

## **A**

### **APC**

(Advanced Process Control) is a computerized manufacturing process control system in place in the Gdańsk refinery since 2001. APC simultaneously controls a large number of technological process parameters at the industrial plant. With the help of this system, one can optimize the plant operations, increasing the yield of the desired products and keep the plant working safely.

### **ARA**

The market with its territory delineated by the ports of Antwerp – Rotterdam – Amsterdam.

### **Atmospheric distillation**

A physicochemical process used to separate component products of a mixture, using differences in the boiling point temperatures of individual components. In the process of atmospheric distillation, individual fractions of gases, benzene, paraffin and diesel oils become separated. Heavier hydrocarbons constitute so-called atmospheric remnants. Atmospheric distillation is a process carried out at a pressure close to atmospheric pressure.

### **Audit recertifying the Integrated Management System (renewal)**

An audit aimed at assessing the compliance of the management system with the requirements of the standards. A recertifying audit is carried out in the period determined by the certifying entity to extend the validity or issue a new IMS certificate.

## **B**

### **Barrel (of crude oil)**

A primary unit of measure used in crude oil production. One barrel encompasses 159 litres.

### **Base oil**

Unrefined oil, without improvers, obtained in the processing of crude oil. It represents the base raw material in the manufacture of lubricant oils.

### **Biofuel**

Fuel manufactured by adding more than 5% biocomponents to gasoline or diesel oil.

### **Biocomponent**

An additive used in fuel production made in biomass processing of e.g. oil plants or corn.

### **B100** (fuels)

A determination of fuels produced solely from a biocomponent.

### **B3 Oil Field**

A marine natural gas and oil field located about 73 km north of Rozewie. In operation since 1992, it hosts the Marine Oil Mine (*Morska Kopalnia Ropy*). It is the main source of crude oil produced by LOTOS Petrobaltic.

### **B8 Oil Field**

A marine natural gas and oil field located about 68 km northeast of Rozewie.

### **C**

### **CD Process** (Continuous Deglycerolization Process)

A manufacturing process of fatty acid methyl esters used at the installation located in Czechowice-Dziedzice.

### **CDU/VDU (installation)**

A basic installation system used for crude oil processing comprising a Crude Distillation Unit (CDU) and Vacuum Distillation Unit (VDU).

### **CODO stations (company-owned, dealer-operated)**

See: own (petrol) stations.

### **Component for bitumen production**

Usually a heavy vacuum distillate fraction obtained from crude oil, which can be further processed at the installation for bitumen manufacture.

### **Confirmed resources**

The volume of oil production that may be estimated based on geological analyses and engineering data with reasonable certainty as commercially available for production since a specific date, from the known deposit horizons and in specific economic conditions, using the defined operational methods and based on determined administrative regulations.

### **Conversion**

Conversion processes usually involve technological cracking processes. In such processes, components with high boiling temperatures

(heavy distillates) are used to manufacture light products used for fuel production. The most common conversion processes are thermal cracking, catalytic cracking and hydrocracking.

## **Crack**

A refining margin.

## **D**

### **DAO (De-Asphalted Oil)**

Oil produced with an SDA installation used as a raw material for further refining. It may be the basis for producing base oils or an input for a cracking process.

### **DODO stations (dealer-owned, dealer-operated)**

See: patronage (petrol) stations.

### **DOFO stations (dealer-owned, franchise-operated)**

See: partner (petrol) stations.

## E

### **ETBE** (Ethyl Tert-Butyl Ether)

The name of a high-octane biocomponent used in gasoline production. It is manufactured in petrochemical complexes with ethanol and isobutylene.

### **Ethanol**

Ethyl alcohol used e.g. as a biocomponent for producing fuels and biofuels used in cars with ignition engines.

## F

### **FAME** (Fatty Acid Methyl Ester)

Such esters are biocomponents used to manufacture fuels and biofuels for diesel engine vehicles. FAME is manufactured by the transesterification of oil with methanol in the presence of a catalyst.

### **Forties Blend**

A type of crude oil from the North Sea. Forties Blend is light petroleum with a low content of sulphur and a high potential in gasoline production.

### **Furfurol extraction**

A technology applied to increase the quality of base mineral oils. During the process unfavourable aromatic hydrocarbons are separated, which increases the so-called viscosity index.

## **G**

### **Gasoline isomerisation**

A refining process that creates a higher octane number of the gasoline fraction by changing the chemical structure of particles.

### **Gasoline natural gas**

Natural gas that contains, apart from methane and ethane, a certain quantity of heavier hydrocarbons.

### **Gasoline reforming**

A refining process that involves a reaction with a catalyst creating high-octane aromatic hydrocarbons and hydrogen.

### **General nitrogen**

The content of nitrogen for nitrogen bound in all possible chemical forms.

## **H**

### **HDS (Hydrodesulphurisation Diesel Unit)**

A system for the hydrodesulphurization of diesel oils.

### **Heavy fuel oil (HFO)**

An oily liquid representing a residue from the distillation of crude oil. Heavy fuel oil finds its use in industrial installations of large manufacturing or processing facilities, as well as in combined power plants. It is also used as bunker fuel for ships.



## **HGU** (Hydrogen Generation Unit)

A system for hydrogen production.

## **Hydrocracking**

A refining process used to produce high quality fuel components during the reaction of vacuum distillates with hydrogen with a catalyst. Hydrocracking processes usually take place at a very high pressure and provide components that are free of sulphur and contaminations.

## **Hydrotreating (of slack wax)**

A process of purifying paraffin during the reaction with hydrogen in a catalyst.

## **I**

## **ISO**

International Organization for Standardization.

## **J**

## **Jet A1**

Aviation fuel for jet and turbine engines.

## **K**

### **KAS** (installation)

An amine-sulphur complex of installations for purifying refining gases of hydrogen sulphide and for the production of liquid sulphur.

## **L**

### **LCA** (Life Cycle Assessment)

The assessment of a product life aimed at determining the environmental impact (emission of greenhouse gases during individual stages of production, processing and transport). LCA also determines the environmental impact resulting from obtaining biomass, transport and its processing into biofuels vs. the impacts that occur in the life cycle of fossil fuels.

## **Light fuel oil**

A product obtained in crude oil processing characterized by a lower sulphur content and density than heavy heating oil. The light fuel oil is mainly used in household boiler rooms, in SMEs and institutions. It is also successfully used as the heating fuel in the boiler rooms of residential estates.

## **LPG (Liquefied Petroleum Gas)**

A liquefied gas, being a mixture of propane and butane, obtained in the processing of crude oil. Among its other applications, LPG is used as engine fuel or as fuel for household gas stoves.

## **LPG amine washing installation**

A system for removing sulphur from liquid gas fractions in the form of hydrogen sulphide.

## **Lubricant oil**

A composition of base oil and improvers. The quantity, type and relative proportions of these components are decisive for the class of the oil manufactured. Their main task is to reduce friction between the surfaces of the movable parts of mechanical devices that touch each other and work together. Lubricant oils are used in the automotive industry and for industrial applications.

## **M**

### **Materiality (according to the IFRS)**

According to the conceptual guidelines of the International Financial Reporting Standards, information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statement. Materiality of information depends on the size of the item judged in the particular circumstances of its omission or misstatement. According to the International Accounting Standards (in particular IAS 1 Presentation of financial statements), omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions of users taken on the basis of the financial statement.

### **Mechanical Completion (MC)**

Completing building-assembly work by signing a protocol between the Refinery Development Division and the contractor, which confirms that all work has been completed in compliance with the design and applicable regulations. A so-called Punch List may be enclosed with the protocol, i.e. a list of work to be performed at later stages, which does not prevent the start of the next process phase, i.e. precommissioning and the introduction of start-up assemblies.

### **MHC (Mild Hydrocracking)**

A hydrocracking installation that operates in slightly milder conditions than a standard hydrocracking system.

### **Modified asphalts**

Asphalts characterized by improved quality parameters, thanks to the interaction between asphalt and an applied modifier.

### **MTBE** (Methyl Tert-Butyl Ether)

A high-octane component used for gasoline production. Unlike ETBE, it is not a biocomponent.

## **N**

### **Naphtha**

A fluid fraction of crude oil composed of hydrocarbons whose particles contain 9-16 atoms of carbon. Naphtha can be processed into aviation fuel and diesel oils.

### **National Index Target**

A minimum share of biocomponents in the total volume of liquid fuels and liquid biofuels used during a calendar year in transport, calculated according to the caloric value.

## **O**

### **Oil transesterification**

A chemical reaction resulting in the formation of fatty acid methyl esters. The transesterification reaction of oils is a reaction of oil with methanol in the presence of a catalyst.

### **Own (petrol) stations**

Also known as CODO stations (company owned, dealer-operated).

Stations owned by LOTOS Paliwa and managed by external companies.

## **P**

### **Paraffin**

A mixture of solid saturated hydrocarbons, separated from the fractions of crude oil. It is used, among others, to manufacture candles, as a floor polish and as an insulation material.

### **Partner (petrol) stations**

Also known as DOFO stations (dealer-owned, franchise-operated).

Stations operating under the LOTOS brand within trading partnership under long-term franchise agreements.

### **Patronage (petrol) stations**

Also known as DODO stations (dealer-owned, dealer-operated).

Stations operating under the logo of the Gdańsk Refinery under patronage agreement.

### **Plasticizers**

Plasticizing improvers added to polymer products. Grupa LOTOS manufactures hydrocarbon plasticizers for the rubber industry.

### **Ppm** (*parts per million*)

A popular measuring method used to express the concentration of extremely diluted solutions of chemical compounds. This measure tells how many particles of a chemical compound are to be found among one million particles of the solution.

### **Provisional Acceptance Protocol**

A document signed with a contractor that confirms the achievement of the guaranteed parameters by a system, while any other contractual obligations have also been fulfilled.

## R

### **REACH**

Regulation of the European Parliament and Council concerning the safe application of chemicals through their registration and assessment and in some cases granting commercial permits and restrictions as regards the application. It came into force on 1 June 2007 and replaces several dozen previous community legal acts, both regulations and directives introduced into Polish legislation with the Act of 11 January 2001 on chemical substances and preparations.

### **Ready For Start Up (RFSU)**

The condition of readiness for start-up achieved by the system (introduction of production media) confirmed with a formal protocol approved by the Refinery Development Division.

### **REBCO** (Russian Export Blend Crude Oil)

A commercial name of Russian crude oil from the Ural.

### **ROSE** (Residual Oil Supercritical Extraction)

A technology used at the Gdańsk refinery in the SDA installation under construction.



## S

### **SDA (Solvent Deasphalting)**

An installation used to separate vacuum remnants after crude oil processing into lighter fractions, i.e. deasphalted oil (DAO) and heavier fractions, namely a bitumen component.

### **Slack wax**

A semi-product received in crude oil processing. It is used to produce wax.

## T

### **Transfer for tests**

The synonym of transferring the responsibility and the right to manage the facility by the Production Division/Technical Division. The transfer for tests does not end the investment process (the system remains an investment facility in the Refinery Development Division). The acceptance protocol enables a user to commence all work related to the start of the system. The Refinery Development Division remains responsible for any contacts with the main contractor with regard to remedying defects and the performance of any postponed work, for obtaining opinions or decisions of any external institutions as well as for any contractual consultation related to the test start-up.

### **Transfer for use**

The last stage of the investment process that is confirmed formally with the acceptance protocol (from the Refinery Development Division to the Production Division/Technical Division) by the Acceptance Commission. The document ends the investment process based on the requirements of the construction law and the law on environmental protection.

### **Troll Blend**

A type of crude oil from the North Sea. The Troll Blend is an average crude oil with a low sulphur content and a high potential within the production of diesel oils.

### **V**

### **Vacuum distillate**

A fraction of hydrocarbons separated from a more complex mixture with distillation under a reduced atmospheric pressure. Vacuum distillates produced from crude oil are usually used to produce base oil, and also as input for cracking processes.

### **Vacuum distillation**

A process analogical to the process of atmospheric distillation, conducted, however, at a reduced ambient pressure. It uses a physical property, whereby the boiling point decreases as the ambient pressure is reduced. It makes it possible to separate vacuum distillates in the atmospheric residuals. Heavy remnants of the distillation process are so-called vacuum residuals.

According to the conceptual guidelines of the International Financial Reporting Standards, information is material if its omission or misstatement could influence the economic decisions of users taken on the basis of the financial statement. Materiality of information depends on the size of the item judged in the particular circumstances of its omission or misstatement. According to the International Accounting Standards (in particular IAS 1 Presentation of financial statements), omissions or misstatements of items are material if they could, individually or collectively, influence the economic decisions of users taken on the basis of the financial statement.