



NYMEX WTI Futures: Overview of Quality Issues

Daniel Brusstar

Director, Energy Research & Product Development, CME Group

Crude Oil Quality Association Meeting
October 27, 2011

NYMEX Light Sweet “WTI” Futures

- **Background on NYMEX and WTI Futures Contract**
 - History
 - Liquidity
 - Quality Specifications
- **Update on Adopting Additional Tests**
 - Consultation with Industry

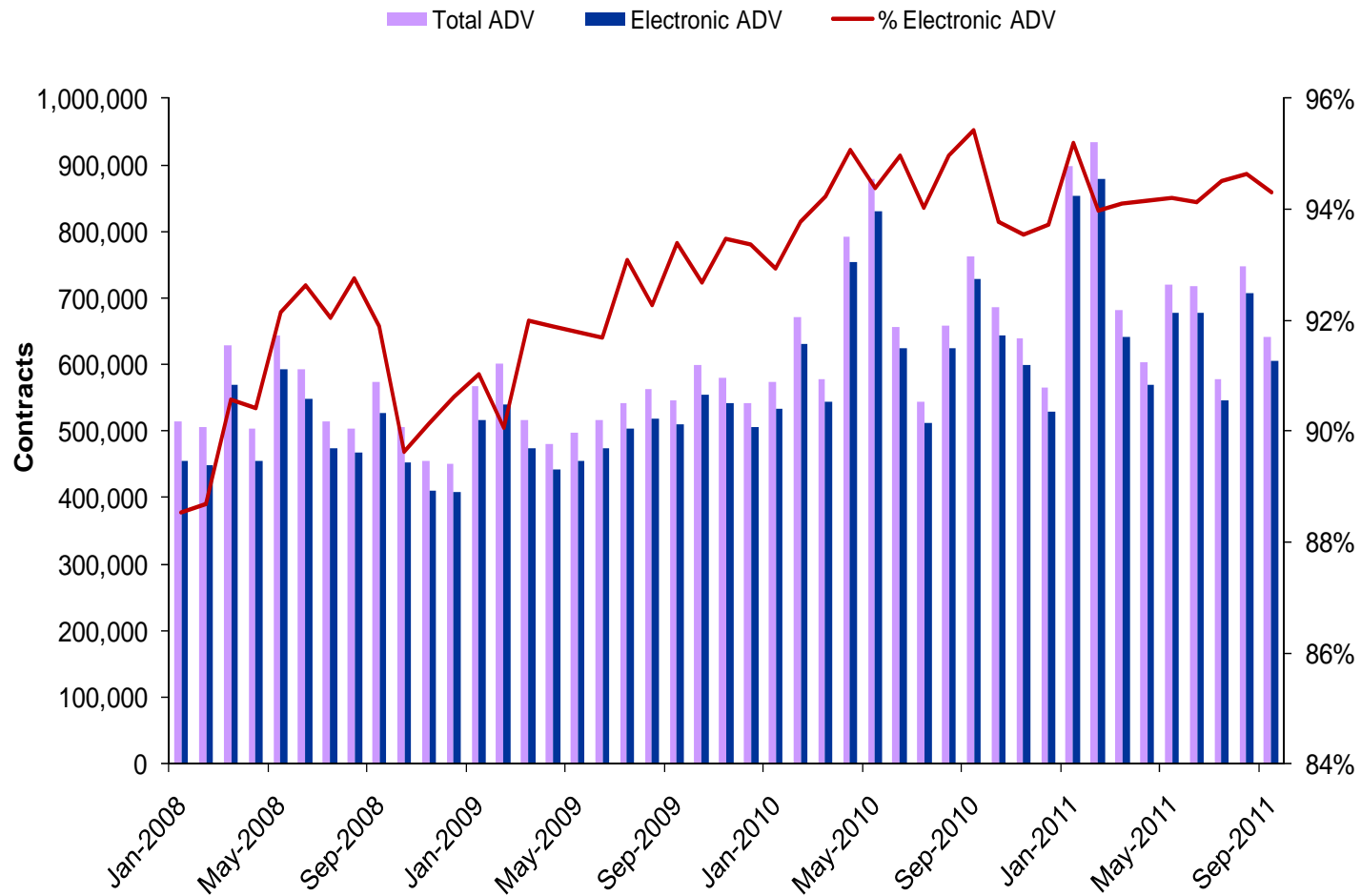
History of the Oil Futures Complex

<i>Heating oil futures</i>	1978
<i>Crude oil futures</i>	1983
<i>Unleaded gasoline futures</i>	1984
<i>Crude oil options</i>	1986
<i>Heating oil options</i>	1987
<i>Propane futures</i>	1987
<i>Unleaded gasoline options</i>	1989
<i>Natural gas futures</i>	1990

CME Cleared Oil Products

- **Crude Oil Swaps (Financially Settled)**
 - WTI
 - LLS
 - Mars
 - WTS
 - ASCI
- **Physically-Delivered Crude Oil Futures**
 - Mars

Light Sweet Crude Oil Futures - Electronic Average Daily Volume



NYMEX Tests for WTI Quality

- 1. Sulfur: 0.42% or less by weight (ASTM D-4294)**
- 2. Gravity: Not less than 37 degrees API, nor more than 42 degrees API (ASTM D-287)**
- 3. Viscosity: Maximum 60 Saybolt Universal Seconds at 100 degrees Fahrenheit (ASTM D-445 and ASTM D-2161)**
- 4. Reid vapor pressure: Less than 9.5 pounds per square inch at 100 degrees Fahrenheit (ASTM D-5191-96)**
- 5. Basic Sediment, water and other impurities: Less than 1% (ASTM D-96-88 or D-4007)**
- 6. Pour Point: Not to exceed 50 degrees Fahrenheit (ASTM D-97)**

Proposed Seven Additional Tests

1. **Micro Method Carbon Residue: 2.40% or less by mass (ASTM D4530-07)**
2. **Total Acid Number (TAN): 0.28 mg KOH/g or less (ASTM D664-09a)**
3. **Nickel: 8 parts per million (ppm) or less by mass (ASTM D5708-05 Test Method B)**
4. **Vanadium: 15 ppm or less by mass (ASTM D5708-05, Test Method B)**
5. **Light Ends <220°F by HTSD: Not more than 19 % by mass (ASTM D7169-05)**
6. **50 % Point by HTSD: 470°F- 570°F (ASTM D7169-05)**
7. **Vacuum Residuum >1020°F by HTSD: Not more than 16 % by mass; (ASTM D7169-05)**

Update on Quality Issues

- **Discussions Ongoing**
 - Positive Feedback
- **Details on Reporting**
- **Implementation with Adequate Notice**

Q&A

Daniel.Brusstar@cmegroup.com