

# Main features of contracts for the sale of crude oil and refined products, including LPG

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## 1. Understanding the crude oil market and refined product transacting

### 1.1 Introduction

Contracts for the sale of crude oil and refined products are ultimately creatures of industry; their terms should therefore not be considered in isolation from the products and markets to which they relate. Given the rich history of these transactions, extensive and comprehensive legal frameworks have developed specifically in relation to these categories of contract. Accordingly, in order to understand the challenges and features of contracts for the sale of crude oil and refined products, it is helpful to provide some background of the scale of the crude oil trade and where the major producers and consumers are based.

### 1.2 Crude oil products and refining

Crude oil, and its derivative products resulting from refining processes, account for the second largest fossil fuel (after coal) being extracted and produced. Petroleum products are used as fuel for everything, from generation plants producing electricity to bunkers and fuel for ships and motor vehicles, to the manufacture of petrochemicals and liquid petroleum gases (LPG), in addition to numerous other manufacturing processes.

Crude oil and condensate are found in raw natural form, and other petroleum products are derived from refining. The first product out of the refining column is gas, then naphtha and progressively heavier component parts of the crude being refined.

Crude oil, fuel oils and some heavy marine diesel oils are referred to as 'dirty petroleum products' (DPP)<sup>1</sup> and most products, from marine diesel to water white jet aviation fuel, are usually referred to as 'clean petroleum products' (CPP).<sup>2</sup>

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1 Liquid products refined from crude oil, whose colour is darker than 2.5 on the National Petroleum Association scale. DPPs will often require heating during the voyage, as their viscosity or waxiness would make discharge difficult at ambient temperature. DPPs include fuel oil, low Sulphur waxy residue (LSWR) and carbon black feedstock (CBFS).

2 Liquid products refined from crude oil, the colour of which is less than or equal to 2.5 on the National Petroleum Association scale. CPPs include naphtha, jet fuel, gasoline (petrol), and diesel/gasoil.

### 1.3 Global oil trade<sup>3</sup>

Global oil trade in 2014 grew by a below average 0.9%, or 490,000 b/d.<sup>4</sup> Import growth was driven by China and emerging economies, while US imports declined due to its increased use of domestic crude in its refineries. Oil exports continued to swing from west to east. China is now the world's largest net oil importer, replacing the United States. China's net imports were just under 7 mb/d,<sup>5</sup> versus 5.1 mb/d in the US.

### 1.4 Oil reserves

Total world proven oil reserves reached 1700.1 billion barrels at the end of 2014, sufficient to meet 52.5 years of global production. The largest addition to reserves came from Saudi Arabia, which added 1.1 billion barrels. The largest decline came from Russia, where reserves fell by 1.9 billion barrels. OPEC countries continued to hold the majority of the world's reserves, accounting for 71.6% of the global total. Central & South America continue to hold the highest reserves to production (R/P) ratio: more than 100 years. Over the past decade, global proved reserves have increased by 24%, or more than 330 billion barrels.

#### Total Proved Reserves end 2014

Region	Thousand million tonnes	Thousand million barrels	Share of total
North America	35.3	232.5	13.7%
Central & South America	51.2	330.2	19.4%
Europe & Eurasia	20.9	154.8	9.8%
Middle East	109.7	810.7	47.7%
Africa	17.1	129.2	7.6%
Asia Pacific	5.7	42.7	14.1
World total	239.8	1700.1	100%

<sup>3</sup> BP Statistical Review of World Energy, June 2015. The statistics in this section come from this source.

<sup>4</sup> B/d = barrels per day.

<sup>5</sup> Mb/d = million barrels per day.

### Total Consumption end 2014

Region	Thousand barrels daily	Share of total
North America <sup>6</sup>	23,347	24.3%
Central & South America	7,125	7.8%
Europe & Eurasia <sup>7</sup>	18,252	20.4
Middle East	8,706	9.3%
Africa	3,800	4.3%
Asia Pacific	30,856	33.9%
World total	92,086	100%

World consumption outpaced global production in 2014, with the former rate increasing by 2.1 mb/d, of which 1.6 mb/d was US increased output. Global consumption increased by 840,000 b/d, with emerging economies accounting for all of the growth. Even though China saw a below-average increase, it still accounted for the majority of the growth in consumption.

**Refining:** Generally, crude oil is heated and the hot gases which result are passed into the bottom of a distillation column and become cooler as they move up the column. As the gases cool below their boiling point, they condense into liquid. The liquids are then drawn off the distilling column at specific heights, ranging from heavy residues at the bottom, raw diesel fuels in the mid-sections and raw gasoline at the top. These raw fractions are then processed further to make several different finished products.

Although all fractions of petroleum find uses, the greatest demand is for gasoline. One barrel of crude oil contains only 30–40% gasoline. Market demand, however, requires that over 50% of the crude oil barrel be ‘converted’ into gasoline. To meet this demand, some part of the crude oil must be converted to gasoline. This may be done by ‘cracking’ (ie, breaking down large molecules of heavy heating oil and residues) or ‘reforming’ (ie, changing molecular structures of low quality gasoline molecules).<sup>8</sup>

Refining is broken down into four main groups:

- Light Distillates;
- Middle Distillates;

6 Of which the US accounted for 19,035 and 19.9% respectively.

7 Of which the Russian Federation accounted for 3,196 and 3.5% respectively.

8 The next level of complexity adds ‘cat cracking and some additional hydrotreating. The most complex refineries add coking, more hydrotreating and hydrocracking.

- Fuel Oil; and
- Others.

The first and the second groups are the main categories of regional consumption by product group.

Product group	Products
Light Distillates	Aviation and motor gasolines, and light distillate feedstock.
Middle Distillates	Jet and heating kerosene, gas and diesel oil, including marine bunkers.
Fuel Oil	Marine bunkers and crude oil used directly as fuel.
Others	Refinery gas, LPG, solvents, petroleum coke, lubricants, bitumen, wax and other refined products.

China and North America consume 10 mb/d of Light Distillates, although North American and global rates of consumption (China excluded) have remained relatively constant since 2004. China's consumption has increased by approximately three mb/d in that period. World consumption was approximately 30 mb/d in 2014.

Middle Distillate consumption in 2014 was 34 mb/d in 2014, up from 29 mb/d in 2004. The main increase in consumption has been in the Middle East and China.

Fuel Oil consumption has decreased from 9.5 mb/d in 2004 to eight mb/d in 2014, again with China and the Middle East being the largest consumers.

The consumption of other products has increased from 18 mb/d in 2004 to 20 mb/d in 2014, with consumption remaining constant worldwide, except for an increase from five mb/d to seven mb/d in China. The rest of the world's consumption has remained constant, with the US as the other large consumer, accounting for about five mb/d throughout this period.

The largest importers of crude oil are Europe, the US, China, India, Japan, and other Asia Pacific nations (in that order). It should, however, be noted that Singapore alone imports 45.6 million tonnes per annum (for refining). Global imports of crude oil amounted to 1876 million tonnes in 2014.

The largest importers of refined products are Europe, the US, Central and South America, other Asia Pacific countries, Singapore, China and Japan. Singapore alone imports 102 million tonnes per annum, but obviously this is not all for domestic use and reflects the fact that Singapore is a centre for the supply of bunkers, as well as providing oil storage and tanking facilities. Global imports of refined products amounted to 911.5 million tonnes in 2014, of which the US, Europe, the former Soviet Union (FSU) and the Middle East were the largest exporters.

Crude oil exports in 2014 amounted to 1876 million tonnes of which the Middle East was the largest, exporting 850 million tonnes, followed by the FSU (294 million

tonnes), West Africa (213 million tonnes) and Central and South America (164 million tonnes).

**Pricing:** Crude oil is priced in US dollars per barrel. It remained well below \$10 p/b<sup>9</sup> until the 1973 oil crisis, after which it reached a level of nearly \$40 in 1980, then falling back to below \$20, mainly until 1999, and hovered at \$60 p/b at the end of 2014, having reached a height of \$120 in early 2011.

Traders normally price their contracts on the basis of premiums or discounts to price indices. For crude oil, these are Brent and WTI (West Texas Intermediate). One of the most well known indices is an index quoted in a publication produced by McGraw-Hill and referred to as 'Platts'. Platts quotes, for example, the Singapore Platts low sulphur fuel oil index ('LSFO') as well as the high sulphur Platts Singapore index ('HSFO'). The HSFO quotation has always been at a discount to the LSFO quotation because of the general availability of high sulphur fuels and the relative higher cost of producing low sulphur fuel oil, either because of the additional processing or because it emanates from a low sulphur (or sweet crude), which is always more expensive than high sulphur crude.

The prices published in their various quotations by Platts are derived from trades reported to the respective officers in charge of their product reporting. Platts quotations in some markets, such as Singapore, are based on market activity in a 'window': this is a 30-minute electronic window during which all bids and offers are recorded. However, Platts LSFO Singapore window has, for example, historically been used very little. This has made it very difficult to report its real value accurately. On the other hand, HSFO Singapore is extremely well traded and the quotation is a truer reflection of the HSFO value in the market. As a consequence of the lack of actual trades in the window, Platts must take into account any offers or bids made in the window. Of course, this opens Platts up to being manipulated either up or down by the participants to suit their own interests. Platts accept that the LSFO is so thinly traded that the price is open to inaccuracies.

A full discussion on the transparency of such indices and their sensitivity to manipulation is not the subject of this chapter, though it has been the subject of discussion in trade articles.<sup>10</sup> The underlying criticism appears to be that the

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9 P/b = per barrel.

10 On October 9 2012, Bloomberg issued the following report: "Bloomberg – Total SA, France's largest oil company, said it is concerned that inconsistency and a reliance on judgment calls hinders [sic] the accuracy of price reporting agencies in reflecting the state of the oil market. We encounter, several times a year, estimates of market prices on key indices that are out of line with our experience of the day and with the available information on which the price formation is based," Totsa, the Geneva-based trading arm of Total, said in an August 24 letter to the International Organization of Securities Commissions, which was published on IOSCO's website on October 5. The company also said that excluding market participants from the assessment process, or 'boxing,' by price reporting agencies such as Platts, a unit of McGraw-Hill Cos, and by Argus Media Ltd can have "significant economic consequences both on the prices assessed in the market and on the company concerned." The agencies report on various spot and forward prices that are not traded on exchanges. IOSCO was appointed by the Group of 20 nations in November to investigate the role played by price reporting agencies in oil markets. The Madrid-based organization published its final report on October 5 that called for the agencies to adopt 'robust' controls to protect the reliability of the benchmarks. IOSCO stopped short of recommending new rules for traders or trading companies. Madrid-based IOSCO brings together national market regulators from more than 100 countries, including the US Commodity Futures Trading Commission and the UK's Financial Services Authority, to coordinate rules and share information."

information is based on subjective reporting about trades which may or may not be accurate.

## 2. **Overview of oil trading contracts**

For a trader, in any one trade there are usually a number of contracts in which he or she is interested:

- the contract for purchase and sale of product;
- a charterparty to carry the oil by sea;
- an insurance contract;
- an inspection contract with local surveyors, to survey in particular the quality and quantity of the oil; and
- a documentary credit for the payment of the price.

There are many different markets in oil trading and to consider each of them is beyond the scope of this chapter. Suffice to say that the following markets, among others, exist in crude oil and refined products:

- crude: the Shell 15-day, Dubai Fatah, Alaska North Slope, Russian Gasoil, Littlebrook Fuel Oil, WTI;
- refined products: Swedish Fuel Oil, Open Spec Naphtha and Boston No 2 Heating Oil.

Each of these markets has its own particular distinctions, customs, and terms, and there are many more local markets.

A classic feature of the oil market is a 'string', 'circle', 'loop' or 'daisy chain' of contracts, under which traders buy and sell the same cargo of oil many times. The sales are back to back, the only difference being the price. This leads to its own logistical problems, which is considered in the chapter on Bills of Lading<sup>11</sup> and in the section on e-trading and chartering, below. Another typical feature of the market is the use of standard forms.

Before considering specific requirements of a trader in a sale contract, it is instructive to focus on a number of legal fundamentals underlying every contract governed by English law.

### **(a) Evidence of the contract**

As a matter of English law, a contract does not need to be evidenced in writing, save for a relatively small number of cases, such as the sale of land. The obvious difficulty with an oral contract is that of proof: a party may, for its own purposes, deny all knowledge of the existence of the contract. For this reason, best practice is for all contracts to be evidenced in writing.

An example of this is a decision of the Commercial Court in 2002.<sup>12</sup> The defendants were the owners of the vessel *Epsilon Rosa*. They received a recap telex from charterers of the vessel that stated:

*owise as perchts standard c/p details amended as per main recap which recap terms to supercede any contradictory terms in the c/p with the full alterations (sic).*

The accompanying standard form provided for arbitration in London. In reply, the owners stated in a telex that the recap telex was “in order”. The charter of the vessel proceeded and a bill of lading was issued which contained a clause incorporating the terms of the charterparty, including the arbitration clause. A dispute subsequently arose and the owners sought to rely on the arbitration clause. The consignee of the bill (the claimant) sought a declaration from the Commercial Court that the recap telex and accompanying documents did not constitute a duly executed charterparty (and therefore that the arbitration clause was not incorporated into the bill of lading contract). The court held that a charterparty of a vessel could be contained in and evidenced by a recap telex.

**(b) Formation**

A contract comes into existence when there is agreement between the parties on all the ‘essential terms’ of the transaction. Generally, the essential terms of an oil trading contract will be:

- the description of the product;
- price;
- quantity; quality; and
- date of delivery.

Mere disagreement or uncertainty as to other general shipping trading terms, such as the laytime/demurrage clause, will not necessarily prevent the contract from being formed.

**(c) Consideration**

There must be ‘consideration’: ie, Party A offers to sell one barrel of oil to Party B, and Party B offers to buy that oil for US\$1. The consideration in this transaction is the oil and the US\$1. In the absence of consideration, there is generally no contract under English law (the exception being contracts executed by deed).

**(d) Subjects**

If an agreement has been reached between the parties, but ‘subjects’ remain to be lifted (eg, subject to buyer’s board approval), generally no contract exists unless and until those subjects have been lifted.<sup>13</sup>

*This is an extract from the chapter ‘Main features of contracts for the sale of crude oil and refined products, including LPG’ by Paul Aston in Oil and Gas Trading: A Practical Guide, published by Globe Law and Business.*

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12 *Welex AG v Rosa Maritime Ltd* [2002] 1 All ER (Comm) 939.  
13 *The ‘Junior K’* [1988] 2 Lloyd’s Rep 583.