

**Project Phasis Refinery
Feasibility Study – ExSum**

March, 2020

Georgia's strategic location and long history of oil trade create favorable business climate



Historical notes



In 1883, the Nobel brothers built an oil terminal in Batumi



On August 22, 1892, the Marcus Samuel Jr and his brother Sam, founders of the "Shell Transport and Trading Company", commissioned the construction of the oil tanker **Murex-1**, loaded it in Batumi and for the first time in history delivered kerosene to Singapore through the Suez Canal.

Rothschild oil **refinery** was built in March 1902.

In 1906, another historical event happened, when brothers Ludvig, Robert and Alfred Nobel, first build 835 km long **kerosene pipeline** from Baku to Batumi and reached a capacity of 900 000 tons per year. The pipeline was the very first of its kind and became the base for future development of oil transportation industry.

Global Rankings



- 7th Ease of doing business
- 2nd Starting a business
- 7th Protecting minority investors



BB
Credit rating, 2019



Ba2
Credit rating, 2017



16th
Economic freedom Index, 2019

Phasis investment project implies construction of a modern crude oil refinery allowing for production of Euro 5 oil products

In September 2019, Deloitte conducted a feasibility study of light crude oil refinery to determine, if the project is a go/no go. The study shows that the project is economically and financially feasible. Later in January 2020, Deloitte as per request of the Client has updated the feasibility study due to received new proposal from Axens that significantly decreased CapEx investment. Our latest financial model demonstrates a positive net present value (NPV) of USD 770m and an internal rate of return (IRR) of 27.8% with a payback period of eight (8) years.

The refinery will be strategically located near Poti Sea Port and will offtake light crude oil from Western Kazakhstan through the CPC pipeline oil export terminal in the Black Sea Novorossiysk (CPC Blend). Refined oil products will be marketed to a broad base of independent retailers on the wholesale markets of Georgia, Armenia, Ukraine, North Turkey and Mediterranean market.

In August 2019 Técnicas Reunidas completed technical audit study. The Project's Environmental Impact Assessment (EIA) was prepared by Eco-Spectri, an independent consultant on social and environmental protection issues and was approved by the Ministry of Environmental Protection and Agriculture in January 2019. EIA for the pier construction and building of a railroad line are currently being considered.

Phasis Oil will purchase an isomerisation and catalytic reformer unit that will increase octane number in the naphtha and transform it into gasoline.

The 10 Equator principles are not required by the law of Georgia and it was not covered in the EIA study. Eco-Spectri is now developing a new EIA document for the government of Georgia. In parallel, they are developing English version of the report but with additional studies including the 10 Equator Principles analysis.

Project risks were assessed and mitigation steps suggested to the Client. Among the key risks identified are lower-than-expected light distillates yield, higher OpEx and CapEx, as well as ecological risks that may affect the Project's implementation.



Key inputs for the Phasis refinery

Annual throughput



4.2m metric tonnes
(94.5k barrels per day)

Land plot



80 ha

Final yields



42%
Euro 6 Gasoline



32%
Euro 5 Diesel



23%
Jet A1 Fuel



1.2%
Residue



0.6%
Sulfur



0.5%
Propane

Capital expenditure and working capital



USD 1,1 bln

CapEx per tonne



USD 262

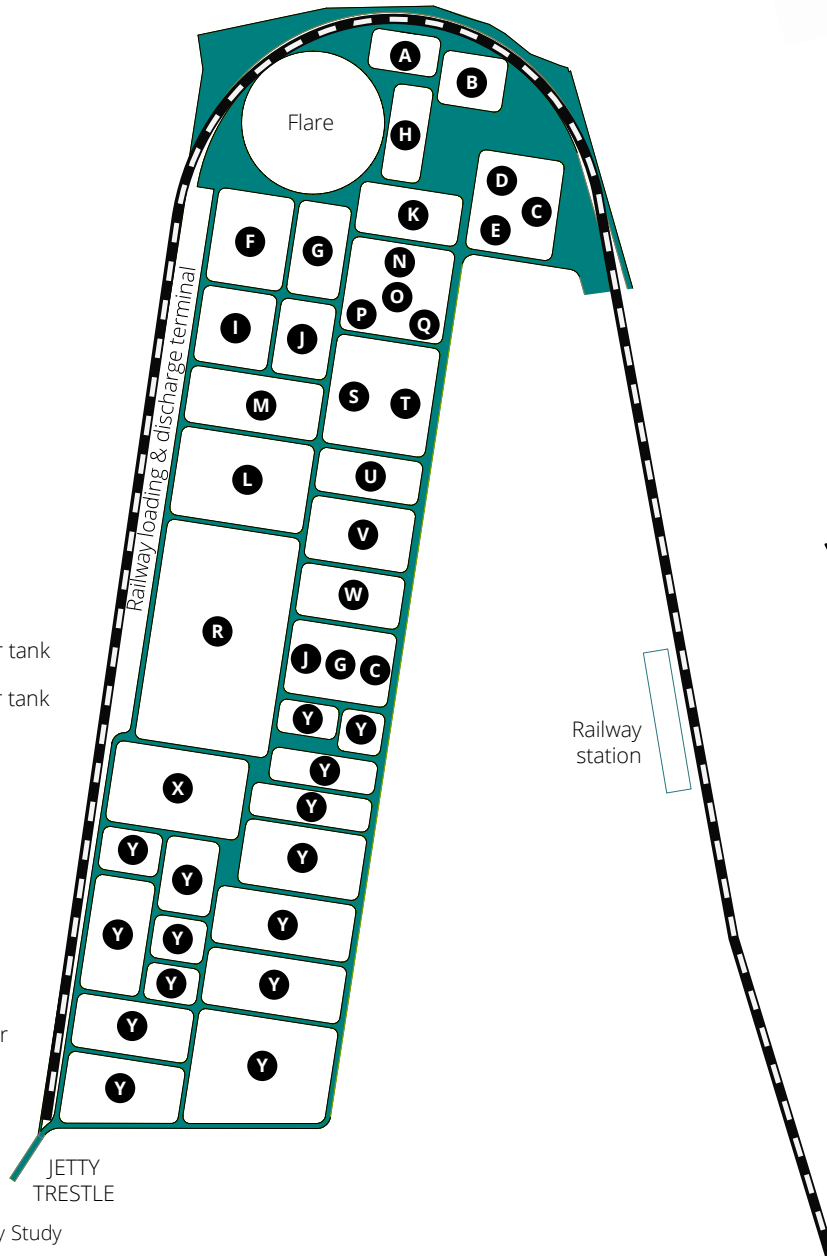
OpEx per tonne



USD 34

The refinery is configured by TR and will have all the infrastructure to independently market its oil products by either railroad or the Black Sea

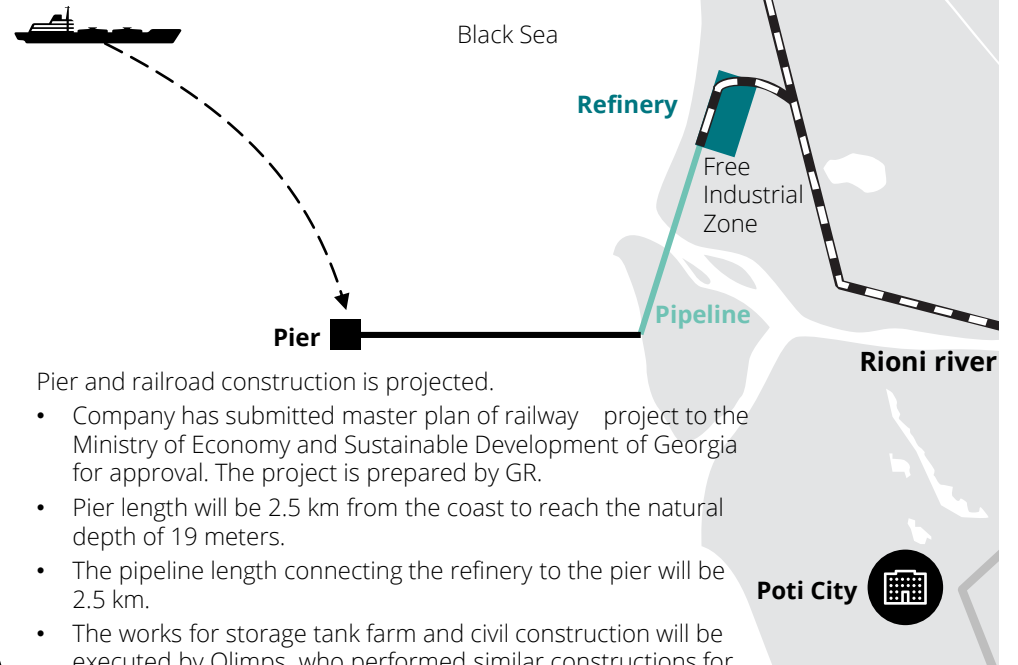
- A** Warehouse
- B** Workshop
- C** Parking
- D** Offices
- E** Food court & Sport
- F** Fire Water Tanks
- G** Control room
- H** Cooling water
- I** 2 generators
- J** Substation
- K** N2 & Air
- L** CCR
- M** Isomerization
- N** Raw & potable water tank
- O** Demineralized water tank
- P** Demiwater plant
- Q** Deaerator
- R** DHT ATM HCU
- S** ARU-SWA-ARU
- T** Dispatching Sulfhur
- U** Gas plant
- V** NHT Naphtha splitter
- W** H2
- X** CDU
- Y** Tank Farm



Refinery scheme is prepared by **TR** it was slightly modified after railway line amendment.

Refinery has **11** process units, **35** tank farm with total capacity of **650,000 m³** and **7** off-sites and utility units.

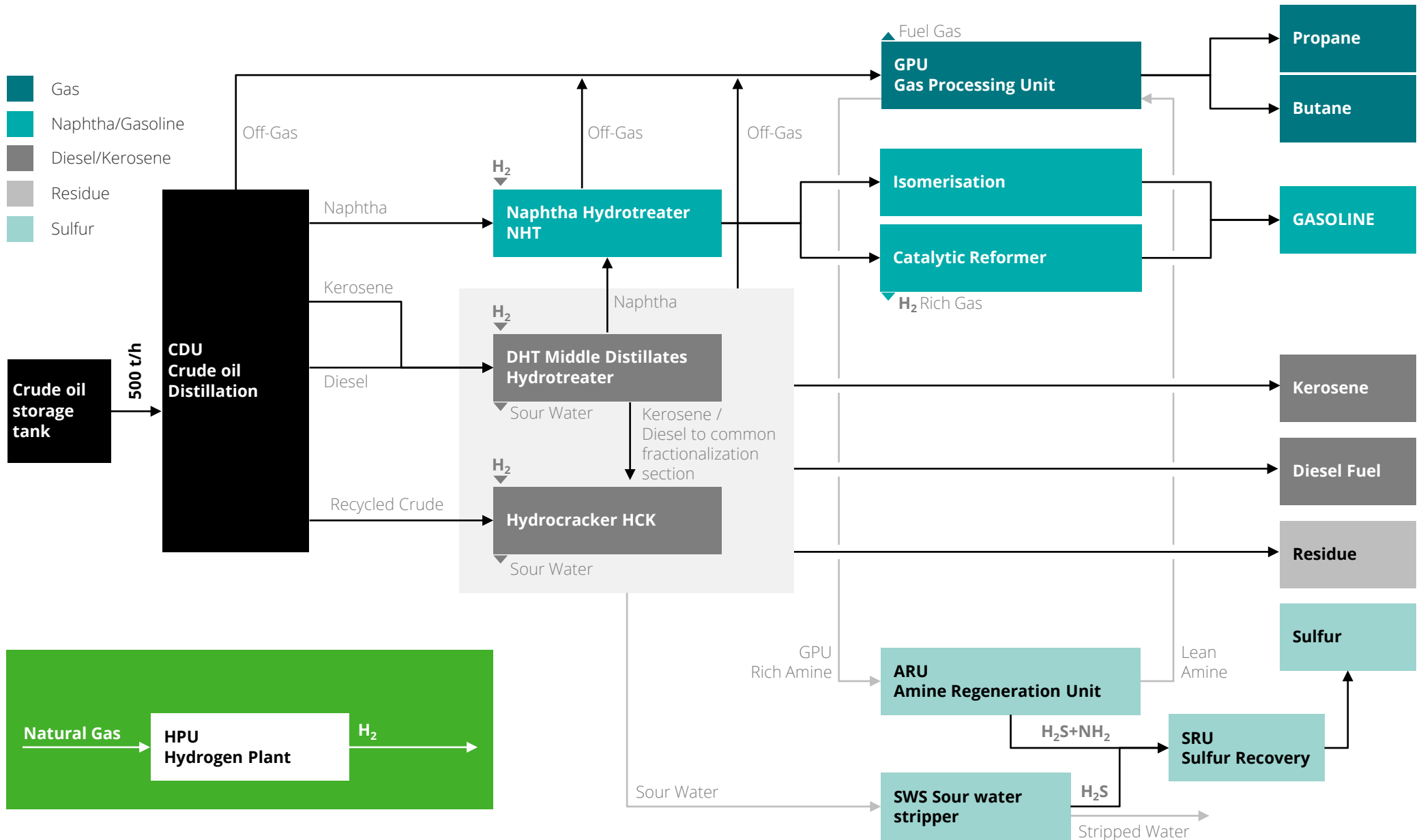
Total number of people employed will be around **400**, out of which **70%** will be local staff.



Pier and railroad construction is projected.

- Company has submitted master plan of railway project to the Ministry of Economy and Sustainable Development of Georgia for approval. The project is prepared by GR.
- Pier length will be 2.5 km from the coast to reach the natural depth of 19 meters.
- The pipeline length connecting the refinery to the pier will be 2.5 km.
- The works for storage tank farm and civil construction will be executed by Olimps who performed similar constructions for the nearby oil terminal of SOCAR.

Production units were selected based on the proposals provided by TR, Shell and Axens

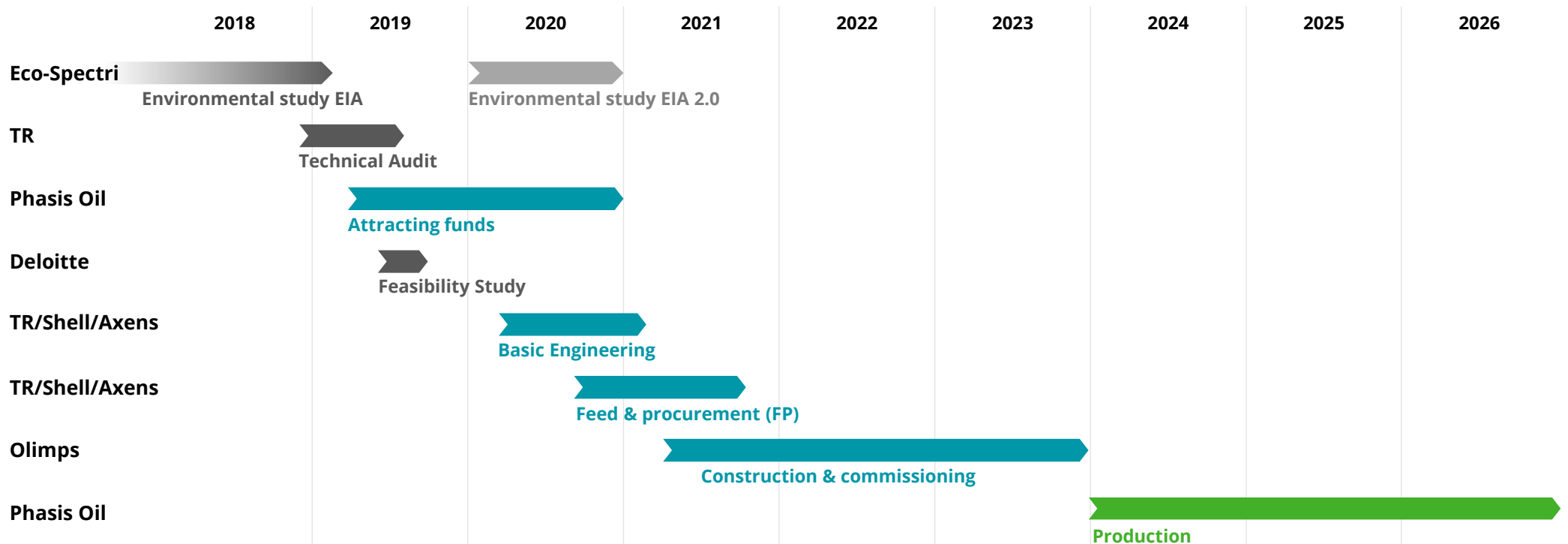


Phasis Oil has strong relationships with the stakeholders required for the Project's success and sustainability



(1) Extended agreement between Government of Georgia and Phasis was signed on 27th of December 2019.
Project Phasis Refinery Feasibility Study – ExSum

The project is structured in a single phase with the first production capacity to be commissioned not later than 4Q 2023



Environmental Study
Eco-Spectri has prepared the environmental impact assessment of Phasis Oil refinery. Ministry has approved the EIA but ordered to develop additional studies before the construction commences. In parallel, Eco-Spectri is developing the English version of the report, but with additional studies, including the "10 Equator Principles".

Technical Audit
TR prepared a two part document: basis of study and project characteristics. Basis of study - based on inputs from technology suppliers such as **Axens and Shell**. Technical characteristics - disclose CapEx, OpEx time schedule and output yields.

Feasibility Study
In July 2019 Deloitte started the Feasibility study project based on technical audit prepared by TR and inputs provided from Eco-spectri.
Attracting Funds
Investment companies will raise funds for Phasis throughout 2020. US\$ 35 mln is expected to be raised by April 2020.

Basic Engineering
Basic engineering phase includes RFP of process design and evaluation phase as well as basic engineering of selected configuration.
FEED engineering and Procurement
This phase includes process simulations, philosophies, plot plan and modelling.

FEED Package Execution
Procurement includes, Requisitions for Quotations, Technology & Bid evaluations. At this stage, detailed engineering is made as well as vendor drawings, deliveries and manufacturing of major equipment units.

Construction and Commissioning also includes, Hydrogen Plant, Isomerization and Reforming units are purchased and installed. Phase consists of construction activities, Pre-commissioning and Mechanical Completion as well as railway and pier construction.

Source: TR Technical Audit : 80058-00-PR-RP-002 Rev.4, Deloitte Analysis, Eco-Spectri Project Phasis Refinery Feasibility Study – ExSum

Phasis plans to supply CPC blend crude oil from Novorossiysk via Aframax tankers and distribute products by sea and railway

1

Tengiz oilfield

CPC is the largest international oil transportation project with participation of Russia, Kazakhstan and world's leading producer companies including Royal Dutch Shell holding 7.5% and Litasco 12.5%.

2

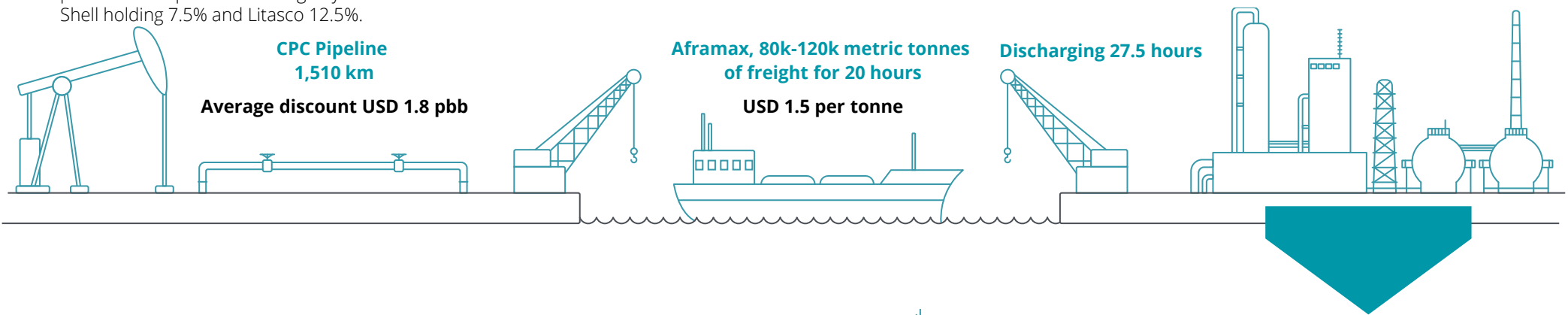
Novorossiysk port

Purchase of crude oil from CPC oil terminal in Novorossiysk on **FOB terms**

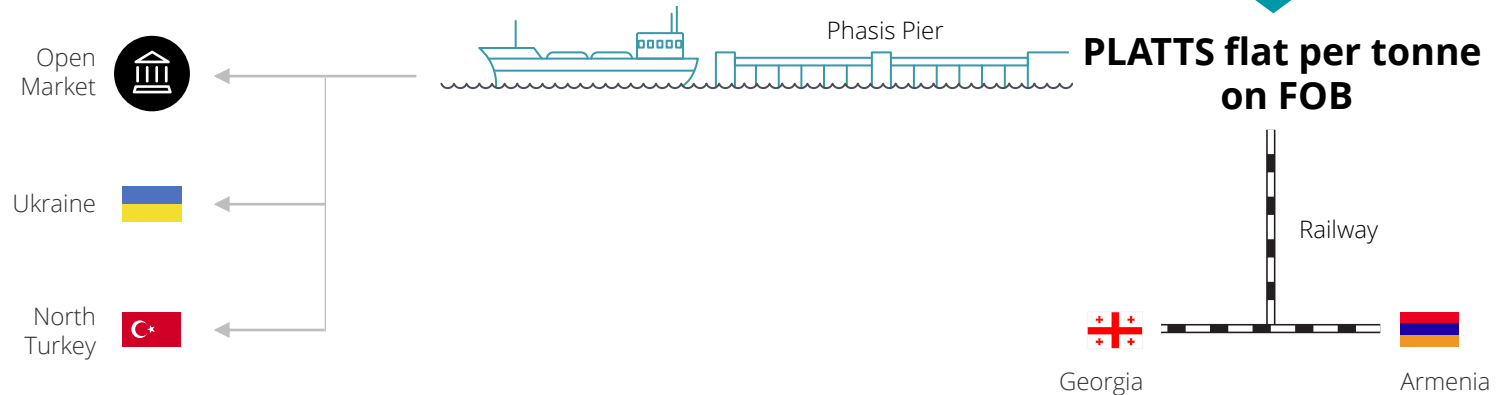
3

Phasis Oil

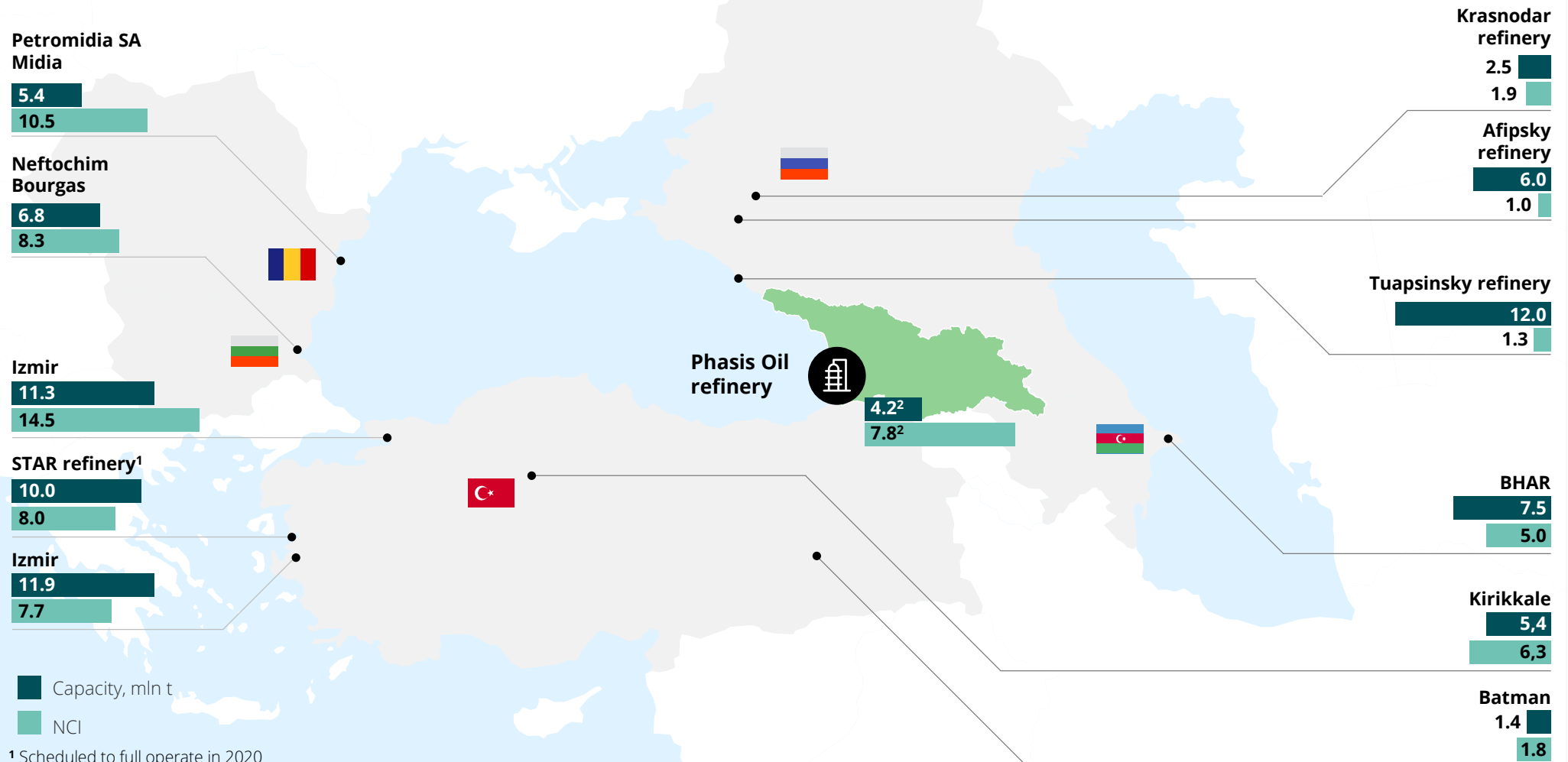
Unloading the oil from Aframax ships
Paying **rental fees for the Aframax by the annual time charter rate of USD 6.2m**



Note: Secondary option of supply is to import light sweet crude oil from Lybia. This option it is not reflected in financial model.

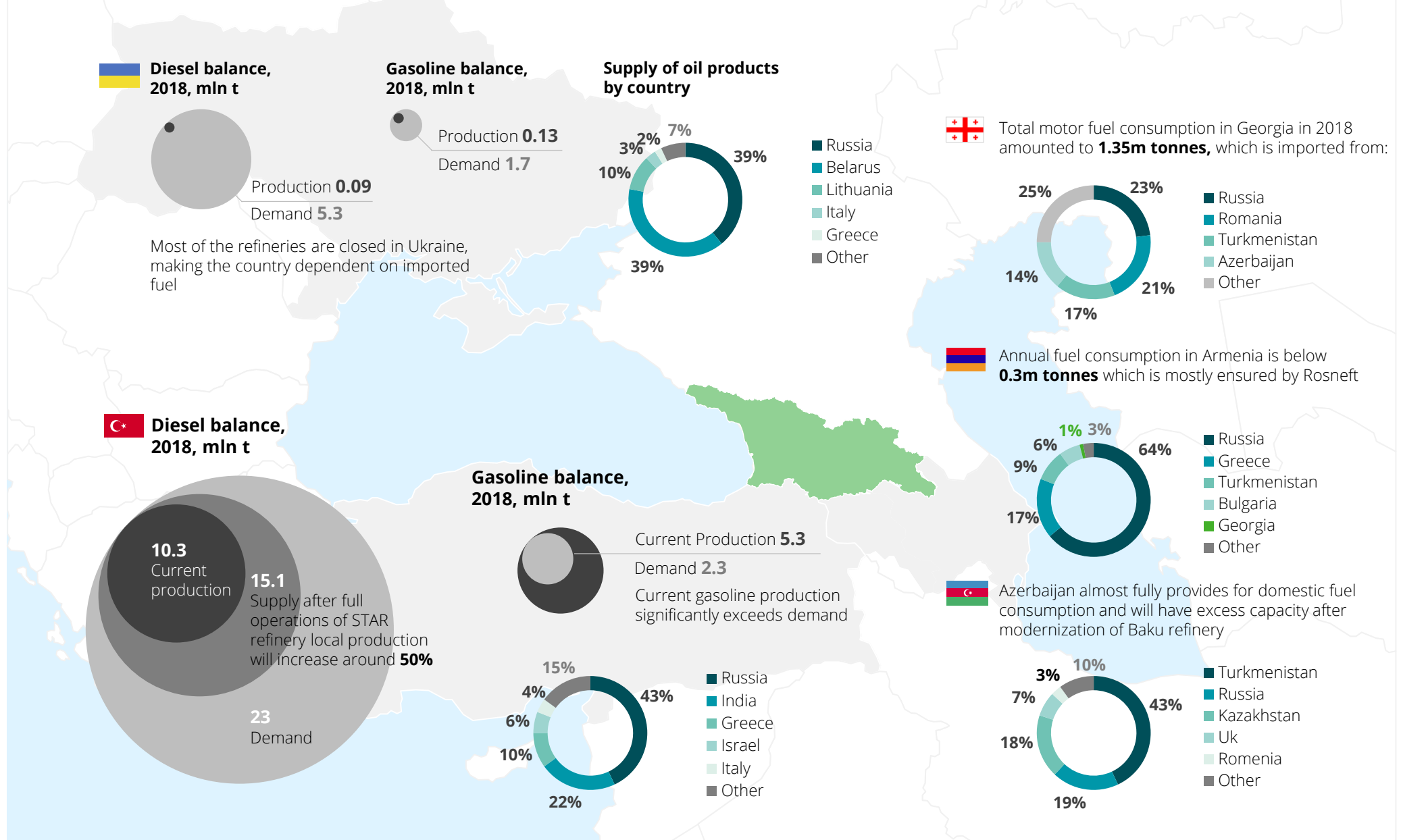


There are 11 refineries in the region, mostly working with heavy oil. Their aggregate capacity is over 50 million tonnes annually



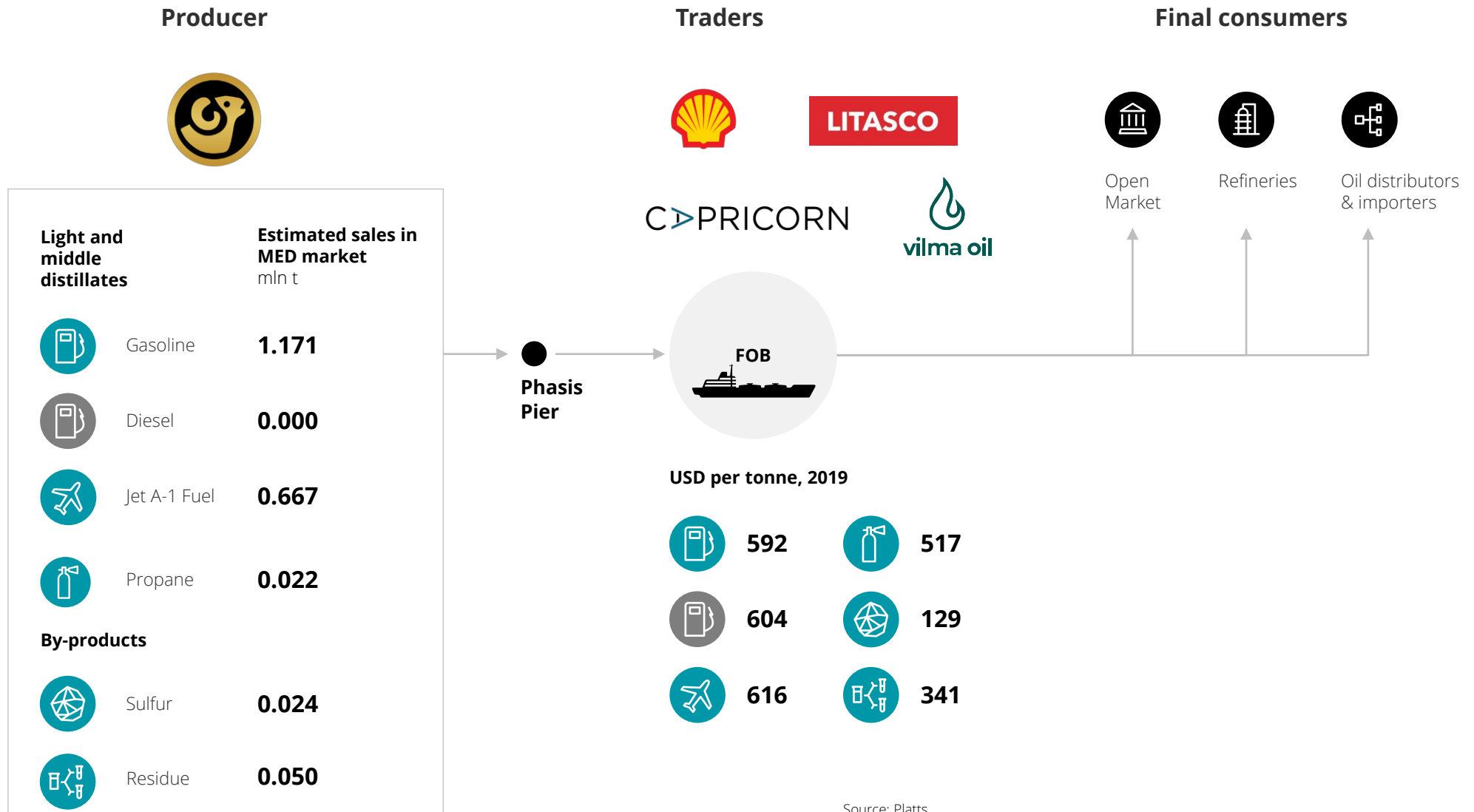
¹ Scheduled to full operate in 2020
² Estimated in technical audit (TR)
 Source: Tupras website

Regional market is ready to absorb 2.2 million tonnes of Phasis oil products



Source: UN Comtrade database, State Statistics Service of Ukraine, Turkish Statistical Institute (Turkstat), State Statistics Service of Ukraine; Deloitte analysis; JodiOil database 2018; STAR Refinery to export USD 500m in petrochemical raw materials per year, Daily Sabah, 2019

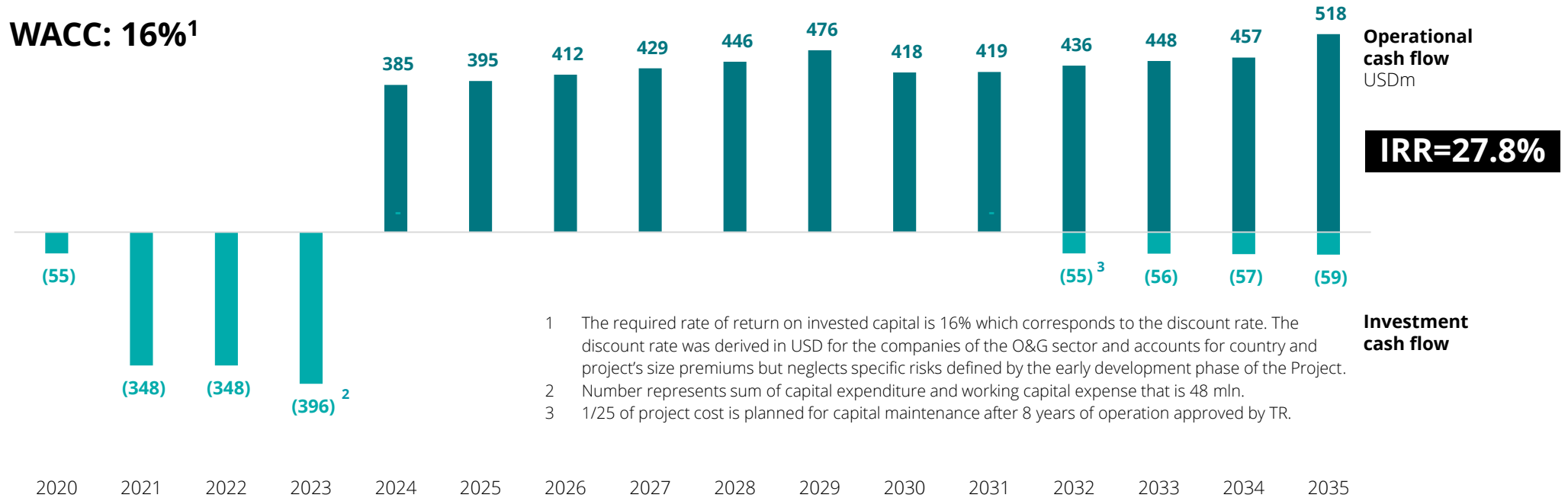
MED can serve an alternative market for Phasis products



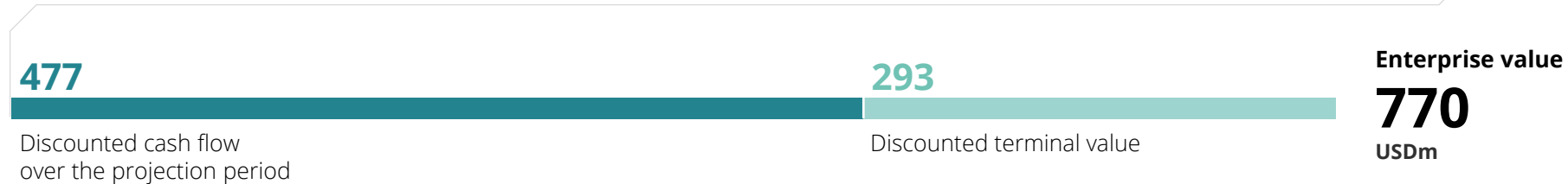
Source: Platts

Based on the Client's inputs and calculation,
the financial model results in Project NPV of USD ~ 770m

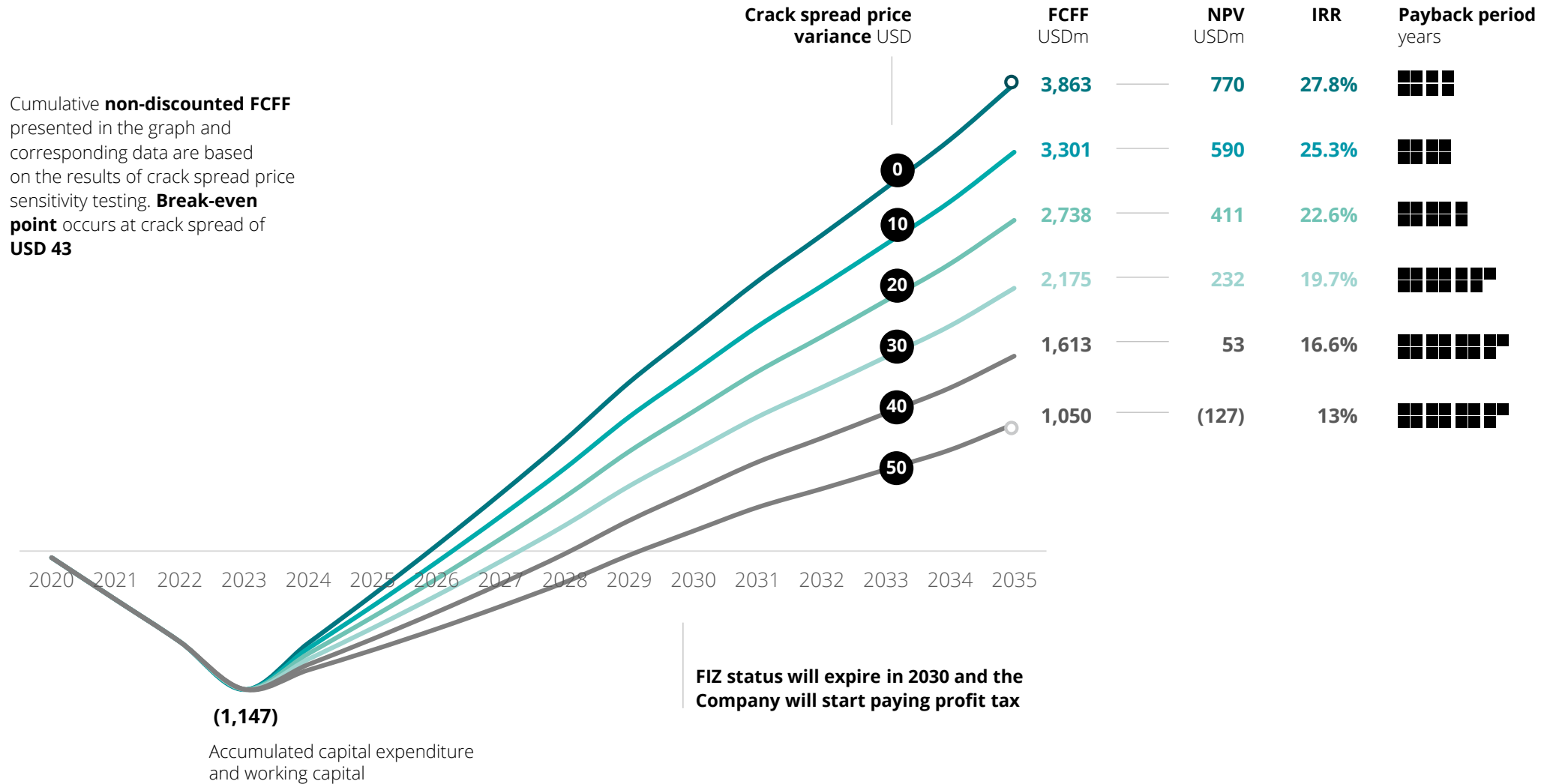
WACC: 16%¹



- 1 The required rate of return on invested capital is 16% which corresponds to the discount rate. The discount rate was derived in USD for the companies of the O&G sector and accounts for country and project's size premiums but neglects specific risks defined by the early development phase of the Project.
- 2 Number represents sum of capital expenditure and working capital expense that is 48 mln.
- 3 1/25 of project cost is planned for capital maintenance after 8 years of operation approved by TR.



Sensitivity analysis shows that the model is highly sensitive to changes in crack spread prices



Project financials plus loans separately add slide

				2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035
P&L																			
Revenue	USDm	Calculation		-	-	-	-	2,997	3,062	3,128	3,196	3,266	3,337	3,404	3,472	3,542	3,613	3,686	3,760
COGS	USDm	Calculation		-	-	-	-	2,536	2,591	2,647	2,705	2,764	2,824	2,881	2,938	2,997	3,058	3,119	3,182
Gross margin	USDm	Calculation		-	-	-	-	461	471	481	491	502	513	523	534	544	555	566	578
<i>Gross margin</i>	%	Calculation		0%	0%	0%	0%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%	15%
<i>Gross margin</i>	USD/t	Calculation		-	-	-	-	110	112	114	117	120	122	125	127	130	132	135	138
Operating costs	USDm	Calculation		-	-	-	-	23	23	24	24	25	25	26	27	27	28	28	29
Property tax	USDm	Calculation	1%	-	-	-	-	-	-	-	-	-	-	-	9	9	9	10	10
EBITDA	USDm	Calculation		-	-	-	-	438	447	457	467	477	487	497	498	508	518	528	539
Government discount	USDm	Client		-	-	-	-	4	4	4	4	4	4	4	4	4	-	-	-
EBITDA adj. for government discount	USDm	Client	10.0	-	-	-	-	433	443	453	463	473	483	493	494	504	518	528	539
EBITDA margin	%	Calculation		0%	0%	0%	0%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%	14%
EBITDA margin	USD/t	Calculation		-	-	-	-	103	105	108	110	113	115	117	118	120	123	126	128
DDA schedule																			
CapEx	USDm	Calculation	4%	55	348	348	348	-	-	-	-	-	-	-	-	55	56	57	59
DDA	USDm	Calculation		-	-	-	-	44	44	44	44	44	44	44	44	45	47	50	52
DCF																			
EBITDA	USDm	Calculation		-	-	-	-	433	443	453	463	473	483	493	494	504	518	528	539
Interest payment	USDm	Client	4.5%	-	-	-	-	47	46	40	33	26	6	-	-	-	-	-	-
EBT				-	-	-	-	386	396	413	430	447	477	493	494	504	518	528	539
Investment in capex & NWC																			
CapEx	USDm			55	348	348	348	-	-	-	-	-	-	-	-	55	56	57	59
Change in WC	USDm	Calculation			-	-	48	1	1	1	1	1	1	1	1	1	1	1	(60)
Cash flow before profit distribution				(55)	(348)	(348)	(396)	385	395	412	429	446	476	492	493	448	461	470	540
Profit tax	USDm	Calculation	15%	-	-	-	-	-	-	-	-	-	-	74	74	67	69	70	81
FCFF				(55)	(348)	(348)	(396)	385	395	412	429	446	476	418	419	381	392	399	459
Discount factor	ind	Calculation		0.93	0.80	0.69	0.60	0.51	0.44	0.38	0.33	0.28	0.24	0.21	0.18	0.16	0.14	0.12	0.10
Discounted FCFF				(51)	(279)	(240)	(236)	198	175	157	141	126	116	88	76	60	53	47	46
DCF	USDm																		
Terminal value	USDm																		
NPV	USDm																		
IRR																			
Payback period	Years																		

Sample of “Free Cash Flow to Firm” distribution

Non-discounted free cash flow distribution is developed for illustrative purposes. Financial structure, shares, grace period, dividends payment and other inputs are based on Phasis Oil and their financial advisor providers.

**DRAFT SAMPLE for
Illustrative purposes**

			2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	TV
Reserves		Share	Non-discounted CF																			
Reserves for maintenance – 4% from EBT			225	-	-	-	-	-	15	16	17	17	18	19	20	20	20	21	21	-	-	-
Debt – 60%		in Debt																				
Syndicate – 1% ¹			7	-	-	-	-	-	-	7	-	-	-	-	-	-	-	-	-	-	-	-
Bank Sample – interest rate 4.5% ²																						
Loan			(688)	(33)	(209)	(209)	(238)	-	-	-												
Loan re-payment ³			688	-	-	-	-	-	-	138	138	138	138	138	-	-	-	-	-	-	-	-
Interest payment ⁴			199	-	-	-	-	47	46	40	33	26	6	-	-	-	-	-	-	-	-	-
Cash Flow to banks			199	(33)	(209)	(209)	(238)	47	46	177	171	164	144	138	-	-	-	-	-	-	-	-
Equity – 40%		In Equity																				
IFI option ⁵	15%		201	(3)	(21)	(21)	(24)	-	-	-	41	44	48	138	-	-	-	-	-	-	-	-
Shareholders' equity ⁶	25%		950	(5)	(35)	(35)	(40)	-	-	-	68	73	80	100	100	90	93	95	109	86 ⁷	86	86
EPC contractor	10%		380	(2)	(14)	(14)	(16)	-	-	-	27	29	32	40	40	36	37	38	44	34	34	34
Mezzanine finance	50%		1,901	(11)	(70)	(70)	(79)	-	-	-	137	145	160	199	200	180	185	189	219	172	172	172
Terminal value			2,913	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-2,913
Cash flow to equity			6,346	(22)	(139)	(139)	(158)	-	-	-	274	290	319	476	339	306	315	321	372	293	293	293
Free Cash Flow to firm plus Terminal Value non-discounted		6,776																				

Notes:

- 1 Interest (%) for syndicate loan paid once on the total loan amount
- 2 All banks under syndicate use similar loan interest rate
- 3 Expected grace period for loan re-payment is 5 years
- 4 Interest payments accumulated are paid in the following periods
- 5 A Put option will not be exercised before the interest payments
- 6 Grace period for the payment of dividends ends one year after the start of payment of the loan amount
- 7 Deferred dividends are paid in recent times

The 10 Equator Principles

The 10 Equator principles are not required by the law of Georgia and it was not covered in the EIA study. Though all principles except for grievance mechanism and stakeholder engagement are similar by context to the country requirements and partially described, it is still structured differently due to the varied standards applied.

Eco-Spectri is now developing a new EIA document for the government of Georgia. In parallel, they are developing English version of the report but with additional studies including the 10 Equator Principles analysis. These two documents will be slightly different as GOG does not require this additional researches in the study.

The document is expected to be developed by April 2020 and submitted to the relevant authorities.

**Review and
Categorization**



**Reporting and
Transparency**



**Independent
Monitoring
and
Reporting**



Covenants



**Independent
Review**



**10 Equator
Principles**

**Environmental
and Social
Assessment**



**Applicable
Environmental
and Social
Standards**



**Environmental
and Social
Management
System and
Equator
Principles
Action Plan**



**Grievance
Mechanism**



**Stakeholder
Engagement**



Disclaimer

- The information presented in this document (hereinafter - the "ExSum") has been prepared by Deloitte & Touche LLC (hereinafter - "Deloitte" or "Consultant") for Phasis Oil LLC (hereinafter - the "Client" or "Phasis Oil") based on the condensed information in the deliverable for engagement "Oil market review and feasibility study for the Poti refinery plant".
- The purpose of this ExSum is to provide interested parties with high-level background information on the project to develop a crude oil refinery near Poti (hereinafter - the "Project").
- We were instructed to analyze the Client's documents as well as external reports made available to us with a primary focus on the review of the Project's assumptions, market conditions, technical parameters, capital expenditure requirements, and economic drivers. We also examined the financial model and conducted a sensitivity analysis of the major risks.
- **The Presentation is not intended as the basis for the final decision on participation in the Project and may not be considered as our recommendation to invest. When making this investment decision, investors must rely on their own expertise and take into account Georgia-specific investment risks.**
- Our findings are based on the information provided to us by the Client, Técnicas Reunidas (TR), Eco-Spectri, industry experts, specialized agencies and public sources as of **17 January 2020**.
- The Consultant makes no representations, warranties or liabilities (whether expressed or implied), nor assumes any liability as to the completeness or reliability of the Presentation or any additional information, notices or other documents any time, provided in the case of the sale of shares of the Client.



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