

The Extended JODI Oil Questionnaire

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Outline

- Introduction to the JODI Oil Questionnaire
 - Key concepts and definitions
- Useful tips and information
- Differences with annual oil questionnaire



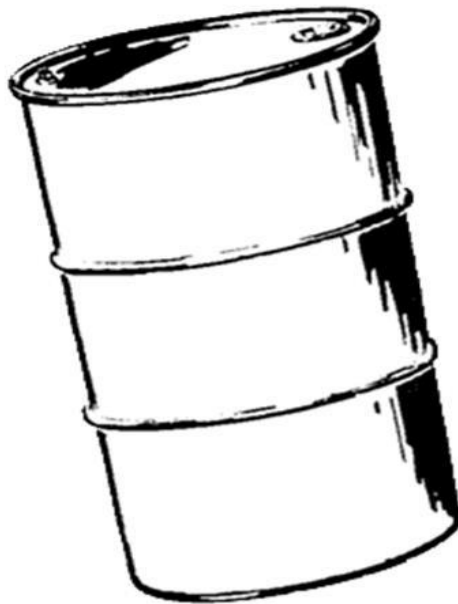
The JODI Oil Questionnaire

Key concepts and definitions

Oil refining (1)

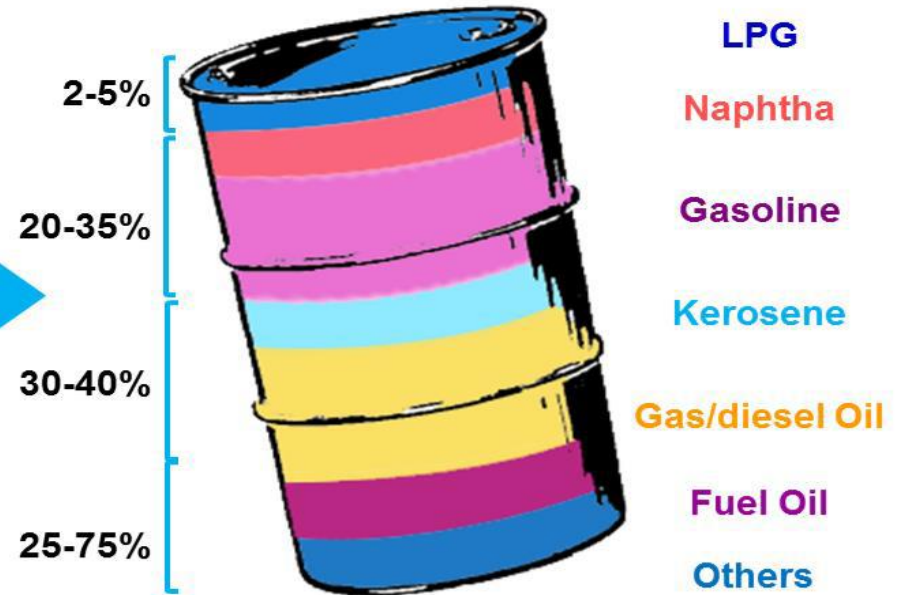
What is produced?

Crude Oil, NGL and other Hydrocarbons



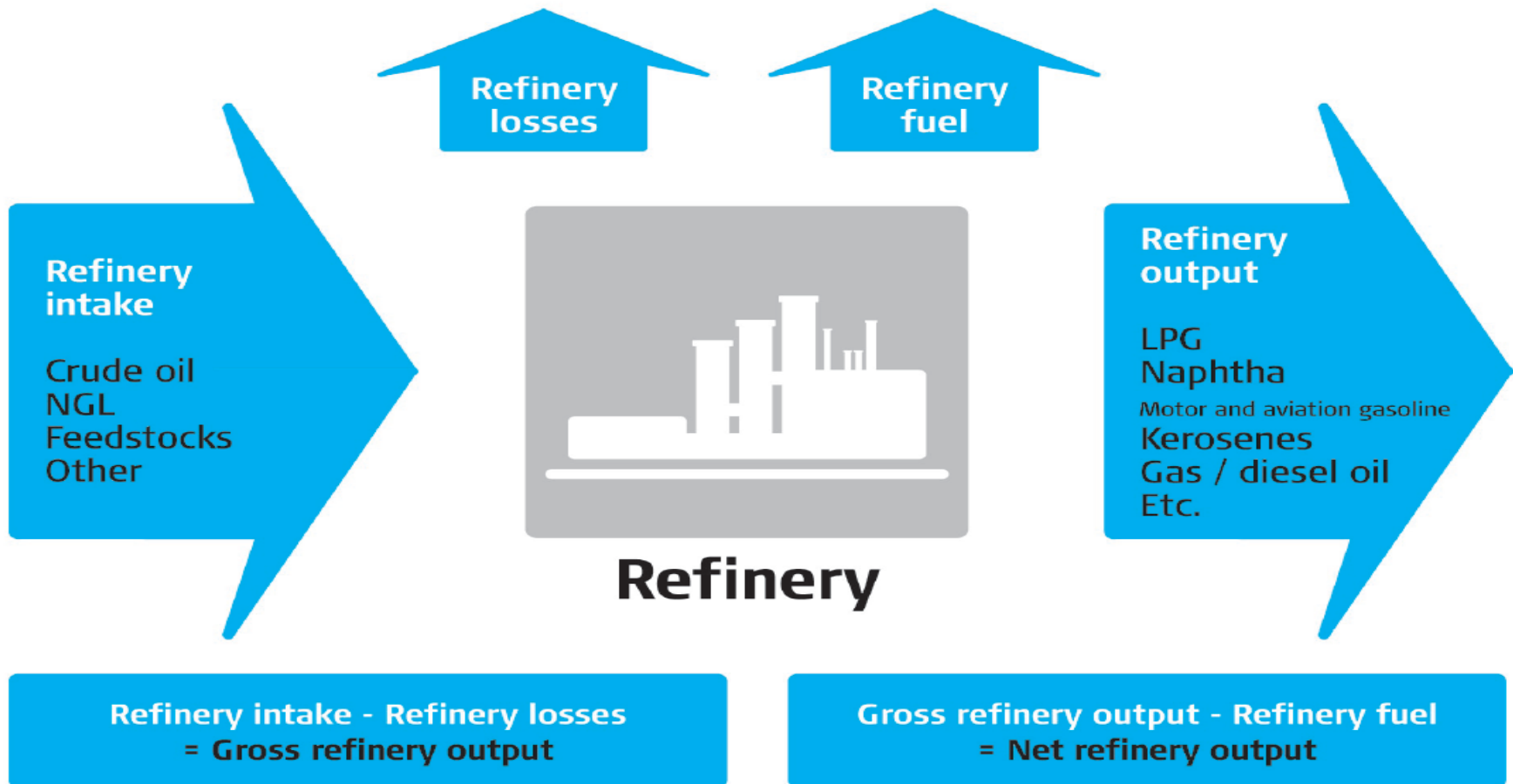
What is consumed?

Petroleum Products



Crude oil needs refining, because it has limited use in its raw state.

Oil refining (2)



JODI Oil Questionnaire – Product Definitions

Total Kerosene and Other Kerosene

- Kerosene comprises of kerosene type jet fuel and other kerosene
- Other kerosene usually has lower quality specification than jet kerosene (used as domestic heating oil and for lighting)
- Jet kerosene needs to be reported separately
- Pure biofuels used directly in engines are not included

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Product Definitions

Example: Reporting Kerosene

- Your country's refinery produces 60kt of kerosene in total, 40kt of which are jet kerosene
- 30kt of kerosene are imported, all of which are jet kerosene
- Demand: 20kt of other kerosene and 70kt of jet kerosene

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output				60	40				
+ From Other sources					+ Receipts									
+ Imports					+ Imports				30	30				
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand				90	70				
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Product Definitions

Other Secondary Products

- “Other Products” includes refinery gas, ethane, jet fuel gasoline, petroleum coke, white spirit and SBP, paraffin waxes, bitumen, lubricants and others
- Double counting should be avoided (e.g. biofuels)
- Receipts and demand of “Other Products” include direct use of crude oil and receipts of NGL and other hydrocarbons

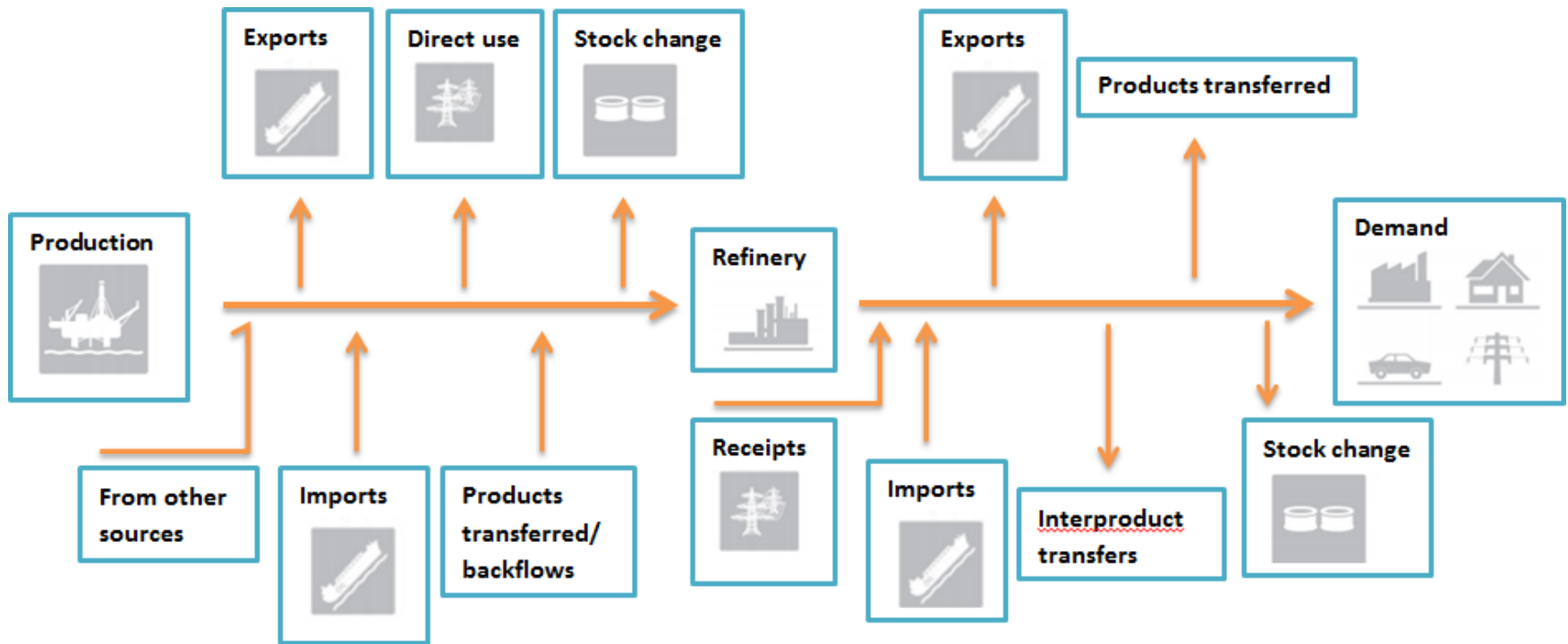
	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total products 5)+(6)+(7) +(8)+(10) (11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Product Definitions

- There are two columns to record the total primary products and total secondary products for each flow.

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products							Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)	
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil		Other Product
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					Refinery Output									
+ From Other sources					Receipts									
+ Imports					Imports									
- Exports					Exports									
+ Products Transferred /Backflows					Products Transferred									
- Direct Use					Interproduct Transfers									
- Stock Change					Stock Change									
- Statistical Difference	0	0	0	0	Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire - Flows



JODI Oil Questionnaire – Flow Definitions

Production

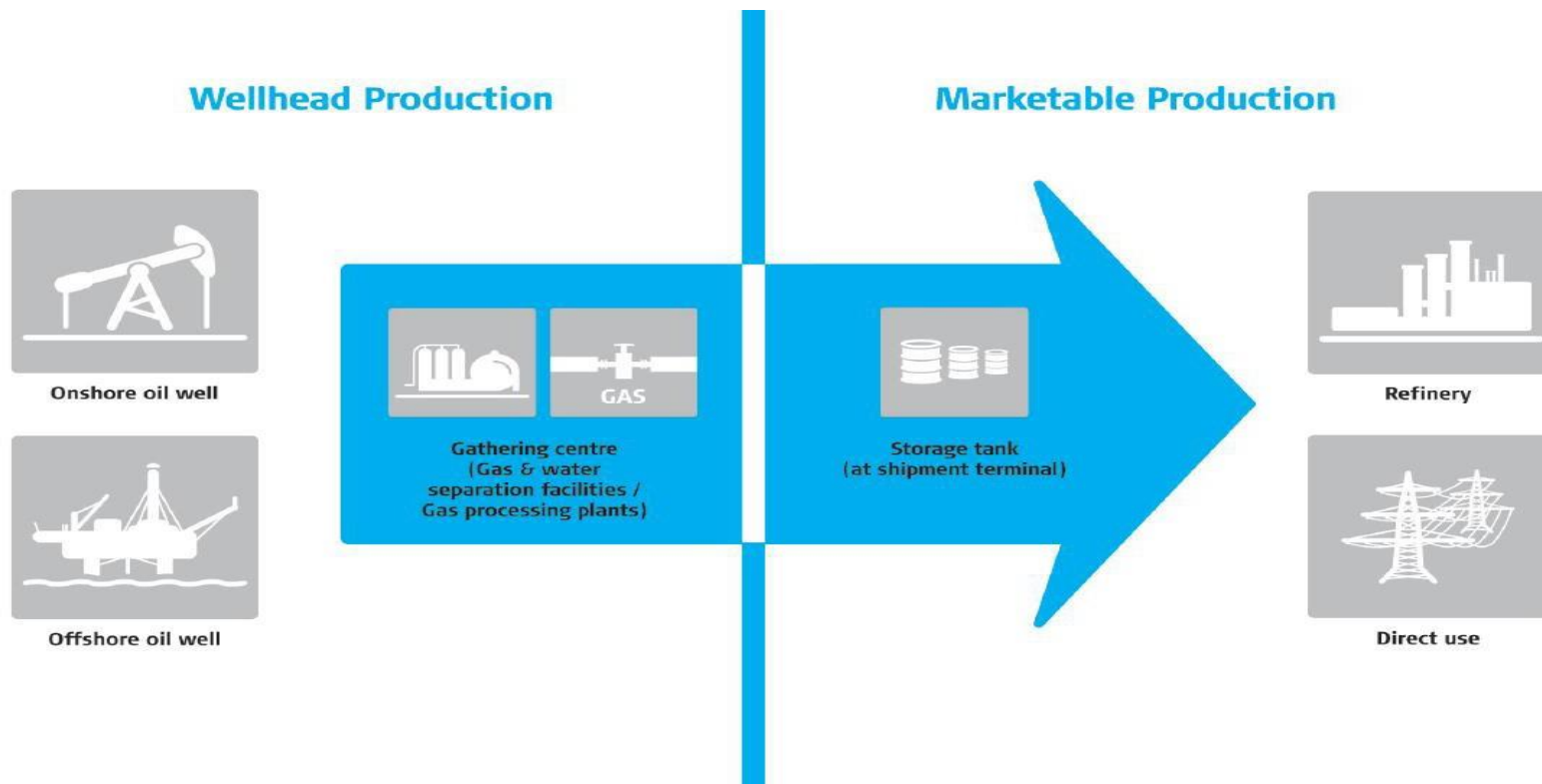
- All production within national boundaries including offshore production
- Such production should include crude oil, NGL, condensates and oil from shale or oil sands, as well as additives/oxygenates
- Distinction between wellhead production and marketable production

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

- *Production only applies to Crude oil, NGL, Other and Total. Production of refinery products is refinery output;*
- *Production is the removal of oil from the field, whether through primary or secondary recovery*

JODI Oil Questionnaire – Flow Definitions

Example: Crude Oil Production



Marketable production, after removal of impurities but including quantities consumed by the producer in the production process

JODI Oil Questionnaire – Flow Definitions

From Other Sources

- Supplies of additives, biofuels and other hydrocarbons that are produced from non-oil sources

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Imports and Exports

- Quantities that physically cross international boundaries, whether or not customs clearance has taken place
- Excludes transit and amounts for international bunkers
- Amounts of pure biofuels should not be reported

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Products Transferred and Backflows

- **Products Transferred:** Usually imported petroleum products reclassified as feedstocks for further processing, without delivery to final consumers. E.g. naphtha imported for upgrading
- **Backflows:** finished or semi-finished products returned from final consumers to refineries for processing, blending or sale (usually by-products of the petrochemical industry)

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Example: Products Transferred

- Your country imported 150kt of Naphtha
- The naphtha was then reclassified as feedstocks for further processing at the refinery

	Crude Oil	NGL	Other	Total (1)+(2)+(3)	Petroleum Products								
					LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output								
+ From Other sources					+ Receipts								
+ Imports					+ Imports		150						
- Exports					- Exports								
+ Products Transferred /Backflows			150		- Products Transferred		150						
- Direct Use					+ Interproduct Transfers								
- Stock Change					- Stock Change								
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0
= Refinery Intake			150		= Demand								
- Closing stocks					- Closing stocks								

JODI Oil Questionnaire – Flow Definitions

Direct Use

- Crude oil, NGL and other hydrocarbons which are used directly without being processed in oil refineries
- Example: Crude oil burned for electricity generation

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products							Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)	
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil		Other Products
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Example: Crude oil used for electricity generation

- Your country produces 100kt of crude oil
- The crude oil is used directly for producing electricity

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production	100				+ Refinery Output									
- From Other sources					+ Receipts								100	
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflow					- Products Transferred									
- Direct Use	100				+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand								100	
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Stock Change and Closing Stocks

- Definition of stocks is based on geographical location, except for OPEC where definition is based on ownership
- **Closing Stocks:** primary stock level at the end of the month on national territory. This includes stocks held by companies, stock holding organizations and governments

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Refinery Intake

- Observed inputs of crude oil, NGL, feedstocks, additives, biofuels and other hydrocarbons entering the refinery process
- Difference between inputs and deliveries to the refinery reflected in stocks changes at the refinery

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Statistical Difference

- **For primary products:**

Statistical Difference = Calculated Refinery Intake – Observed Refinery Intake

- **For secondary products:**

Statistical Difference = Calculated Demand – Observed Demand

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Refinery Output

- Production of finished petroleum products at a refinery. Gross output should be reported, including refinery fuel
- Avoid double-counting: Double-counting may occur when handling intermediate or semi-finished products

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions

Receipts

- **Primary product receipts**

- Primary products used directly without being processed at a refinery
- Backflows from the petrochemical industry used directly (not going back to refinery)

- **Recycled products**

- Finished products passing through the marketing network a second time after having been delivered to final consumers (eg. Oil lubricants which are cleaned for reuse)

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

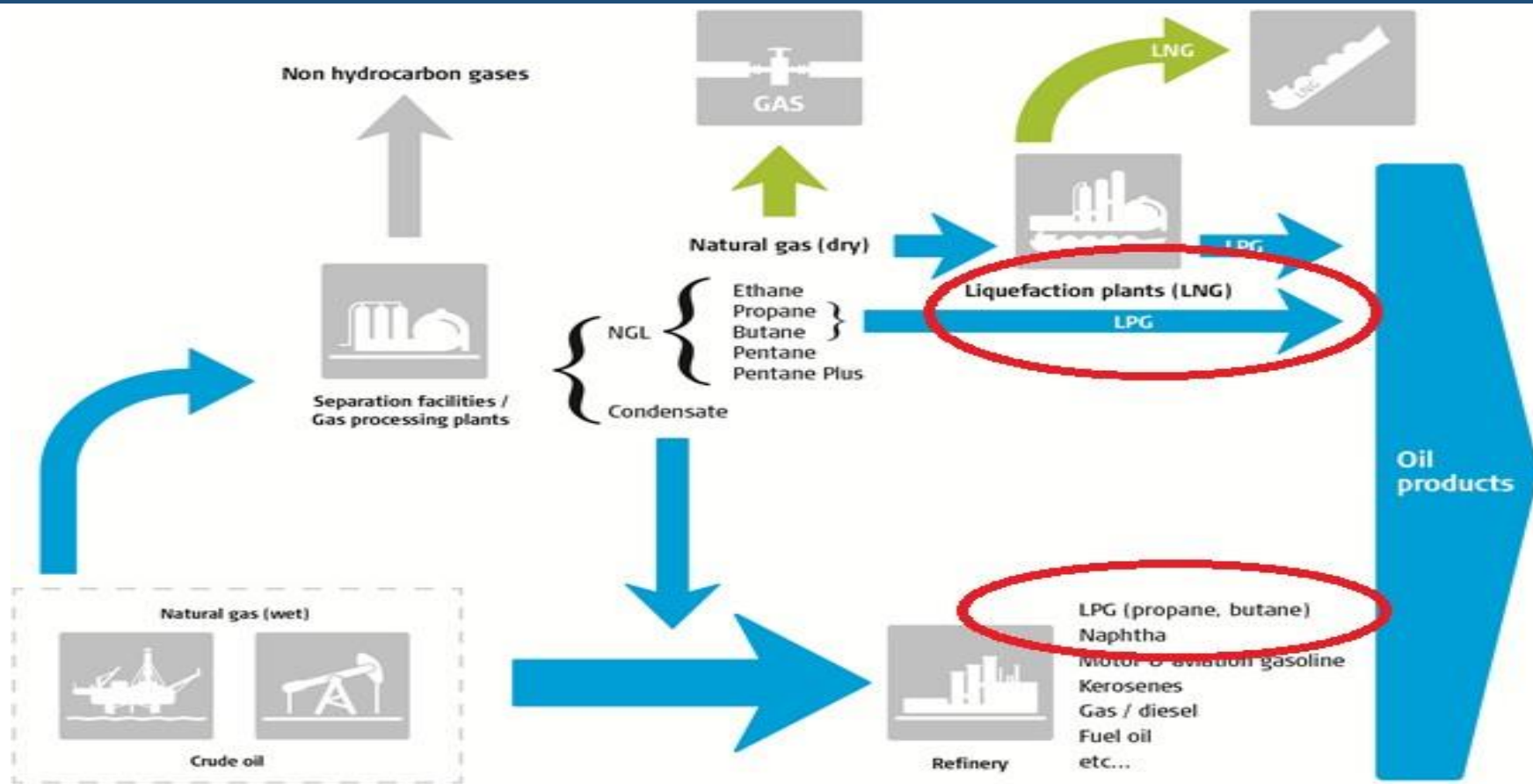
JODI Oil Questionnaire – Flow Definitions

Interproduct Transfers

- Reclassification of products due to change in specification or blending
- Total interproduct transfers are zero as individual transfers net out
- Example: Jet kerosene which has deteriorated or has been spoiled may be reclassified as other kerosene

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

How LPG is reported if it comes from a refinery or a gas plant



LPG comprises mainly propane and butane. LPG from gas plants should be reported to all flows of the JODI Oil questionnaire except refinery output

JODI Oil Questionnaire – Flow Definitions

LPG produced in a refinery

- 10kt of LPG are produced in a refinery

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output	10								
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake	190				= Demand									
Closing stocks					Closing stocks									

Refinery intake (Crude oil) = Refinery Output (Petroleum products)

JODI Oil Questionnaire – Flow Definitions

LPG produced in a natural gas plant

- 50kt of LPG are produced in a natural gas plant

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts								50	
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use		50			+ Interproduct Transfers	50							-50	
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

NGL is included in "Other Products"

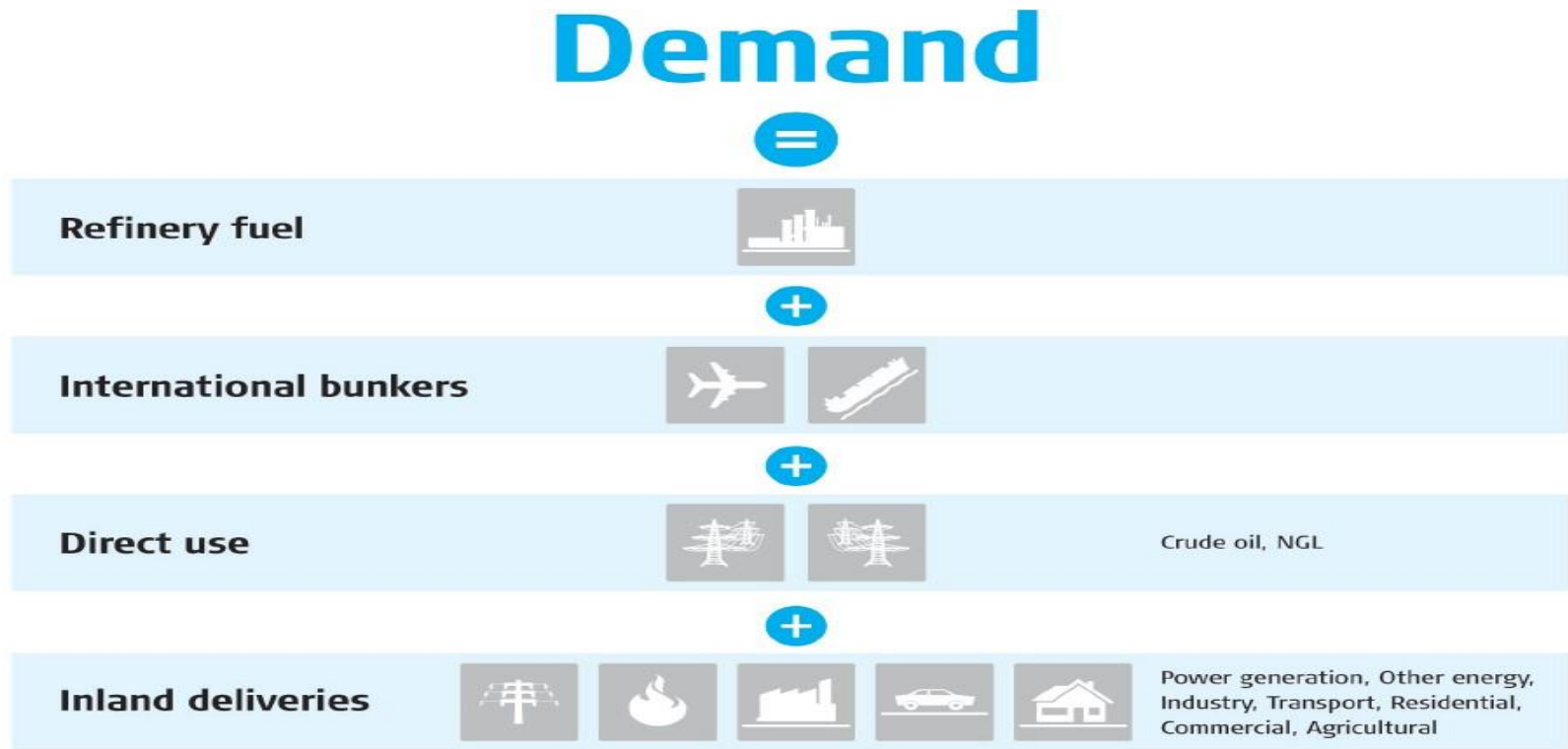
JODI Oil Questionnaire – Flow Definitions

Demand

- Final consumers
- Energy transformation
- Energy producers
- International navigation and aviation
- Includes direct use of crude oil, NGL and other hydrocarbons

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	Of which: Jet Kerosene	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
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+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Interproduct Transfers									
- Stock Change					- Stock Change									
- Statistical Difference	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

JODI Oil Questionnaire – Flow Definitions



Deliveries or sales to the inland market (domestic consumption) plus Refinery fuel plus International marine and aviation bunkers.

Demand for Other oil products includes direct use of Crude oil, NGL, and Other.



Useful tips and information

Useful Information – Reporting Unit

- Preferred reporting unit: thousand metric tons
- Volumetric units also accepted (barrels, cubic meters)
- National Administrations are asked to provide the specific densities for each product for conversion

Useful Information – Conversion Factors

- Conversion from volume to mass: specific density is different for each product
- Conversion factor for “Total Oil” should be the weighted average of all included products

Useful Information – Conversion Factors

Typical densities, conversion factors and calorific values for crude oil and petroleum products

Product	Density kg/m ³	litres per metric ton	Barrel per metric ton	Gross Calorific Value (GJ/t)	Net Calorific value (GJ/t) ⁽³⁾
Crude oil	853	1172	7.37	47.37	45.00
Ethane	366	2730	17.17	51.90	47.51
Refinery Gas	786	1272	8	52.00	47.60
Propane	508	1969	12.38	50.32	46.33
Butane	585	1709	10.75	49.51	45.72
LPG ⁽¹⁾	539	1856	11.67	50.08	46.15
Naphtha	706	1416	8.91	47.73	45.34
Aviation gasoline	707	1414	8.90	47.40	45.03
Motor gasoline ⁽²⁾	741	1350	8.49	47.10	44.75
Jet Kerosene	803	1246	7.84	46.93	44.58
Other Kerosene	810	1235	7.76	46.05	43.75
Gas/Diesel oil	844	1186	7.46	45.66	43.38
Fuel oil low sulphur	925	1081	6.80	43.75	41.56
Fuel oil high sulphur	975	1026	6.45	42.00	39.90
Bunker Fuel oil	975	1026	6.45	42.60	40.47
Fuel Oil (Avg)	944	1059	6.66	42.82	40.68
White Spirit	743	1346	8.46	46.32	44.00
Paraffin Waxes	801	1248	7.85	42.00	39.90
Lubricants	887	1127	7.09	44.00	41.80
Bitumen	1035	966	6.08	42.10	40.00
Petroleum Coke	1150	870	5.47	34.80	33.06
Other Products	786	1273	8.00	42.30	40.19

⁽¹⁾ Assumes a mixture of 60% propane and 40% butane by mass.

⁽²⁾ An average for motor gasolines with RON between 91 and 95.

⁽³⁾ For Naphtha and heavier oils the net calorific value is assumed to be 95% of gross.

Useful Information – Conversion Factors

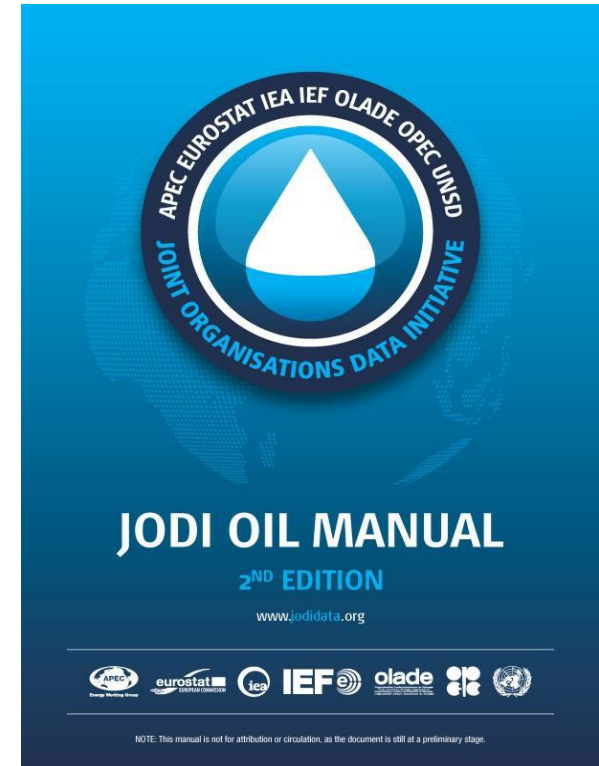
Converting volume into mass

- Converting 100,000 barrels of motor gasoline into metric tons
- Density of motor gasoline for conversion from volume to mass
- Density of motor gasoline: 8.49bbl/t

- Calculation:
$$\frac{100,000 \text{ bbl}}{8.49 \text{ bbl/t}} = 11.78 \text{ kt}$$

JODI Oil Manual

- Overview of the Extended JODI Questionnaire
- Definitions of products and flows
- Data verification methods
- Examples of practices from countries
- Database overview
- Available in English





Conclusions

Main differences with annual questionnaire

- Demand in monthly JODI oil includes international marine and aviation bunkers, refinery fuel, own use and inputs to transformation;
 - In annual questionnaire, these have separate columns
- JODI questionnaires has few products cited
 - Annual questionnaire included more petroleum products



Thank you for your kind attention!

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