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Better Data – Better Decisions

The Extended JODI Oil Questionnaire Data

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www.jodidata.org

Aim of Presentation

Guidance on how to fill out the JODI Oil Questionnaire

- Main concepts
- Definitions for selected products and flows
- Useful tips and information

Initial JODI Questionnaire

42 Data Points

Country: _____

Month: _____

Unit: _____

		Crude Oil
Production		
Imports		
Exports		
Stocks	Closing	
	Change	
Refinery Intake		

1 x 6

		Petroleum Products					
		LPG	Gasoline	Kerosene	Gas/Diesel Oil	Fuel Oil	Total Oil
Refinery Output							
Imports							
Exports							
Stocks	Closing						
	Change						
Demand							

6 x 6

Extended JODI Questionnaire

126 Data Points

Country _____

Month _____ *Unit :* _____

	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)+(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	
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

(10 x 4) - 4 **10 x 9**

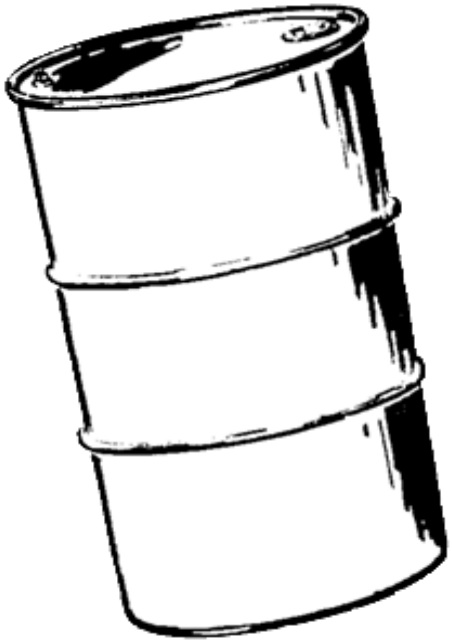
JodiOil

BETTER DATA
BETTER DECISIONS

Oil Refining

What is produced?

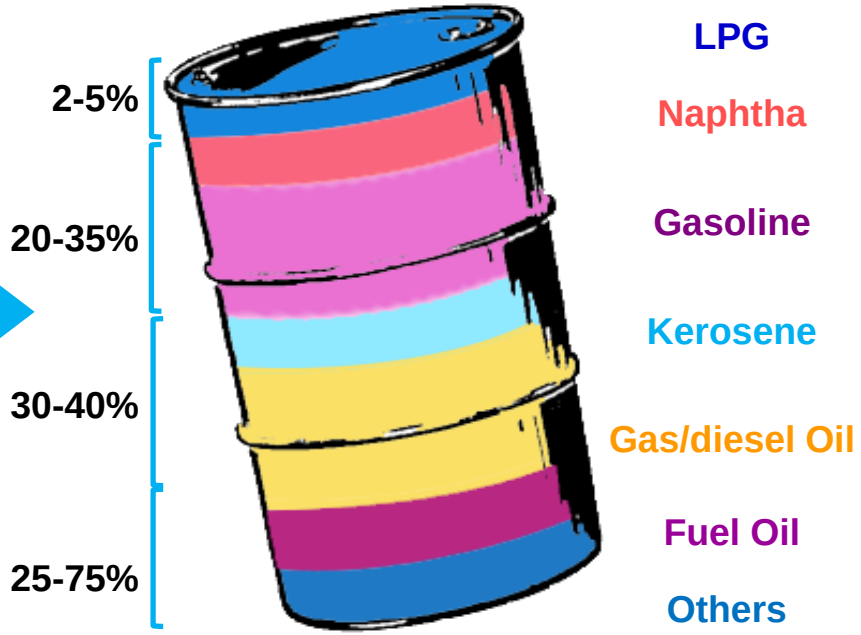
Crude Oil, NGL and other Hydrocarbons



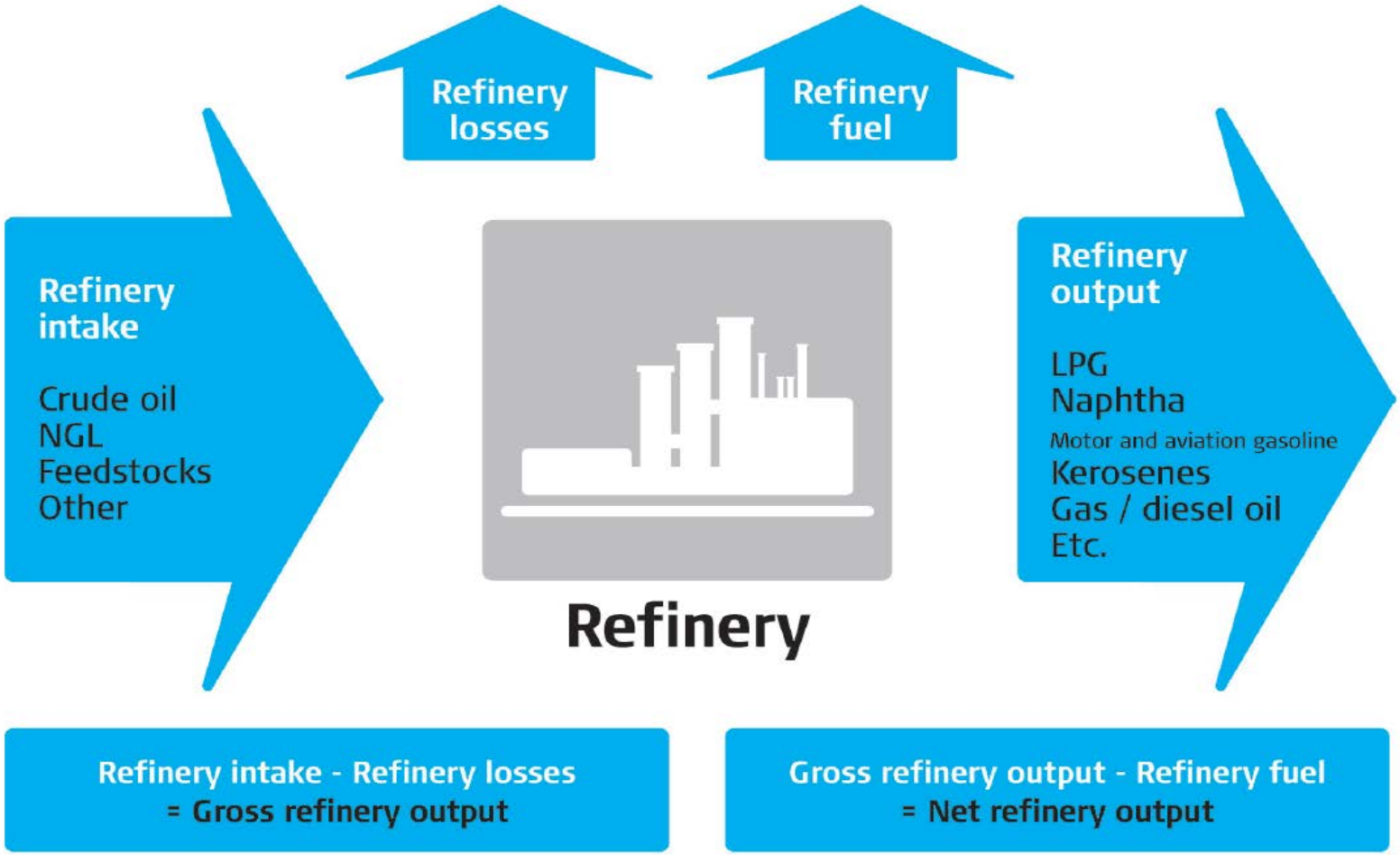
Refining

What is consumed?

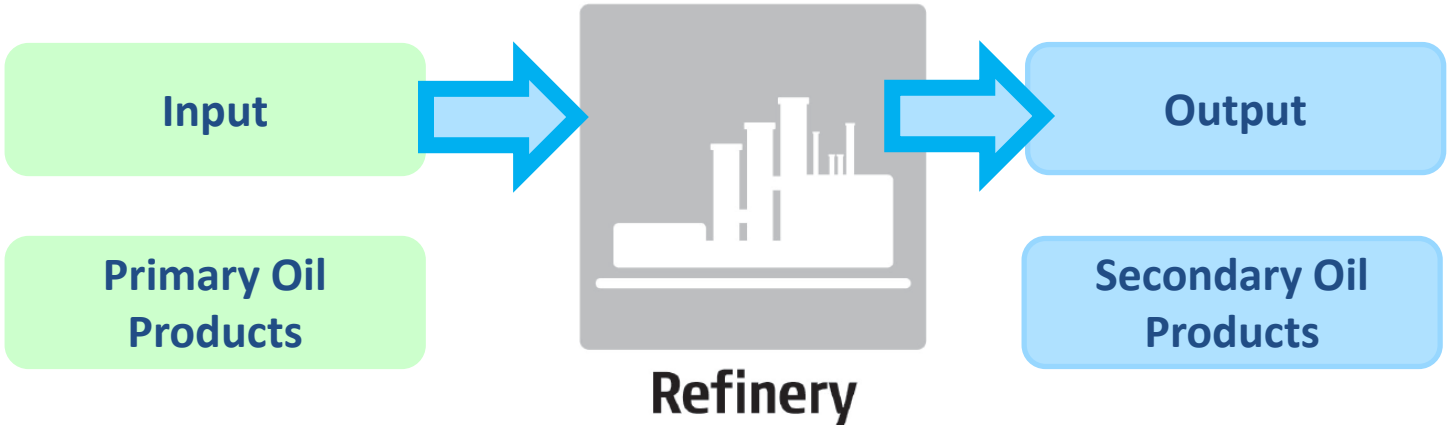
Petroleum Products



Oil Refining



Questionnaire Structure



	Crude Oil	NGL	Other	Total (1)+(2)+(3)
	(1)	(2)	(3)	(4)
+ Production				
+ From Other sources				
+ Imports				
- Exports				
+/- Products Transferred /Backflows				
- Direct Use				
- Stock Change				
- Statistical Difference				
= Refinery Intake				
Closing stocks				

	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)
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Refinery Output									
+ Receipts									
+ Imports									
- Exports									
- Products Transferred									
+/- Interproduct Transfers									
- Stock Change									
- Statistical Difference									
= Demand									
Closing stocks									

Timeliness

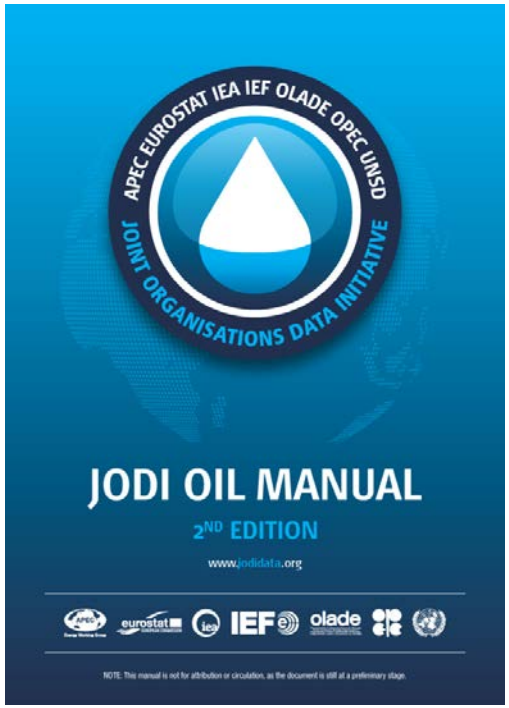
- **M-1: one-month old data**
  (Example: On 25 May 2015, submitted data is for April 2015)
  - Some countries not able to collect all the required data from all data sources
  - Due to such limitations in the data collection system these countries are allowed to report M-2.

- **M-2: two-month old data**
  (Example: On 25 May 2015, submitted data is for March 2015)
  - M-2 data more complete and available

- **Submission of M-1 data is encouraged**
- **Revision of M-2 and earlier data is encouraged**

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



Definition of Products

Category: Crude Oil

- Most important – but not the only – hydrocarbon from which oil products are manufactured
- Includes lease or field condensates
- Excludes NGL

Crude Oil	(2)	Other (3)	Total (1)+(2)+(3) (4)		Petroleum Products								
					LPG (5)	Naphtha (6)	Gasoline (7)	Total Kerosene (8)	*Of which: Jet Kerosene (9)*	Gas/ Diesel Oil (10)	Fuel Oil (11)	Other Products (12)	Total Products (5)+(6)+(7)+(8)+(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	- Statistical Difference	0	0	0	0	0	0	0	0	0
= Refinery Intake				= Demand									
Closing stocks				Closing stocks									

Definition of Products

Category: Natural Gas Liquids (NGL)

- Mixture of ethane, propane, butane (normal and iso-), (iso) pentane and pentanes plus.
- Produced in association with crude oil or natural gas and removed in field facilities or gas separation plants before sale of the gas.

	Cru	NGL		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)		(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									

Definition of Products

Category: Other

- Refinery Feedstocks + Additives/oxygenates + Other Hydrocarbons
  - **Additives**: non-hydrocarbon compounds added to or blended with a product to modify fuel properties (octane, cold properties, etc.)
  - **Biofuels** that are blended into gasoline and diesel
  - **Other hydrocarbons**: non-conventional oils and hydrogen

	Crude Oil	[illegible]	Other	(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)		(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									

Definition of Products

Category: Liquefied Petroleum Gases

- Liquefied Petroleum Gas (LPG) is the generic name for commercial propane and commercial butane
- Produced in natural gas processing plants, oil refineries and as a byproduct in natural gas liquefaction plants

	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products							
						LPG	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)		(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
= Refinery Intake					= Demand								
Closing stocks					Closing stocks								

Definition of Products

Category: Kerosene and Jet Kerosene

- Kerosene comprises 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)		LPG	Naphtha	Ga			esel	Fuel Oil	Other Products	Total Products (5)+(6)+(7) +(8)+(10) +(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)			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									

Total Kerosene & Jet Kerosene

Definition of Products

Category: Kerosene and Jet Kerosene

Example

- Our country's refinery produces 60kt of kerosene in total,
  40kt of which are jet kerosene.
- 30kt of kerosene are imported, all of which is jet kerosene.
- Demand: 90kt of total kerosene, of which 70kt are jet kerosene

	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)
	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
+ Refinery Output	0	0	0	60	40	0	0	0	0
+ Receipts	0	0	0	0	0	0	0	0	0
+ Imports	0	0	0	30	30	0	0	0	0
- Exports	0	0	0	0	0	0	0	0	0
- Products Transferred	0	0	0	0	0	0	0	0	0
+ Interproduct Transfers	0	0	0	0	0	0	0	0	0
- Stock Change	0	0	0	0	0	0	0	0	0
- Statistical Difference	0	0	0	0	0	0	0	0	0
= Demand	0	0	0	90	70	0	0	0	0
Closing stocks	0	0	0	0	0	0	0	0	0

Definition of Products

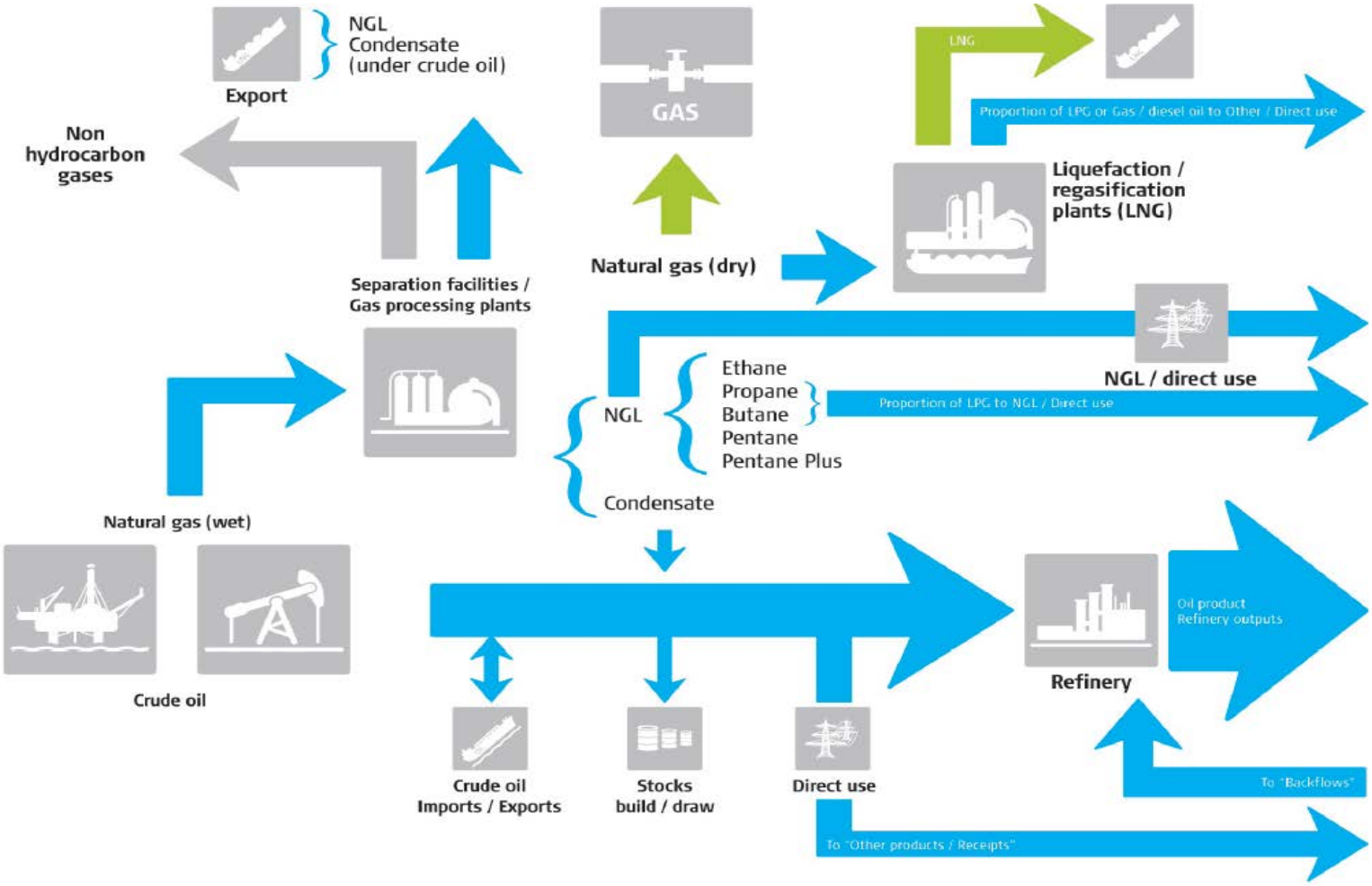
Category: Other Products

- "Other Products" include 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	F		al cts (7) 0) (12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	(9)	(10)	(11)		(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									

Other Products

Definition of Flows



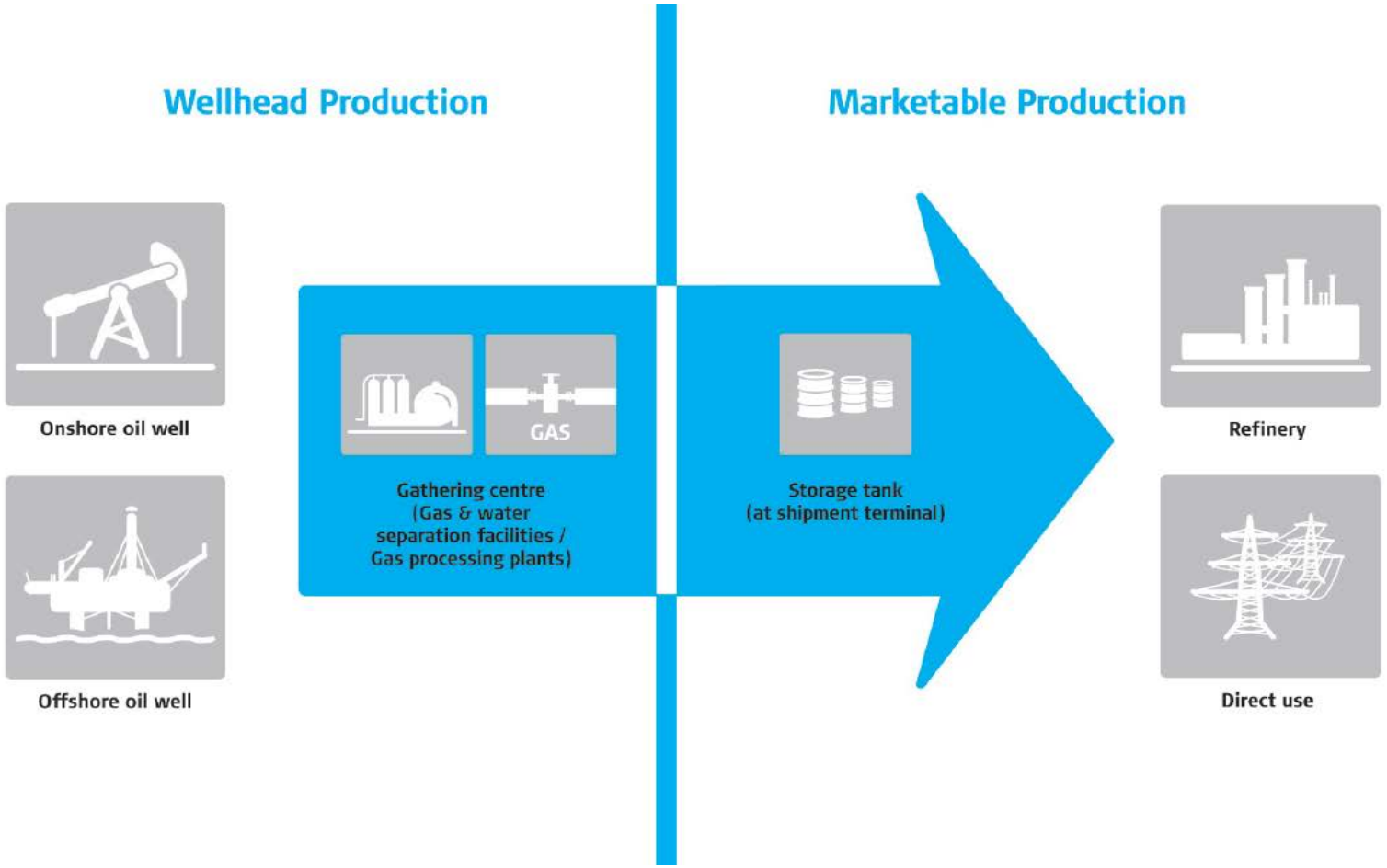
Definition of Flows

Flow: Production

- All liquid production i.e. crude oil, NGL, condensates and oil from shale and tar 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									
					+ Receipts									
					+ Imports									
- Exp					- 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									

Example: Crude Oil Production



Definition of Flows

Flow: 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)
					+ Refinery Output									
					+ Receipts									
					+ Imports									
					- Exports									
+ Pr ed /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									

From Other Sources

Definition of Flows

Flow: Imports and Exports

- Quantities that physically crossed the international boundaries, whether or not customs clearance has taken place
- Excluding transits and amounts for international bunkers
- Amounts of pure biofuels not 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)
+					+									
- Direct [illegible]					+ 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									

Imports/ Exports

Imports/ Exports

Definition of Flows

Flow: 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 from the Petrochemical Industry: finished or semi-finished products returned from final consumers to refineries for processing, blending or sale

	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)
+ P					+ Refi									
					+ P									
					- S									
- S e	0	0	0	0	- Stati	0	0	0	0	0	0	0	0	0
= Refinery Intake					= Demand									
Closing stocks					Closing stocks									

Products Transferred/ Backflows

Products Transferred

Definition of Flows

Flow: Direct Use

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

	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 [illegible]					+ Receipts									
[illegible]					+ Imports									
[illegible]					- Exports									
[illegible]					- Products Transferred									
[illegible]					+ Interproduct Transfers									
[illegible]					- 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									

Direct Use

Definition of Flows

Flow: Stock Change and Closing Stocks

- Definition of stocks based on geographical location, except for OPEC where definition based on ownership
- Closing Stocks: primary stock level at the end of the month on national territory; includes stocks held by companies, stock holding organisations 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									
	0	0	0	0		0	0	0	0	0	0	0	0	0
=					=									

Stock Change

Closing Stocks

Stock Change

Closing Stocks

Definition of Flows

Flow: 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 stock 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 U...					+ Interproduct Transfers									
-					- Stock Change									
	0	0	0	0	- Statistical Difference	0	0	0	0	0	0	0	0	0
					= Demand									
					Closing stocks									

Refinery Intake

Definition of Flows

Flow: Statistical Difference

- For primary products: Statistical Difference = Calculated Refinery Intake – Observed Refinery Intake
- For secondary products: Statistical Difference = Calculated Demand – Observed Demand

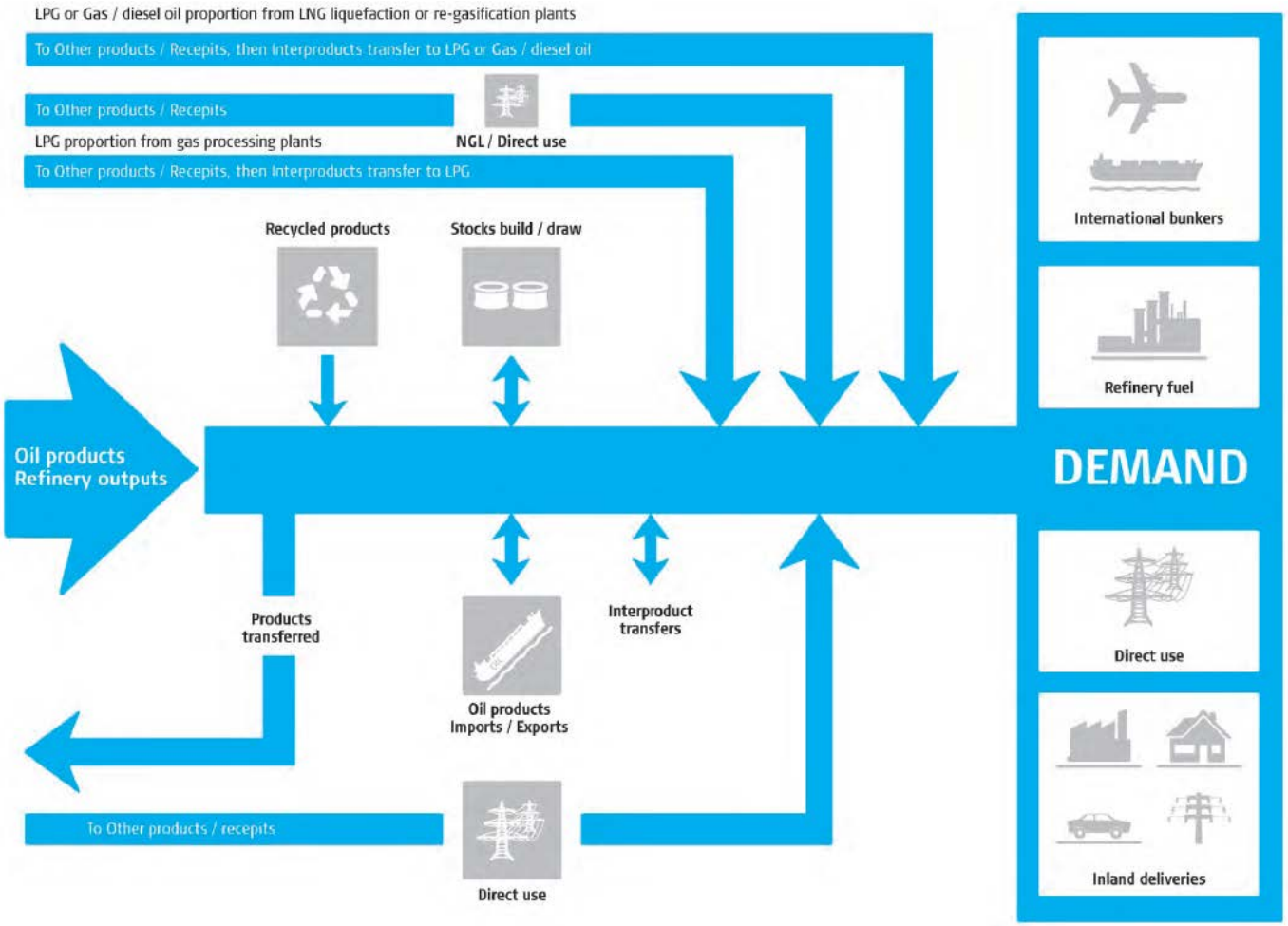
	Crude Oil	NGL	Other	Total (1)+(2)+(3)		Petroleum Products								
						LPG	Naphtha	Gasoline	Total Kerosene	*Of which: Jet Kerosene*	Gas/ Diesel Oil	Fuel Oil	Other Products	Total Products (5)+(6)+(7)+(8)+(10)+(11)+(12)
	(1)	(2)	(3)	(4)		(5)	(6)	(7)	(8)	*(9)*	(10)	(11)	(12)	(13)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Ba					- Prod red									
	0	0	0	0		0	0	0	0	0	0	0	0	0

Statistical Difference

Statistical Difference

Supply Chain

from Refinery to End-User



Definition of Flows

Flow: Refinery Output

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

	Crude Oil	NGL	Other	Total (1)+(2)+(3)	Refinery Output	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														
+ From Other sources														
+ Imports					+									
- Exports					- Exp									
+ 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									

Definition of Flows

Flow: Receipts

Primary products receipts

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

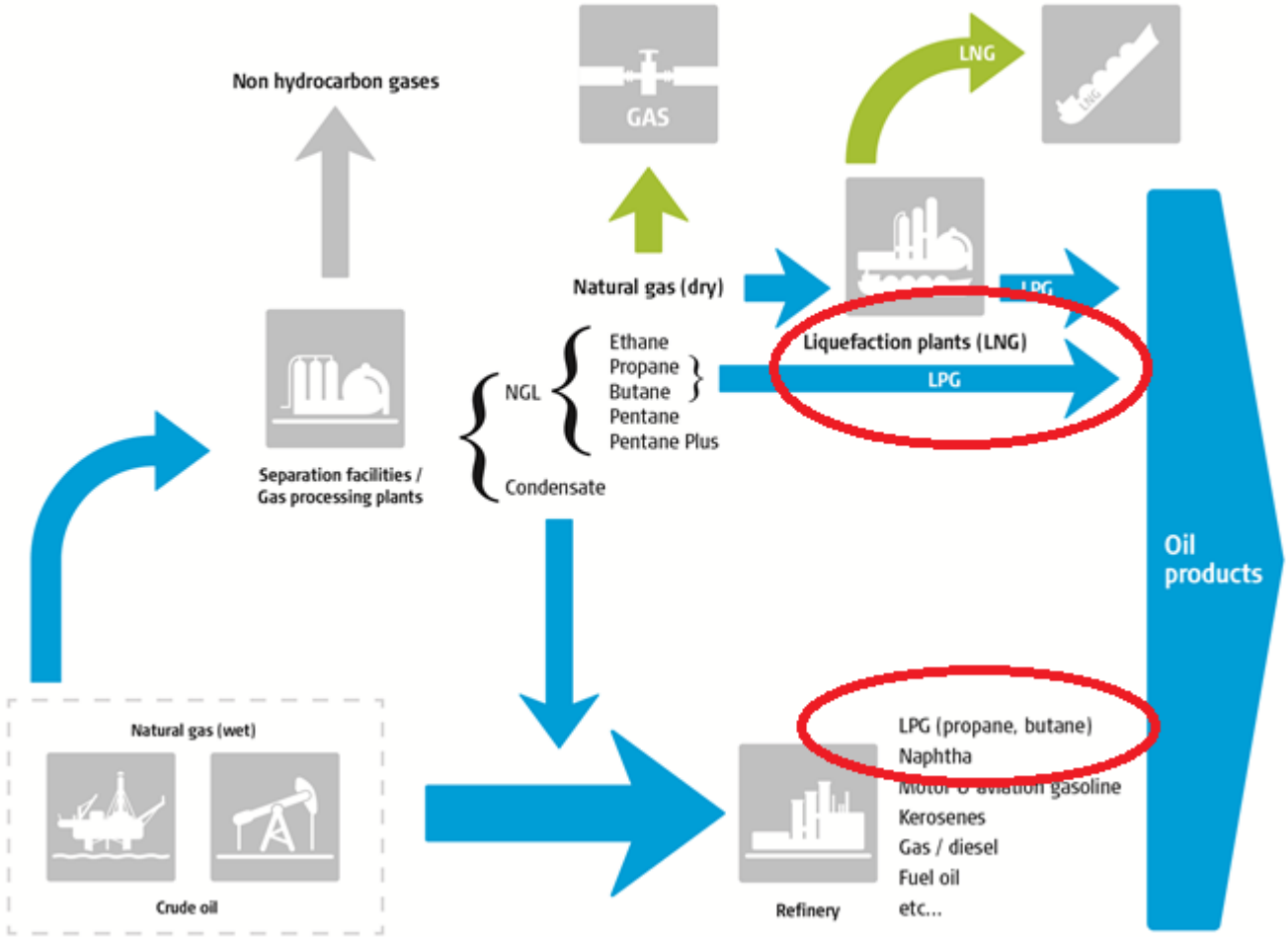
Recycled products

- Finished products passing a second time through the marketing network, after having been delivered to final consumers (eg. lubricants oil which is 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														
+ From Other sources														
+ Imports														
- Exports														
+ Products Transferred /Backflows														
- Direct Use					+ In[illegible]ers									
- 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									

Receipts

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



Definition of Flows

Example: Refinery Output of LPG

	Crude Oil		Oil Products
			LPG
	(1)		(5)
+ Production	150	+ Refinery Output	10
+ From Other sources		+ Receipts	
+ Imports	50	+ Imports	
- Exports	10	- Exports	
+ Products Transferred /Backflows		- Products Transferred	
- Direct Use		+ Interproduct Transfers	
- Stock Change	0	- Stock Change	3
- Statistical Difference		- Statistical Difference	
= Refinery Intake	190	= Demand	7
Closing stocks		Closing stocks	

Definition of Flows

Example: LPG Produced in Natural Gas Plant

NGL included in "Other oil products"

	NGL		Oil products	
			LPG	Other oil products
	(2)		(11)	(12)
+ Production	100 (of which 50)	+ Refinery output	10	
+ From other sources		+ Receipts		50
+ Imports	25	+ Imports		
– Exports		– Exports	5	
+ Products transferred /Backflows		– Products transferred		
– Direct use	50	+ Interproduct transfers	50	-50
– Stock change	6	– Stock change	2	
– Statistical difference	4	– Statistical difference	-2	0
= Refinery intake	65	= Demand	55	
Closing Stocks		Closing stocks		

Definition of Flows

Flow: 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					- R...									
- Direct Use														
- Stock Change														
- Statistical Difference	0	0	0			0	0	0	0	0	0	0	0	0
= Refinery Intake														
Closing stocks														

Interproduct Transfers

Definition of Flows

Flow: Demand

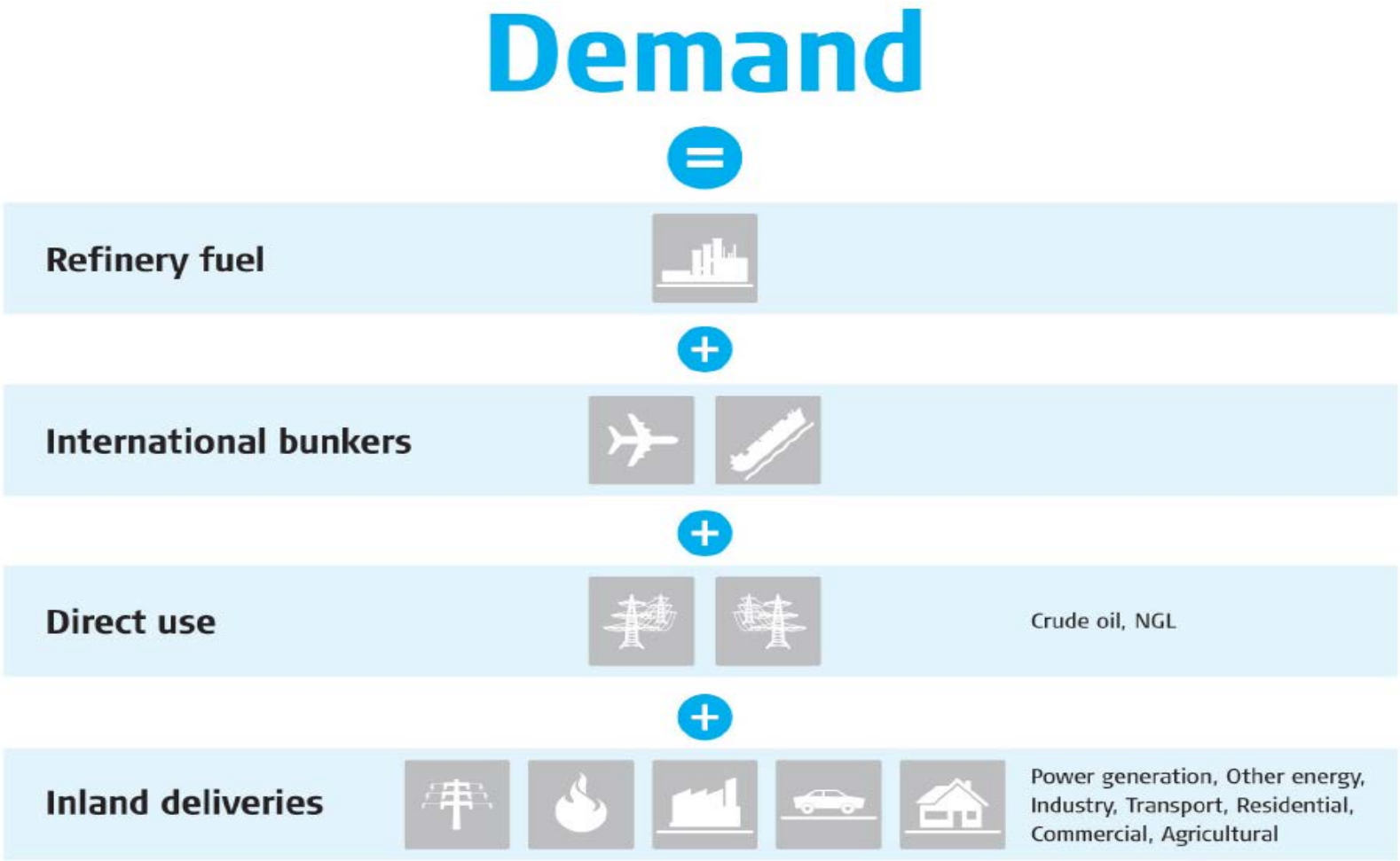
- Final consumers
- Energy transformation
- Energy producers
- International navigation and aviation
- Including direct use of crude oil, NGL and other hydrocarbons

	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)
+ Production					+ Refinery Output									
+ From Other sources					+ Receipts									
+ Imports					+ Imports									
- Exports					- Exports									
+ Products Transferred /Backflows					- Products Transferred									
- Direct Use					+ Int fers									
- Stock Change														
- Statistical Difference	0	0	0	0		0	0	0	0	0	0	0	0	0
= Refinery Intake														
Closing stocks														

Demand

Definition of Flows

Flow: Demand



Useful Information

Reporting Unit

- Preferred reporting unit: thousand metric tons
- Volumetric units also accepted (barrels, cubic meters)
- National Administrations 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

Typical Densities, Conversion Factors and Calorific Values for Crude Oil and Petroleum Products

Product	Density kg/m3	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 Kersosene	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 suphur	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
Parrafin 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

Example: 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: 100,000bbl ÷ 8.49bbl/t = 11.78kt

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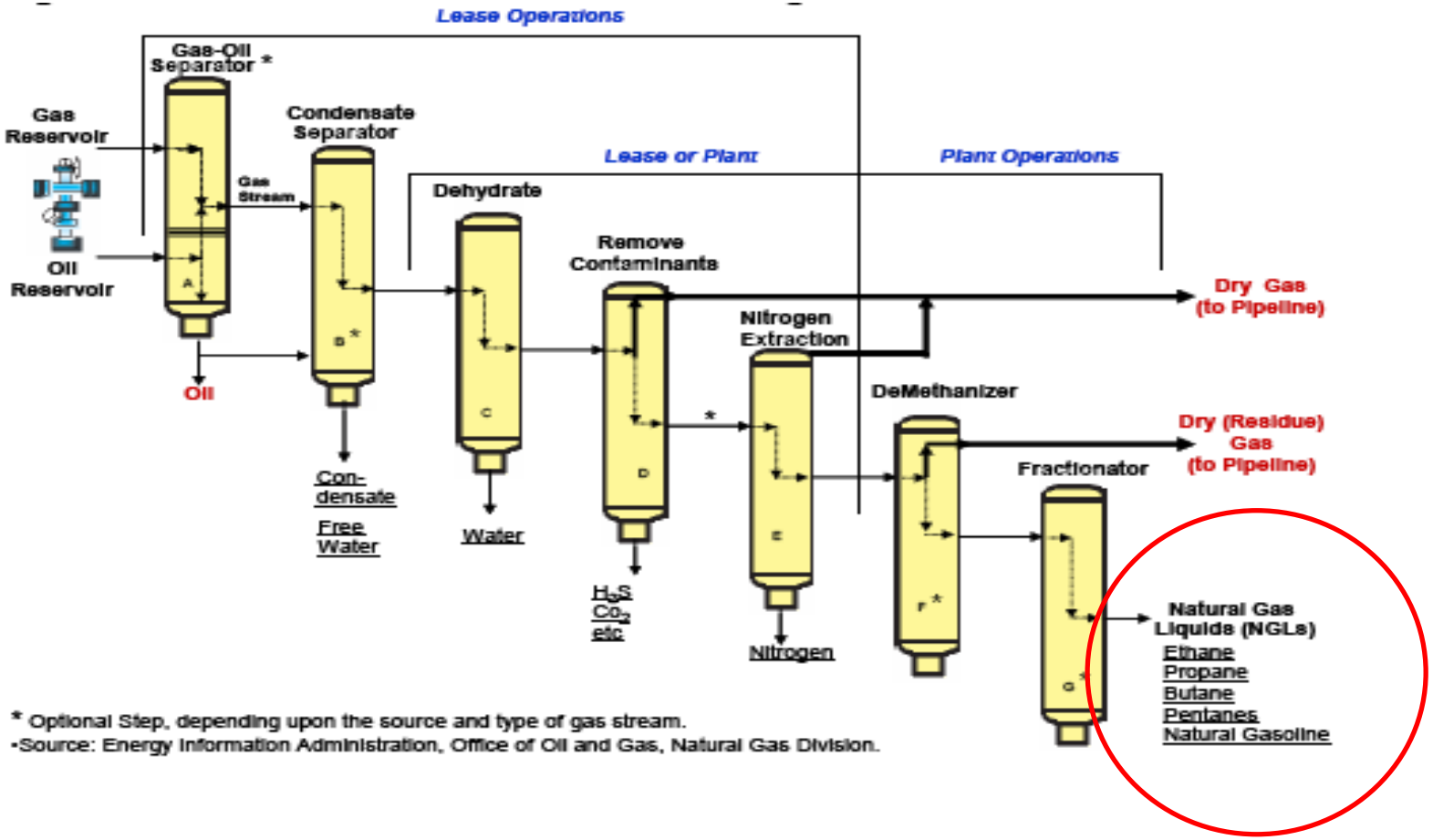
NGL



Source: EIA-USDOE, Office of Oil and Gas, *"Natural Gas Processing: The Crucial Link Between Natural Gas Production and Its Transportation to Market"*, http://www.eia.doe.gov/pub/oil_gas/natural_gas/feature_articles/2006/ngprocess/ngprocess.pdf, January 2006