 metric tons/lot |
| Price Quotation | (RMB) Yuan/metric ton (no tax or duty included in the quotation) |
| Minimum Price Fluctuation | 1 Yuan/metric ton |
| Daily Price Limits | ±5% from the settlement price of the previous trading day |
| Delivery Months | January, February, March, April, May, June, July, August, September, October, November, and December |
| Trading Hours | 9:00-11:30 a.m., 1:30-3:00 p.m. (Beijing Time), and other trading hours as prescribed by the Exchange |
| Last Trading Day | The last trading day of the month prior to the delivery month (postponed accordingly if it is a national holiday or weekend; the Shanghai International Energy Exchange is entitled to adjust the last trading day in accordance with the national holidays or weekends.) |
| Delivery Period | Five (5) consecutive trading days after the last trading day |
| Grades and Quality Specifications | Low sulfur marine fuel oil, refer to Appendix for detailed quality standards |
| Delivery Venues | Delivery Storage Facilities designated by the Shanghai International Energy Exchange |
| Minimum Trading Margin | 8% of contract value |
| Settlement Type | Physical delivery |
| Product Symbol | LU |
| Listing Exchange | Shanghai International Energy Exchange |

**Appendix to Low Sulfur Fuel Oil Futures Contract of the Shanghai International Energy Exchange**

**I. Delivery Unit**

The delivery unit of low sulfur fuel oil futures contract is 10 metric tons. The delivery quantity shall be integral multiple(s) of the delivery unit.

**II. Quality Standards**

Low sulfur marine fuel oil to be delivered shall meet the quality standards for low sulfur marine fuel oil set by the Shanghai International Energy Exchange (the “Exchange”). “Low sulfur marine fuel oil” refers to homogeneous hydrocarbon mixtures extracted from petroleum, with certain amount of additives permitted for performance and characteristics gains. Low sulfur marine fuel oil shall not contain any inorganic acid and used lubricating oil, nor any substance that may cause abnormal operations of ships, nor any artificially added additive or chemical waste that may endanger ship safety, adversely affect machine’s performance, or be harmful or increase air pollutions.

Specific rates of premium and discount will be separately prescribed and announced by the Exchange.

**Quality Standards of Low Sulfur Fuel Oil of the Shanghai International Energy Exchange**

|  |  |  |
| --- | --- | --- |
| **Properties** | **Limit** | **Test Method** |
| Kinematic viscosity (50 °C, mm2/s) | 380.0 max  100.00 min | ASTM D445 |
| Density (15 °C, kg/m3) | 991.0 max  925.0 min | ASTM D1298 |
| Calculated Carbon Aromaticity Index (CCAI) | 870 max | ISO 8217:2017(E) |
| Sulfur content (m/m, %) | 0.50 max | ASTM D4294 |
| Flash point (closed cup) (°C) | 60.0 min | ASTM D93 |
| Hydrogen sulfide (mg/kg) | 2.00 max | IP 570 |
| Acid value (mg KOH/g) | 2.5 max | ASTM D664 |
| Total sediment (thermal aging test) (m/m, %) | 0.10 max | ASTM D4870 |
| Carbon residue (m/m, %) | 18.00 max | ASTM D4530 |
| Pour point (°C) | 30 max | ASTM D97 |
| Moisture (V/V, %) | 0.50 max | ASTM D95 |
| Ash content (m/m, %) | 0.100 max | ASTM D482 |
| Vanadium (mg/kg) | 350 max | IP 501 |
| Sodium (mg/kg) | 100 max | IP 501 |
| Aluminum + Silicon (mg/kg) | 60 max | IP 501 |
| Net calorific value (cal/g) | 9,500 min | ASTM D240 |
| Used lubricating oil (ULO) (mg/kg)  Calcium and Zinc  Calcium and phosphorus | Fuel oil should be free of ULO, which is deemed to be present if any of the following conditions is met:  Ca > 30 and Zn > 15 or Ca > 30 and P > 15 | IP 501 |
| Compatibility (level) | No higher than spot No. 2 | ASTM D4740 |
| Cleanness (level) | No higher than spot No. 2 | ASTM D4740 |
| Styrene (mg/kg) | 300 max | GB/T 6041 |
| Phenol (mg/kg) | 300 max | GB/T 6041 |

**III. Designated Delivery Storage Facilities**

Designated Delivery Storage Facilities will be separately announced by the Exchange.