

Ghana's Oil & Gas Sector Report

November 2022

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01

Why invest in Ghana

Why invest in Ghana

Country overview

- Formerly known as the Gold Coast, Ghana was the first sub-Saharan nation to gain independence from colonial rule in 1957.
- Ghana is credited as being one of the most stable democracies in Africa, having successfully conducted 8 national elections and recorded no incidence of a coup d'état since 1992.

Airports



- 1 international airport
- 5 domestic airports

Railway



- 3 major railway networks with a total track length of 1,300 km

Dry ports



- Tema Port
- Takoradi Port

Road network



- Main roads: 67,291 Km
- Main arteries : 12,800 Km
- Paved roads: 3,800 Km

Internal infrastructure

Total land area

Overview: Ghana has total land area of 238,537 sq.km

Ghana has 16 administrative regions and 261 district assemblies.

Electricity supply

- Ghana's electricity supply is derived from hydropower generated from the Akosombo, Bui Power and Kpong dams, and 10 thermal plants at Aboadze in Western Region.
- According to World Bank, Ghana has an 86.63% (2021) access to electricity.

Water supply

Water is provided to citizens through the Ghana Water Company Limited, Community Water and Sanitation Agency and private water producers.

Locational advantage

- Ghana is geographically closer than any other country to the center of the earth.
- Ghana has 2 harbors with one being the largest in West Africa, making Ghana the gateway to West Africa.



Why invest in Ghana

Investment attractions

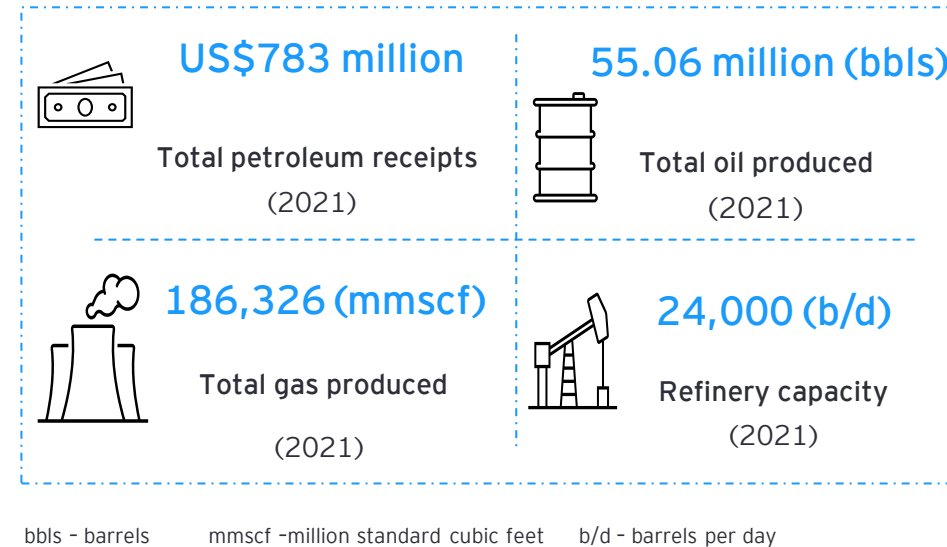
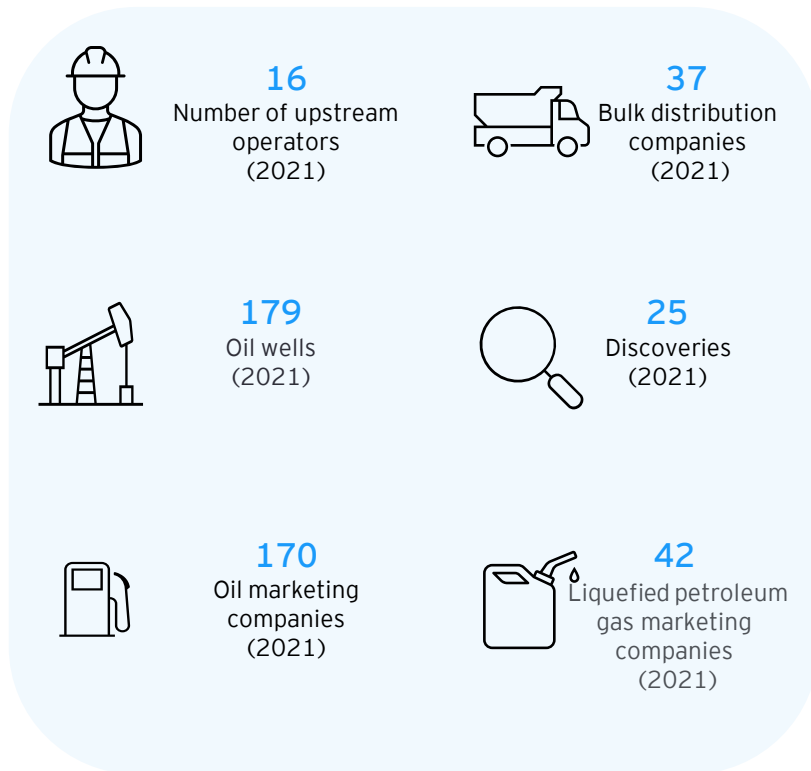
2nd largest economy in West Africa <ul style="list-style-type: none"> Ghana has an active retail market and healthy consumption levels. Fitch reports, household spending is expected to increase from US\$55bn in 2021 to USD81bn in 2025. AfCFTA presents an opportunity for intra-regional growth by leveraging access to common markets and knowledge transfer through labour mobility, thereby attracting foreign direct investments into the region. The AfCFTA secretariat is located in Ghana. 	Rich in natural resources <ul style="list-style-type: none"> Ghana was the largest (No.1) producer of gold in Africa and 6th largest in the world in 2021. 13,000 metric tonnes of manganese reserve. 16.86 million tonnes of high-grade trihydrate bauxite mined since 1997. Newly discovered deposits of lithium in 2021 amounting to 30.1million tonnes, setting Ghana up to become West Africa's first lithium producer. 	Preferred tourism destination <ul style="list-style-type: none"> International arrivals of tourist increased from 932,579 in 2016 to 1,130,307 in 2019, however 2020 saw a reduction to 355,108 due to lockdown measures in response to Covid -19. As at September 2021, international tourist arrivals increased by 18% while domestic tourists grew by 58%. 	Youthful population <ul style="list-style-type: none"> Ghana is blessed with a very youthful population, about 67% of the population is within the ages of 15 to 64 years. Government initiative such as free basic and secondary has ensured a 69.8% literacy rate for citizens who are 6 years and older as at 2021.
Stable political environment <ul style="list-style-type: none"> Ghana is ranked the second most peaceful country in Africa and the 38th most peaceful country in the world as per the 2021 Global Peace Index. Due to provisions made in the constitution of Ghana (article 20) and Free Zones Act (Act 504) there is a reduced threat of nationalism of private businesses. 	Investor-friendly government initiatives <ul style="list-style-type: none"> Government has initiated a plethora of incentives to ensure a conducive and enabling business environment. Government incentives include tax holidays, rebates, provision of industrial parks, provision of finance through partnering agencies and interest subsidies. Ghana has double taxation agreements with the United Kingdom, South Africa and other EU countries. 	Top investment destination <ul style="list-style-type: none"> Foreign Direct Investment (FDI) has averaged \$2.72b from 2017 to 2021, suggesting stability in the inflow of capital with investment focus in oil and gas, mining (including gold and manganese), and agriculture (cocoa). Ghana attracted US\$2.65bn in FDI inflows in 2020, one of the highest amount in West Africa. 	Agrarian economy <ul style="list-style-type: none"> Ghana is endowed with vast arable lands rich in agriculture. In 2020, Ghana was the 2nd largest producer of cocoa in the world, the 4th largest producer of cassava in the world. Ghana is blessed with fertile land for the production of maize, tomato, rice among many other food crops.

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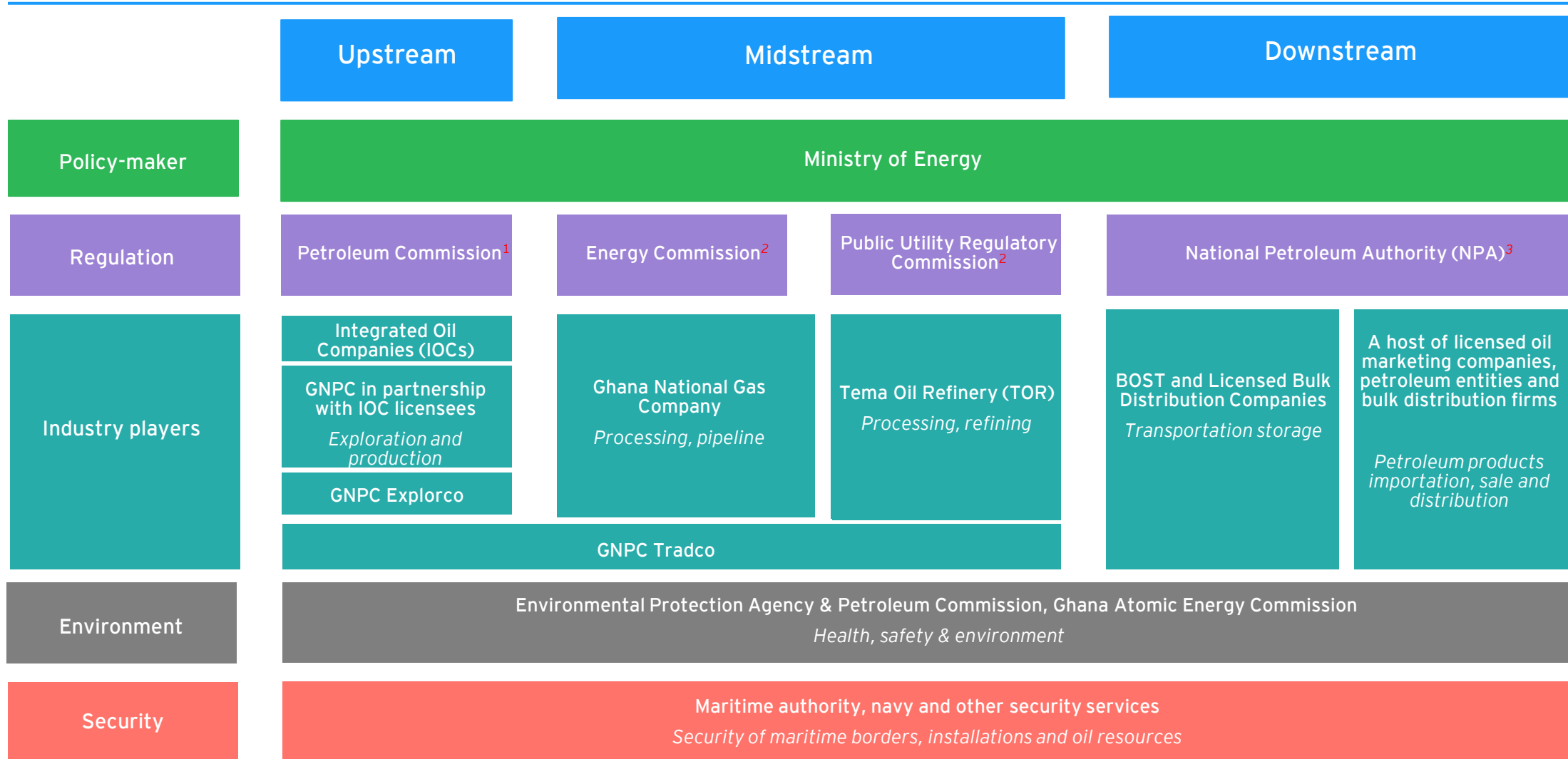
Sector overview

Sector overview: A snapshot of Ghana's oil and gas infrastructure

- Ghana is an emerging oil and gas producer with enormous potential; the oil and gas sector has witnessed significant growth since the discovery of oil in commercial quantities in the Jubilee fields in 2007.
- As of 2020, Ghana had three major offshore oil and gas fields namely, Jubilee, Tweneboa Enyera Ntomme (TEN), and Sankofa-Gye Nyame, which produced a combined total output of 55.06 million barrels in 2021.



Sector overview: Oil and gas industry structure



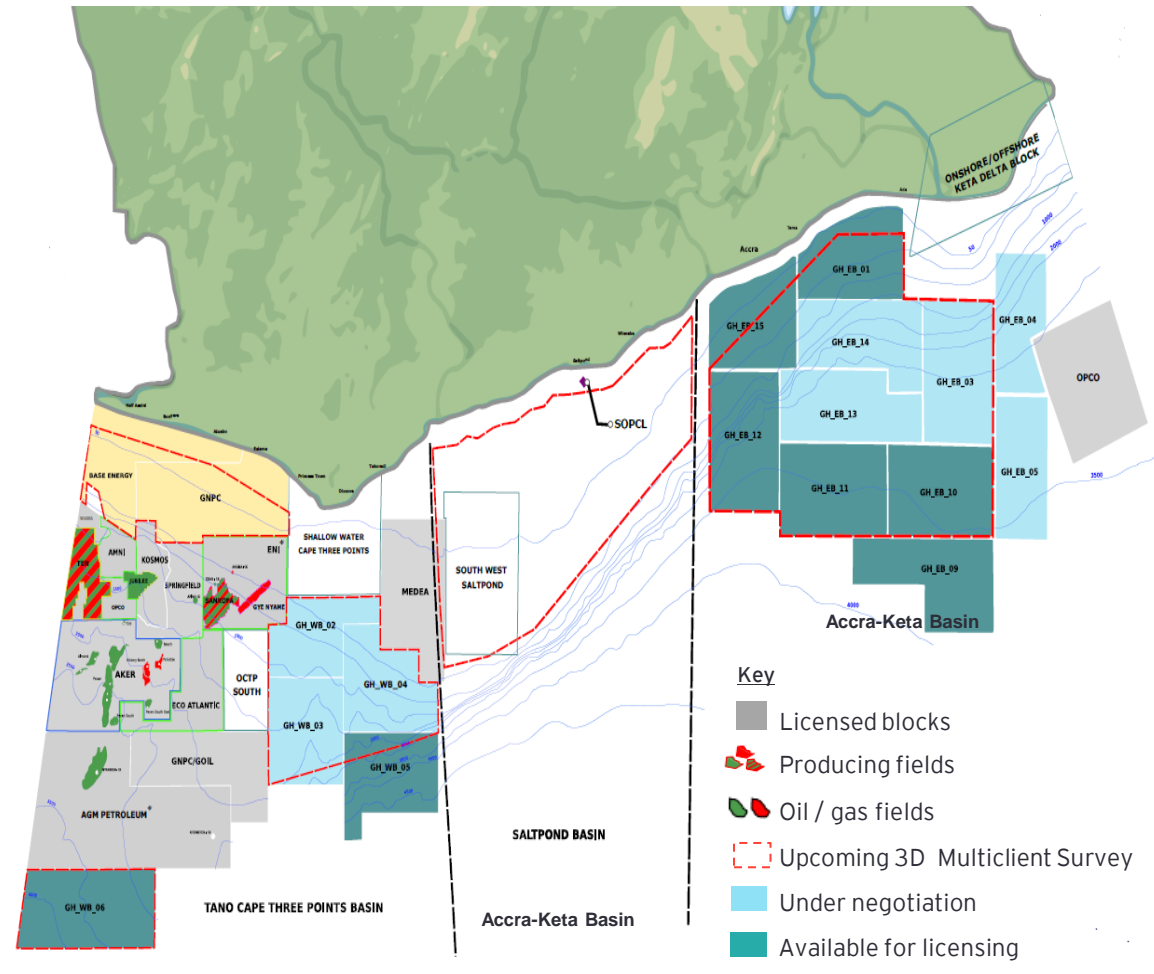
¹Upstream regulator, ²Commercial regulator, ³Downstream regulator

Sector overview: Upstream sub-sector

The upstream sector involves deep-water exploration and extraction of oil and gas. Currently, there are 17 oil blocks in Ghana, please see details below;

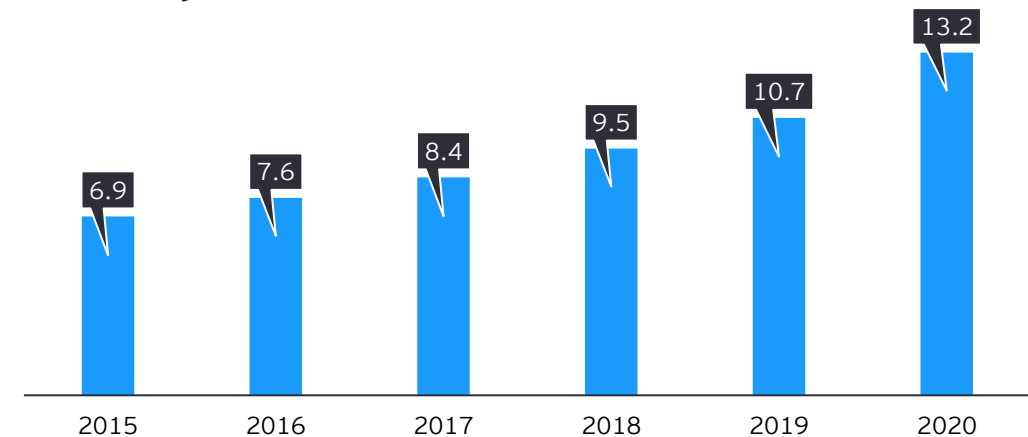
	Block	Operator
1	West Cape Three Points	KOSMOS
2	Deep Water Tano	TULLOW
3	Offshore Cape Three Points	ENI
4	Deep Water Tano/Cape Three Points	HESS
5	Central Tano	SALTPOND OFFSHORE PRODUCING COMPANY LTD
6	Expanded Shallow Water Tano	
7	Shallow Water Cape Three Points West	CAMAC ENERGY
8	South West Saltpond	SAHARA
9	Deepwater Cape Three Points West	Brittania-II Nigeria Limited
10	East Keta	ECO ATLANTIC
11	Offshore South West Tano	HERITAGE
12	Offshore Cape Three Points South	
13	East Cape Three Points	UP
14	South Deepwater Tano	MEDEA
15	West Cape Three Point Block 2	agm
16	Cape Three Point Block 4	Springfield
17	Onshore/offshore Keta Block	ENI

2022 offshore activity and opportunities map

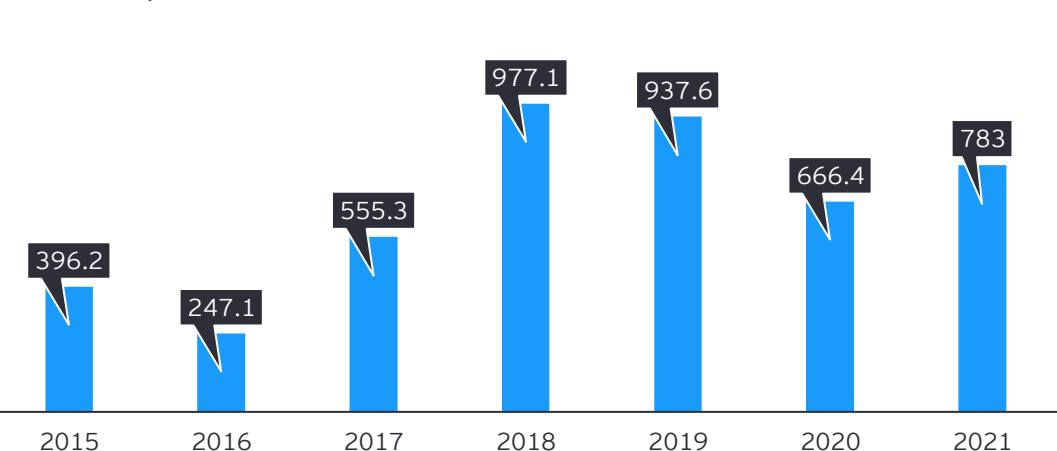


Sector overview: Historical performance of the upstream sub-sector

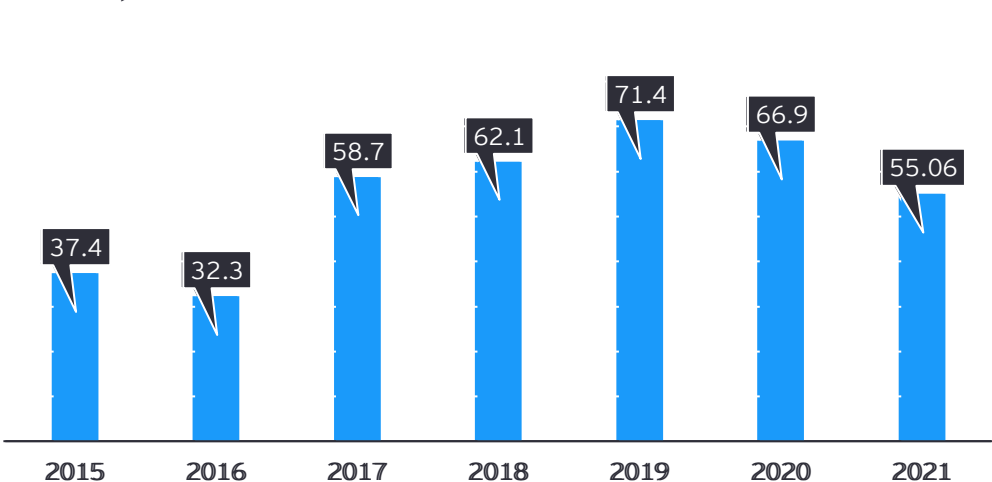
Total oil and gas contribution to GDP (%)



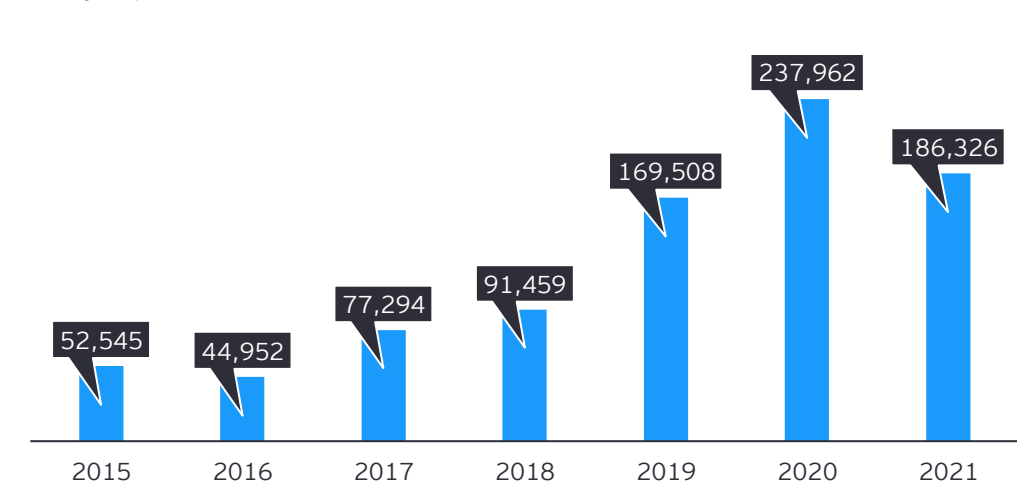
Total receipts (US\$' millions)



Total oil production (bbls' millions)

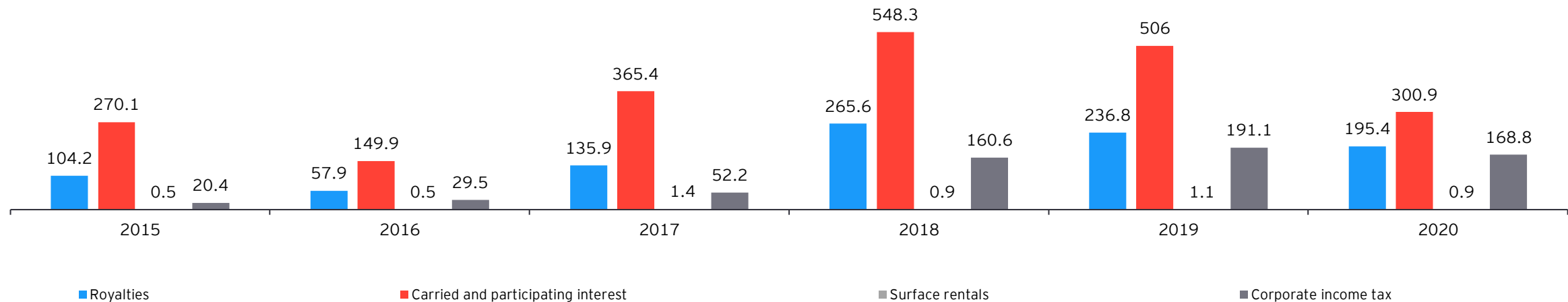


Total gas production (mmscf)

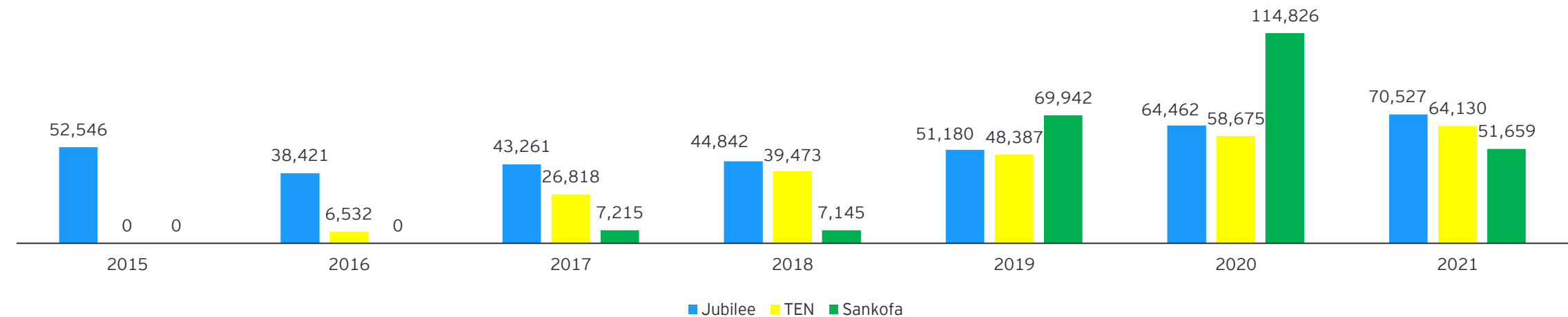


Sector overview: Historical performance of the upstream sub-sector

Total revenue per stream (US\$' millions)



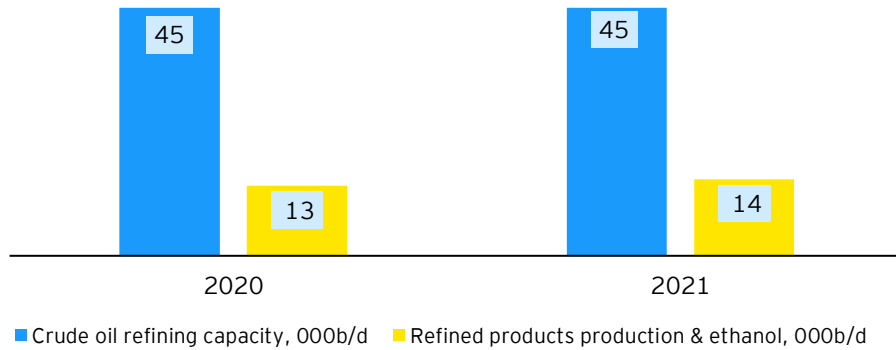
Total gas production from Jubilee, TEN, and Sankofa (mmscf)



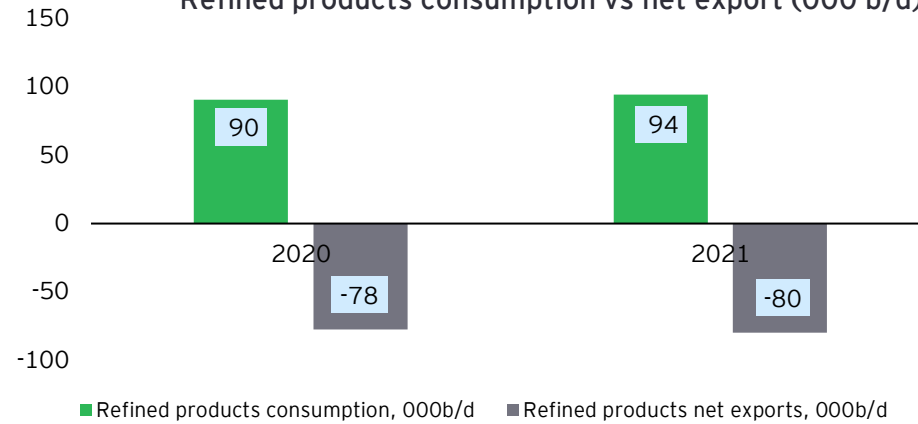
Sector overview: Midstream sub-sector

- Ghana's midstream industry is still in the developing stage. The country's sole oil refinery, Tema Oil Refinery (TOR), has an operational capacity of 45,000 barrels per day (bpd). However, operational challenges have since reduced its capacity to 24,000 bpd on average.
- Given the limited refining capacity in the West African region, majority of Ghana's refined fuel imports are drawn from countries such as Italy, Netherlands, and United Arab Emirates (UAE).

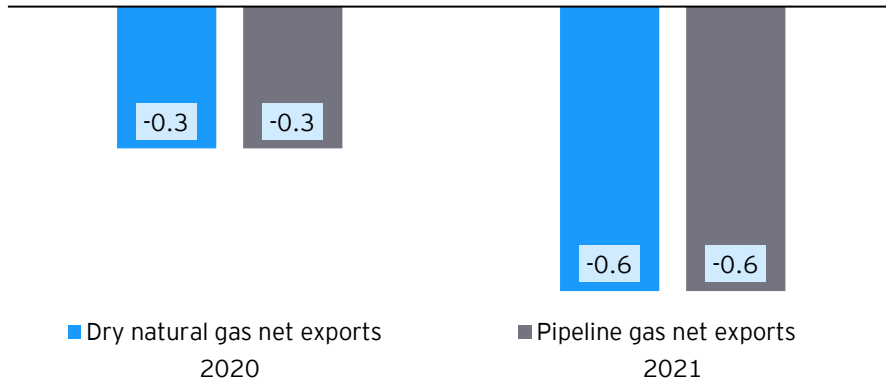
Refinery capacity vs refined production (000 b/d)



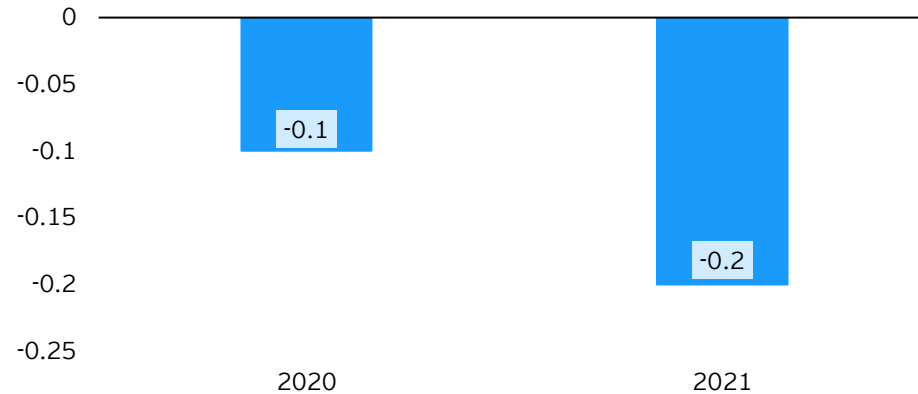
Refined products consumption vs net export (000 b/d)



Gas net export trade (bcm)



Dry natural gas net exports (US\$ billions)



Midstream participants



West African Gas Pipeline Company



Tema Oil Refinery

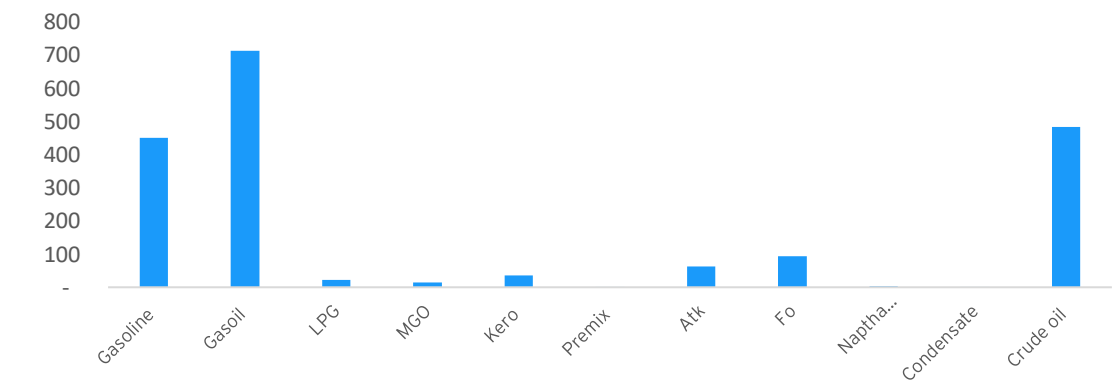


Ghana National Gas Company

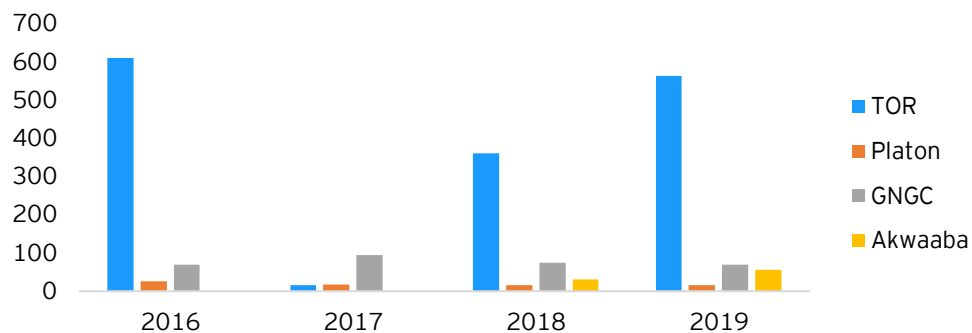
Sector overview: Downstream sub-sector

The downstream industry activities consist of the distribution, marketing of petroleum products by bulk distribution companies (BDCs) and oil marketing companies (OMCs), as well as pre-mixing of petroleum products for other industrial uses.

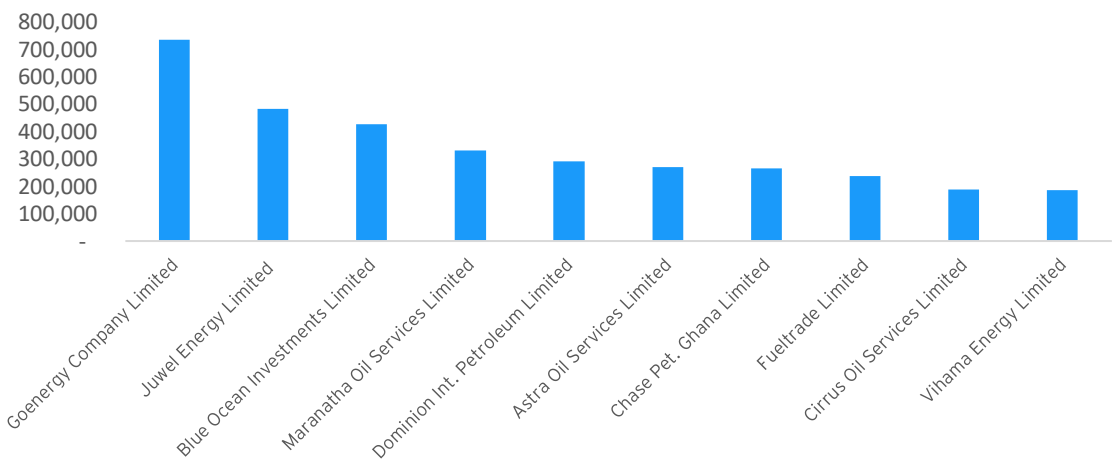
Total storage capacity per fuel type (mt'000) - 2020



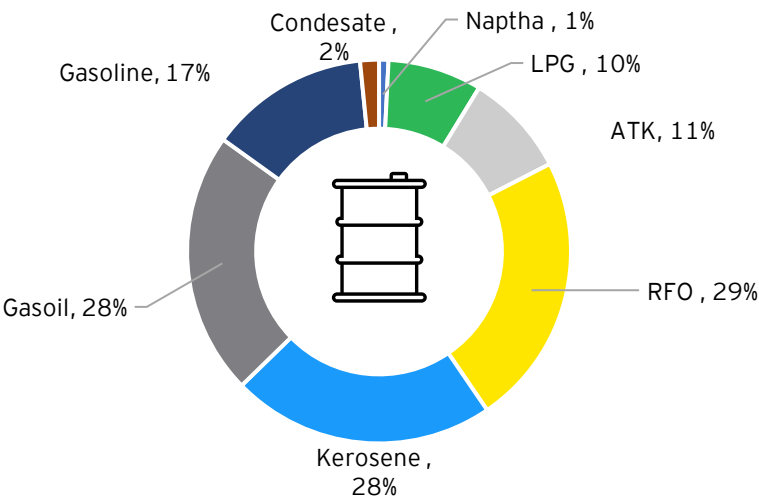
Total refinery output (mt'000s) - 2019



Top BDCs (mt'000) - 2021



Refinery output - 2019



Key developments

Impact of Covid-19

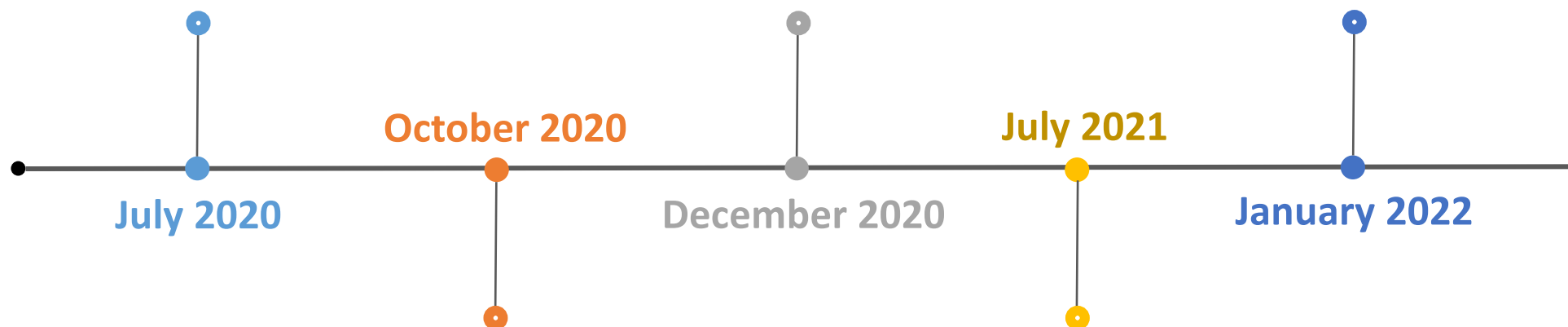
- Ghana National Petroleum Corporation indicated that international oil companies had halted operations, citing the negative impact of the Covid-19 pandemic.

Exploration of Keta Basin

- Ghana's Petroleum Commission approved a 10-month programme to acquire 14,000sq km of 3D seismic data over Ghana's offshore Keta Basin.
- The survey is expected to be completed in 2022.

Exploration of Voltaian Basin

- A 2D seismic survey in the Voltaian Basin was commenced by Ghana National Petroleum Corporation to gather information over the area.



Petroleum hub project

- Ghana's parliament passed into law a bill proposing the establishment of Petroleum Hub Development Corporation.
- The project includes four refineries, two oil jetties, crude oil storage tanks and two petrochemical plants.

Developments in the Cape Three Points area

- Eni announced that it had made a significant oil discovery on the Eban prospect in Cape Three Points Block 4.
- The company estimates the potential of the Eban-Akoma complex to be between 500 and 700 Mboe¹ in place.

Overview of key players - Upstream

	Kosmos Energy		Ghana National Petroleum Corporation		Tullow Oil plc
	Sahara Group		Eni S.p.A.		Springfield Group
	Aker Group		AGM Petroleum Ghana Limited		Vitol Upstream Ghana Limited

Overview of key players - Downstream (bulk distributors)





	Sahara Group		Ebony Oil and Gas Limited		Misyl Energy Company Limited
	Blue Ocean Investments Company Limited		Maranatha Oil Services Limited		Chase Petroleum
	Juwel Energy Limited		Sage Petroleum Limited		Astra Oil Services Limited
	Vihama Energy Company Limited		Eagle Petroleum Company Limited		Wi Energy

Overview of key players - Downstream (oil marketing companies)

	Puma Energy		GOIL Company Limited		Vivo Energy Ghana
	Star Oil Company Limited		Quantum Petroleum Limited		Santol Energy Ghana Ilc.
	Frimps Oil Company Limited		Engen Ghana Limited		Champion Oil Company Limited
	Total Petroleum Ghana plc		Radiance Petroleum Limited		Allied Ghana

Regulatory overview

- ▶ Ghana's upstream sector is regulated by the Petroleum (Exploration and Production) Act, 2016 (Act 919), which was introduced to replace the Provisional National Defence Council Law (PNDCL) 84 to ensure upstream petroleum activities are executed in a safe and efficient manner and ensure Ghana derives optimal benefit from the exploitation of petroleum resources.
- ▶ Ghana's downstream industry is regulated by the National Petroleum Authority (NPA). This authority was established by an act of parliament; NPA Act 2005, Act 691 to ensure efficient, profitable fair industry operations while ensuring value for money for consumers.

Regulatory agency	Scope of activity	Responsibilities	Nature of activity		
			Oversight function	Inspection/ licensing	Policy-making
	Ministry of Energy	General	<ul style="list-style-type: none"> Creates, implements, monitors, and assesses energy sector policies. Develops and ensures a reliable, high-quality energy service at the lowest possible cost. 	✓	✓
	Petroleum Commission Ghana	Upstream	<ul style="list-style-type: none"> Oversees and controls the use of petroleum resources, as well as coordinate policies in the upstream petroleum sector 	✓	✓
	National Petroleum Authority	Downstream	<ul style="list-style-type: none"> Regulates the petroleum downstream industry in Ghana as well as coordinate the policies 	✓	✓
	Ghana National Petroleum Corporation	Upstream	<ul style="list-style-type: none"> Leads the sustainable exploration, development, production and disposal of the petroleum resources of Ghana, by leveraging the right mix of domestic and foreign investments. 	✓	✓

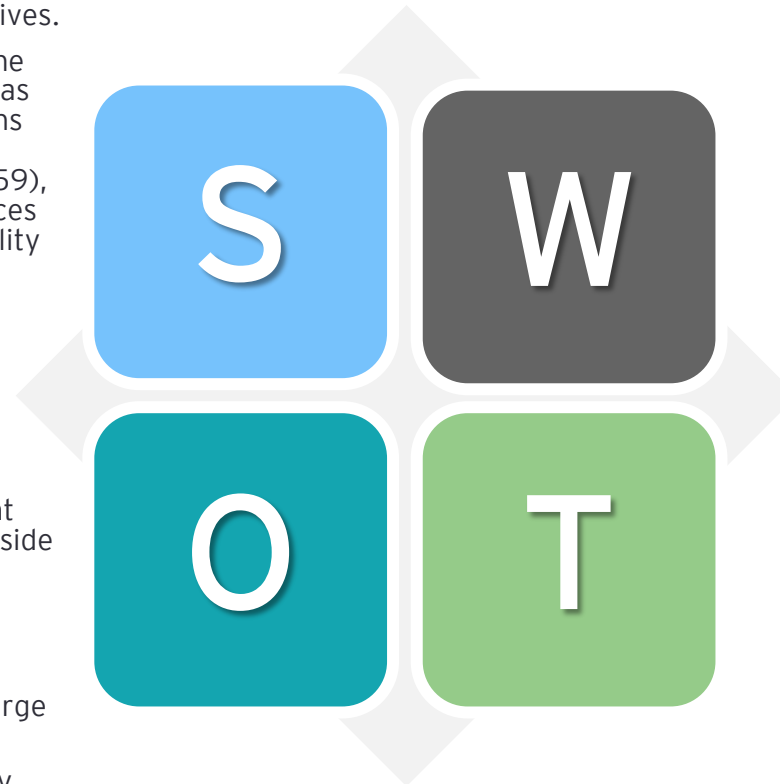
Sector SWOT analysis

Strengths

- Ghana boasts an attractive pro-business climate supported by investment guarantees and incentives.
- The industry is highly regulated, evidenced by the introduction of key regulations and bodies such as the Petroleum Revenue Management Regulations (2019) and the Petroleum (Exploration and Production) (General Regulations) 2018 (LI 2359), to ensure that investments are protected, services are rendered in the safest environment and quality output are sold to customers.

Opportunities

- The approval of the Petroleum Hub Development Corporation project by Government provides upside potential as it aims to develop 3 refineries, 5 multipurpose petrochemical plants, tank farms, jetties and improved port infrastructure.
- There exists significant prospective and under-explored acreage that could potentially house large oil fields.
- Consumption of domestic fuels and gas is rapidly increasing as population size and urbanization continue to grow.
- Alternative gas flaring solutions to players in the oil and gas industry.



Weaknesses

- Though Ghana is a significant oil producer, it still imports refined oil and gas due to a lack of sufficient downstream value-added operations in areas such as refinery.
- The industry is mostly dominated by major international players. This is due to the fact that domestic Ghanaian companies do not mostly have the capacity to provide broad range of services despite local content requirements mandating a minimum level of local participation.
- Major infrastructure projects face frequent technical issues primarily due to the low level of technical expertise.

Threats

- The industry is not insulated from global shocks such as pandemics, as supply chain disruptions lead to major operational inhibitions in the sector.
- The industry's heavy dependence on crude oil may pose a risk to its sustainability as western nations shift towards renewable energy



03

Sector opportunities

Sector opportunities

Provision of an independent power plant

- Oil and gas extraction requires the use of sophisticated and specialised equipment. These equipment require enormous and continuous power supply for the purpose of extracting and producing oil.
- The industry will benefit from investment in independent power supply to boost productivity.

Investment in Petroleum Development Hub Corporation (PDHC)

- In 2020, Ghana launched the PHDC project, which includes a network of infrastructure for processing crude oil and raw natural gas into petroleum products to trade, store, transport and to distribute.
- This project provides an opportunity for local and foreign investment supported by a number of economic and regulatory incentives.

Provision of refinery, storage, marketing and transportation of petroleum and gas products

- Investment in the midstream sector by way of boosting refinery capacity will go a long way to reduce import dependency on oil products which will have a positive ripple effect on entities in the downstream especially BDCs and OMCs.

Deployment of 4D seismic technology

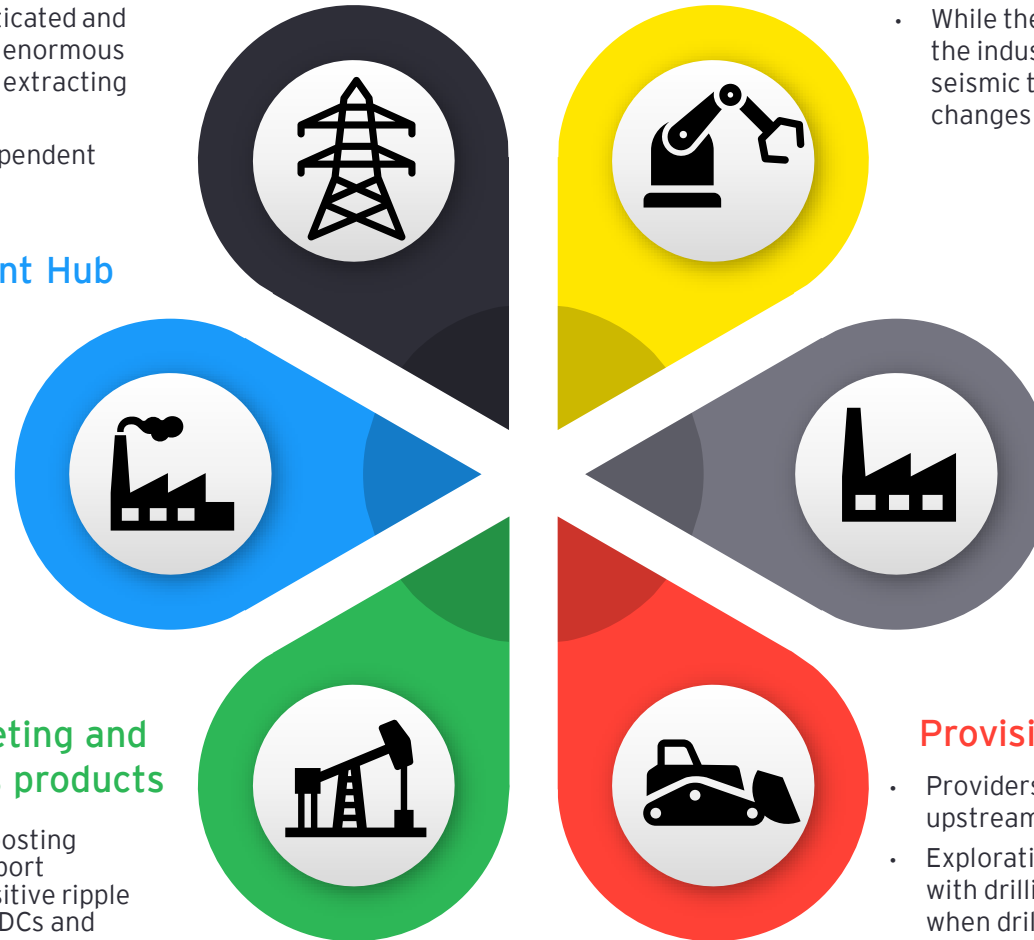
- While there is more extensive use of 2D seismic technology in the industry, there is an opportunity for the introduction of 4D seismic technology that will provide more reliable data on changes in reservoirs.

Investment in natural gas infrastructure

- In March 2017, Ghana began construction of the first LNG terminal in Sub-Saharan Africa as it aims to deliver gas into the national gas transmission network.
- There is a need for investments in LNG infrastructure to support this development.

Provision of drilling products and services

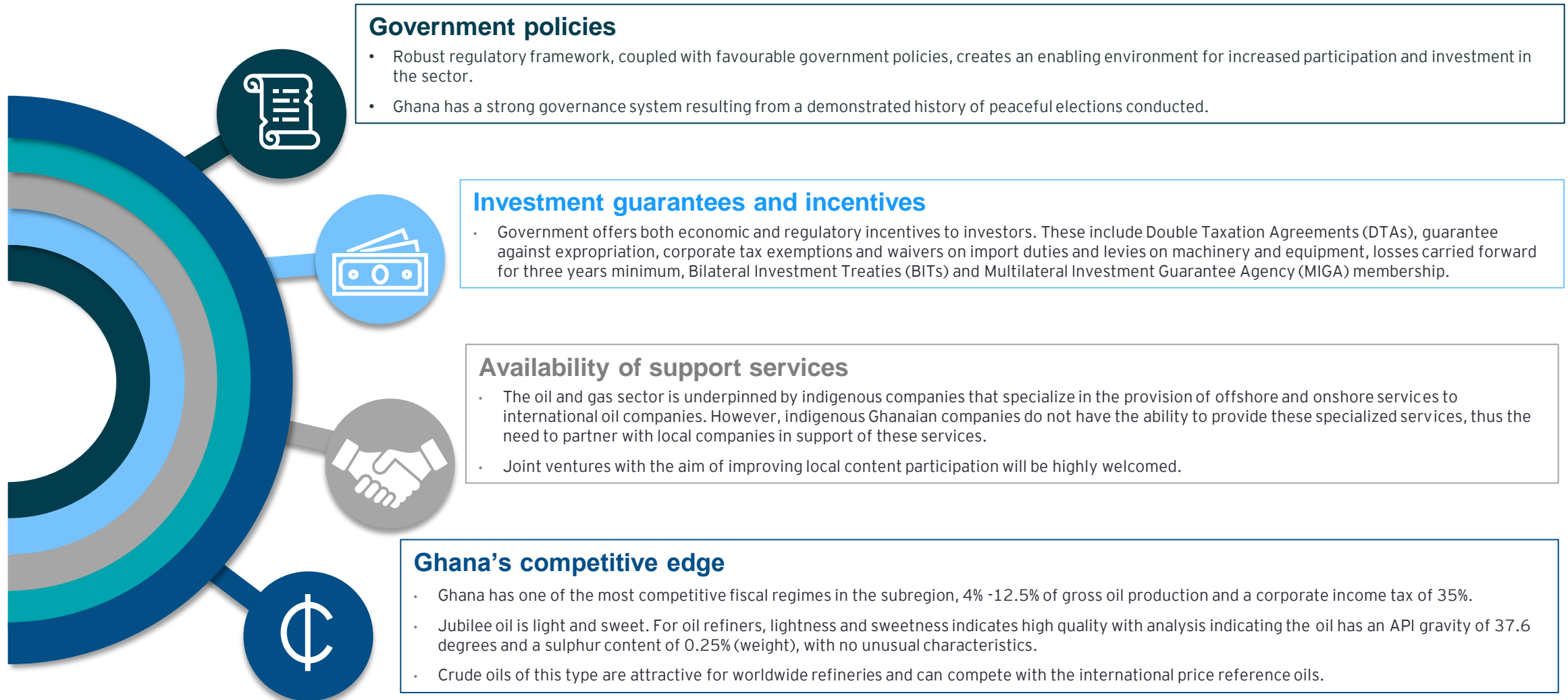
- Providers of drilling services are important actors in the upstream value chain for offshore oil and gas.
- Exploration and production companies (E&Ps) usually contract with drilling contractors during the exploratory drilling phase when drilling production wells and during the well-plugging phase.
- The drilling equipment and services industry offer oil and gas companies with the equipment necessary to extract resources from various environment and terrains.



04

Key investment considerations

Key investment considerations





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Testimonials

“Numerous prospects exist in the oil and gas sector, such as establishing education and training centers that are focused on the sector.

Management consulting is another area for companies to break into as many firms are typically in need of expert consultants to perform objective, independent analysis in areas such as business planning and process control, certification processing and efficiency testing of activities in the oil and gas value chain.”

Apave Ghana Inspection Limited



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Appendix

Appendix I: List of abbreviations

AfCFTA	African Continental Free Trade Area
ATK	Aviation Turbine Kerosene
BBLS	Barrels
BCM	Billion cubic meters
BDCs	Bulk Distribution Companies
BIT	Bilateral Investment Treaties
BOE	Barrels of oil equivalent
BOG	Bank of Ghana
BPD	Barrels Per Day
DTA	Double Taxation Agreement
ECOWAS	Economic Community of West African States
FDI	Foreign Direct Investment
GDP	Gross Domestic Product
GNGC	Ghana National Gas Company Limited
GNPC	Ghana National Petroleum Corporation
GUPC	Ghana Upstream Petroleum Chamber
LNG	Liquified Natural Gas

LPG	Liquified Petroleum Gas
LPGMC	Liquefied Petroleum Gas Marketing Companies
MIGA	Multilateral Investment Guarantee Agency
MMSCF	Million Standard Cubic Feet
MT	Metric Tonnes
NPA	National Petroleum Authority
NGLs	Natural Gas Liquids
OMCs	Oil Marketing Companies
PDHC	Petroleum Development Hub Corporation
SSA	Sub-Saharan Africa
TOR	Tema Oil Refinery
TEN	Tweneboa Enyera Ntomme
UAE	United Arab Emirates