Appendix 1

**Fuel Oil Futures Contract of the Shanghai Futures Exchange** (Amended)

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| Product | Fuel Oil |
| Contract Size | 50 metric tons/lot 10 metric tons/lot |
| Price Quotation | RMB yuan/metric ton (exclusive of tax) |
| Minimum Price Fluctuation | 1 yuan/metric ton |
| Daily Price Limit | Within 5% of the settlement price as of the preceding trading day |
| Listed Contracts | Monthly contract of the most recent 12 months from January to December (excluding the Spring Festival) |
| Trading Hours | 9:00 a.m. to 11:30 a.m., 1:30 p.m. to 3:00 p.m., and other time periods specified by the Exchange (Beijing Time). |
| Last Trading Day | The last trading day of the month prior to the contract delivery month. The last trading day may be adjusted by the Exchange in view of legal holidays in China. |
| Delivery Period | Five consecutive business days after the last trading day |
| Grade and Quality Specifications | Marine fuel oil, 180 CST RMG 380 (sulfur content level I or II) or higher grades (refer to Annex for detailed quality requirements). |
| Delivery Venue | Delivery Storage Facilities designated by the Shanghai Futures Exchange |
| Minimum Trade Margin | 8% of contract value |
| Settlement Type | Physical delivery |
| Minimum Warranted Delivery Size | 10 metric tons |
| Contract Symbol | FU |
| Listing Exchange | SHFE |

**Annex for Fuel Oil Futures Contract of the Shanghai Futures Exchange**

1. Minimum Warranted Delivery Size

The standard delivery unit for fuel oil futures is 50 10 metric tons; delivery shall be made in multiples of the delivery unit.

1. Quality Standards

Marine fuel oil of 180 CST RMG 380 (sulfur content level I or II) or higher grade refers to homogeneous hydrocarbon mixtures extracted from petroleum, with certain amount of additives permitted for performance and characteristic gains. Fuel oils is permitted that do should not contain any inorganic acid or waste used lubricating oil, nor any substance that may cause abnormal operations of ships, nor any artificially added additive or chemical waste that may endangers ship safety, adversely affects machine’s performance, nor be is harmful to humans or increase air pollutions polluting the air. A trace amount of additives for performance gains is permitted.

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

SHFE Quality Standards for Fuel Oil

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| **Parameter** | **Limit** | **Test Method** |
| Density (15 °C, kg/l) | 0.991 max | ASTM D1298 |
| Kinematic viscosity (50 °C, mm2/s) | 180 max | ASTM D445 |
| Ash content (m/m, %) | 0.10 max | ASTM D482 |
| Carbon residue (m/m, %) | 15 max | ASTM D189/D4530 |
| Pour point (°C) | 30 max | ASTM D97 |
| Moisture (V/V, %) | 0.5 max | ASTM D95 |
| Flash point (°C) | 60 min | ASTM D93 |
| Sulfur contents (m/m, %) | 3.5 max | ASTM D4294 |
| Total sediment (m/m, %) | 0.10 max | ASTM D4870 (accelerated aging) |
| Vanadium (mg/kg) | 150 max | IP 501 |
| Net calorific value (cal/g) | 9,400 min | ASTM D240 |
| Aluminum + Silicon (mg/kg) | 80 max | IP 501 |
| Sodium (mg/kg) | 50 max | IP 501 |
| Waste lubricating oil  Calcium + Zinc (mg/kg)  or  Calcium + phosphorus (mg/kg) | 30 + 15 max  or  30 + 15 max | IP 501 |
| Total acid value (mg KOH/g) | 2.5 max | ASTM D664 |

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| **Parameter** | **RMG 380 Specifications** | **Test Method** |
| Kinematic viscosity (50 °C, mm2/s) | 380.0 max | ASTM D445 |
| Density (15 °C, kg/m3) | 991.0 max | ASTM D1298 |
| Calculated Carbon Aromaticity Index (CCAI) | 870 max | ISO 8217:2017(E) |
| Sulfur content (m/m, %)  I  II | 3.50 max  0.50 max | ASTM D4294 |
| Flash point (closed cup tester) (°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 D189/ 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 level 2 | ASTM D4740 |

III. Designated Delivery Oil Depots

Designated delivery oil depots will be designated and separately announced by SHFE.