



SECTOR PROFILE

INFRASTRUCTURE

1.0 INTRODUCTION

Ghana's stable political environment, favourable legal framework, constantly improving infrastructure, improving macroeconomic fundamentals and abundant natural resources, amongst others, are bracing to the country's investor attractiveness. With a robust economy and stable investment flows, the future outlook for Ghana is encouraging.

The country's capacity to fully absorb and benefit from increased investments and new technologies depends a great deal on the availability, quality and efficiency of more basic forms of infrastructure. The Infrastructure Sector comprises the ports, roads, rail, aviation, electricity, water supply, transportation, telecommunications sub-sectors.

Whilst public investment in infrastructure has increased, the country is also actively engaged in involving private sector to meet growing demand, through the Public Private Partnership (PPP) initiative. The policies of the Ghanaian Government seek to encourage investments in domestic infrastructure from both local and foreign private capital.

2.0 SECTOR COMPOSITION

Unlike in many other African countries, Ghana's infrastructure backbone covers the entire national territory and helps to link different parts of the country. The country's Infrastructure sector comprises the ports, roads, rail, aviation, electricity, water supply, transportation, telecommunications sub-sectors.

The distribution of infrastructure networks in the country generally reflects the spatial distribution of economic activity, with a greater density of transport, power, and information and communications technology (ICT) infrastructure in the south and southwest of the country than in the north (PwC, Africa gearing up).

3.0 FOCUS ON VARIOUS SUB-SEGMENTS AND ALLIED SERVICES

3.1 Hard and Soft Infrastructure

It is quite noteworthy that the soft components of Ghana's infrastructure base (like telecom, air and port services) have witnessed improving performance over the past two decades, thereby helping the country to maintain satisfactory growth. For instance, the country's rising trade has been reflected in growing container port traffic, which increased from a low of 544,294 in 2007 to about 925,964 in 2017.

Correspondingly, certain hard components, like roads, have witnessed tremendous expansion over the last two decades. Performance in the railway sector has however been met with challenges, in terms of access or spread of rail length.

The figures below highlight trends regarding some of the soft indicators. The subsequent sections throw more light on the various sub-sectors.

Table 3.1 Telephone Service Subscriptions (Dec 2010 - Sept 2017)

SUBSCRIBERS	Dec '10	Dec '11	Dec '12	Dec '13	Dec '14	Dec '15	Dec '16	Sept' 17
Mobile Telephony	17,436,949	21,165,843	25,550,170	28,026,482	30,360,771	35,008,387	38,305,078	37,445,048
Fixed Telephony	277,897	284,721	284,981	270,422	260,407	275,600	251,490	286,493
Total Access Lines	17,714,846	21,450,564	25,835,151	28,296,904	30,621,178	35,283,987	38,556,568	37,731,541

Fig 3.1 Total Access Lines (Telephony)

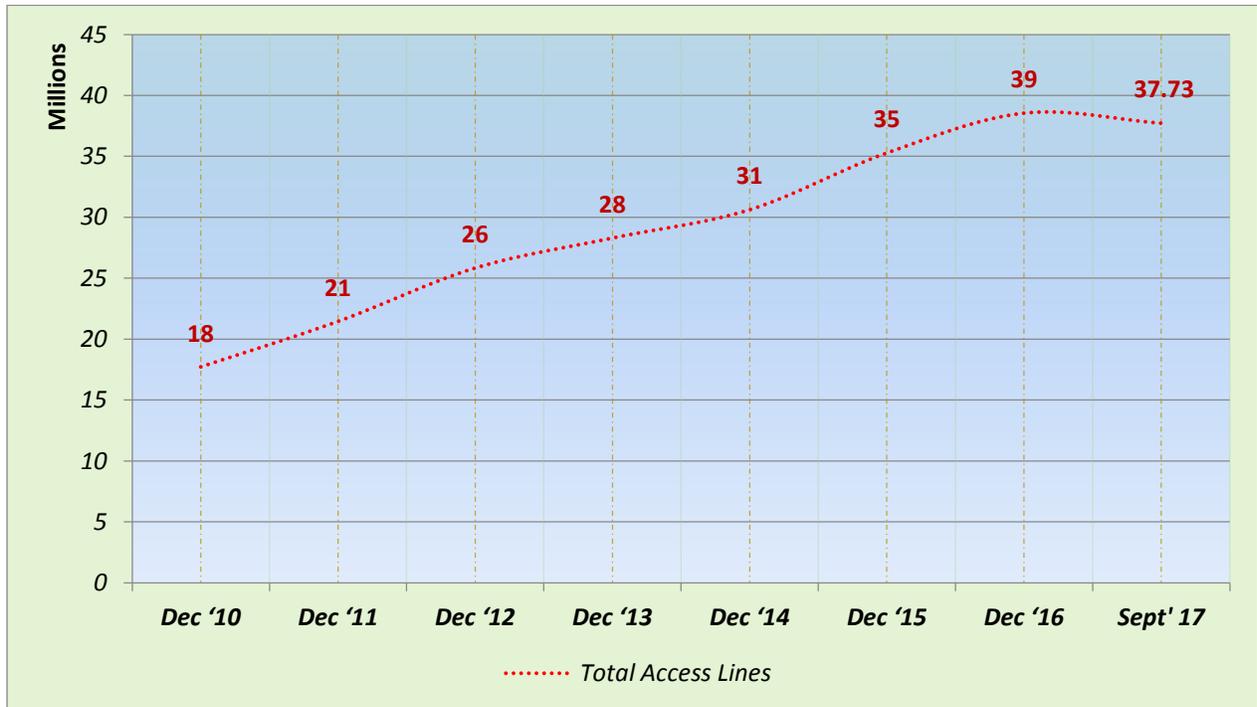


Fig 3.2 Broadband Subscriptions (Mobile)

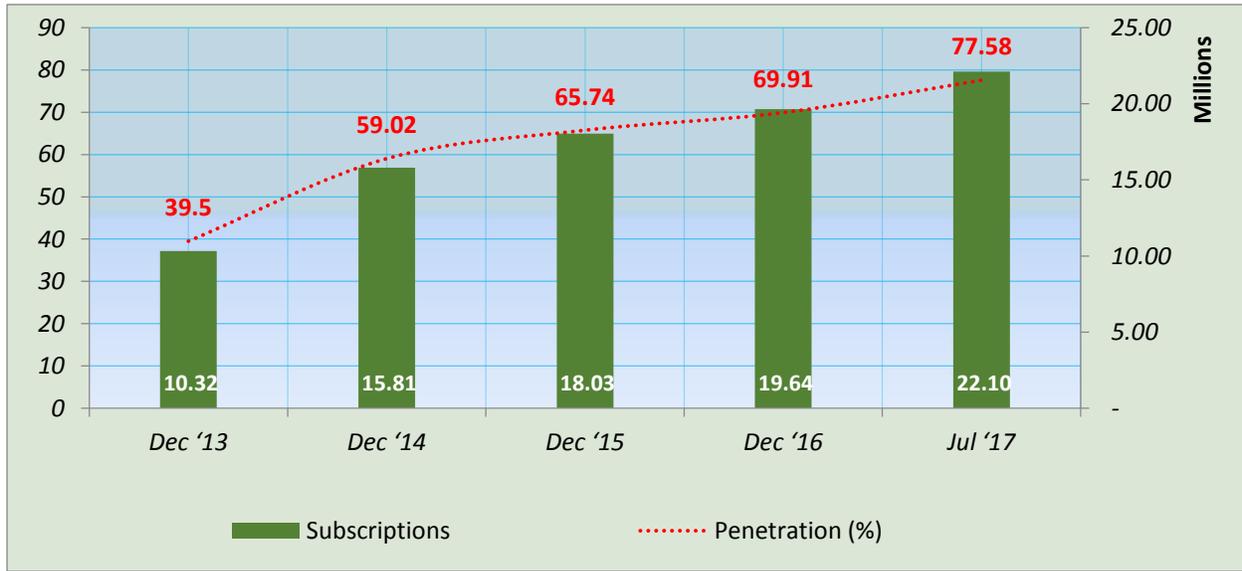
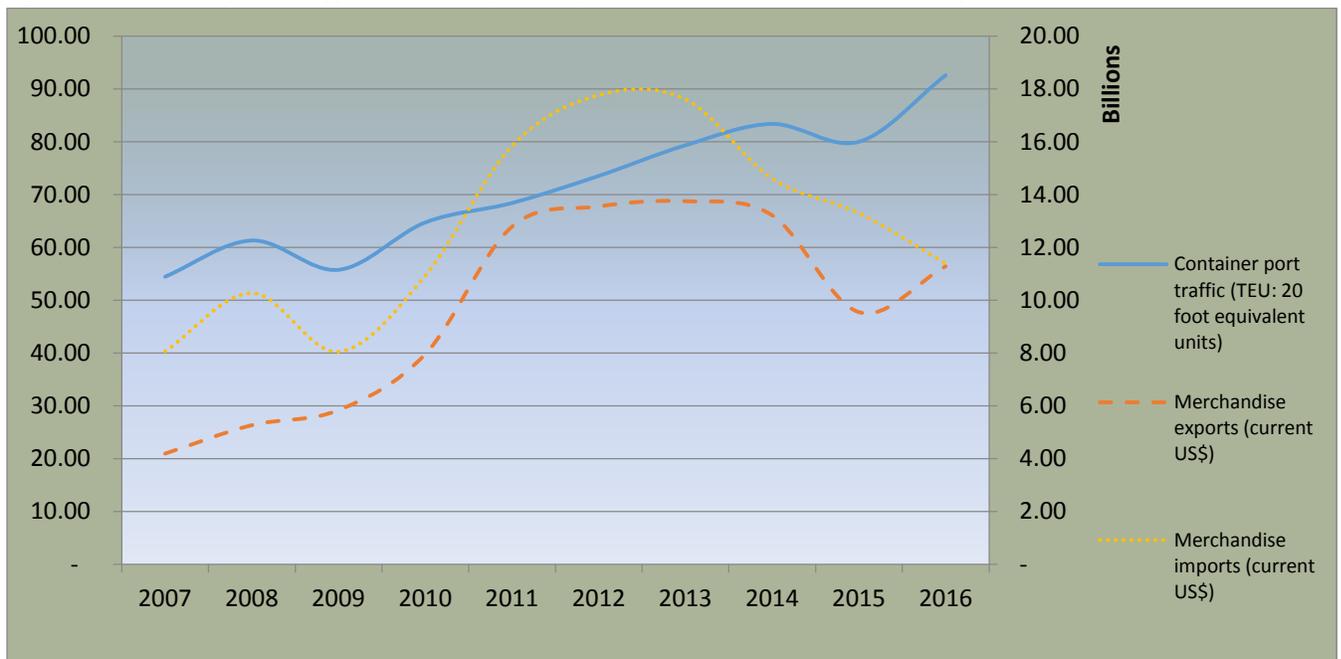


Fig 3.1 Container port traffic (TEU: 20 foot equivalent units) vis-à-vis trade flows



3.2 TRANSPORTATION

The Transport sub-sector is made up mainly of road transport, maritime and water transport, aviation and rail. The fundamental policy objective of the transport sector is to establish an efficient, a modally complementary and integrated transport system. Therefore, Government encourages private sector engagement in this sector.

3.2.1 Aviation

Ghana presently has one international airport- The Kotoka International Airport, located in the Greater Accra Region, which connects the country and the rest of the world. There are also four other domestic airports (located in Kumasi, Sunyani, Tamale and Takoradi) and two airstrips (located in Wa and Kpong). The construction of a new airport in Ho in the Volta Region is currently underway, with major works completed. An airstrip is also being developed in Wa and is scheduled to be operational before the close of 2018.

The country is in the advanced stages of establishing a new national airline. Despite this, Ghana is served by a number of airlines that connect international routes via Johannesburg, Cape Town, Addis Ababa, Nairobi, London, Amsterdam, Dubai and Dar-Es-Salaam etc.

Major airlines operating in the country include Africa World Airlines, Ethiopian Airlines, South African Airways, KLM Royal Dutch Airlines, British Airways, Middle East Airlines (MEA), Kenya Airways, Alitalia, Virgin Airways, Royal Air Maroc, Lufthansa, Egyptair, etc.

Government has embarked on a program to improve the infrastructure at the various airports including the expansion of the Kotoka International Airport and the upgrade of the Kumasi Airport and the Tamale Airports into international status.

The chunk of Ghana's air transport market is international and over the past few years, passenger numbers have grown massively in this regard. With improving income levels complemented with the location of foreign enterprises in the country, the air transport industry has good prospects. Relatively lower volumes in the domestic air transport sector also offers enormous future potential. The figures below highlight trends in the sub-sector.

Table 3.2.1 Aircraft and passenger movements (international)

Year	2008	2010	2012	2014	2016	2017
Aircraft movement	17,481	21,068	22,082	24,871	24,252	24,968
Passengers	1,186,557	1,387,045	1,726,051	1,650,520	1,746,699	1,805,817

Source of Stats: GACL

In 2008, international aircraft movements at the Kotoka International Airport, Ghana’s main point of entry by air, stood at 17,481 with about 1.2 million air passenger traffic. By the end of 2017, the figures rose to 24,968 and approximately 1.8 million respectively.

Figure 3.2.1 Aircraft movements and passenger throughput (international)



Although the domestic front has witnessed relatively lower performance in terms Aircraft movements and passenger throughput as a result of various economic challenges, the segment still has vast potential as Government policies are geared toward improving competitiveness of operators in the industry in sync with Government’s target of making Ghana a hub for West Africa.

3.2.2 Roads & Highways

The Road Infrastructure segment is managed by the Ghana Highway Authority (GHA), Department of Feeder Roads (DFR) and the Department of Urban Roads (DUR), which are agencies under the Ministry of Transport.

The tables below presents indications on the status of the country’s nationwide road network.

Table 3.2.2 Inventory of the National Road Network

Road Network	Trunk	Urban	Feeder	Total	%
Paved (km)	9,217.90	6,004.14	1,927.78	17,149.82	23.69
Unpaved (km)	5,655.10	9,457.63	40,117.40	55,230.13	76.31
Total (km)	14,873.00	15,461.77	42,045.18	72,379.95	100.00

Source of Stats: MORH

Table 3.2.3 Conditions of National Road Network

Road Network	Trunk	Urban	Feeder	Total
Good %	57%	37%	35%	40.12%
Fair %	36%	17%	34%	30.66%
Poor %	7%	46%	31%	29.22%

Source of Stats: MORH

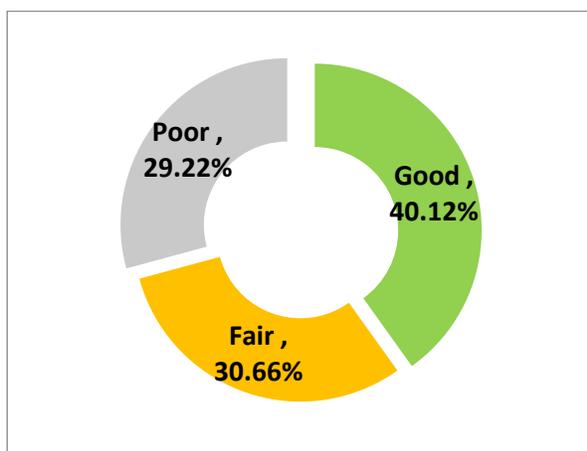


Figure 3.2.3 Conditions of National Road Network

Since the bulk of the inland transport happens on the roads, the quality of the roads is essential to the country's development. By the close of 2015, about 40.12% of the national road network was assessed to be in good condition whilst 30.66% was in fair condition. 29.22% was however assessed to be in poor state.

Ghana's land transport system is presently dominated by road transport. It takes up about 98% of freight and 95% of passenger traffic. From 2008 to 2016, the Drivers and Vehicle Licensing Authority (DVLA) registered approximately 1.2 million vehicles with an average of 127,325 vehicles registered annually.

Table 3.2.4 Vehicles plying the country's roads

Year	2008	2010	2012	2014	2016
Total Vehicles Registered	101,498	102,330	160,431	142,014	114,379
Cumulative	191,826	389,154	691,388	1,010,280	1,236,251

Of the 1.2 million vehicles registered from 2008 to 2016, private vehicles (with cubic capacity up to 2000) constitute 23.07% and commercial vehicles (with cubic capacity up to 2000) constitute 11.19%. Buses and Coaches take 5.31% of the total.

3.2.3 Mass and Rapid Transport

The bulk of passengers on the road network are transported by public transport vehicles such as taxis, mini-buses ('trotros') and large buses.

In the bid to ensuring affordable, safe and accessible transportation system that recognize the needs of people, major steps are being taken to promote mass transportation. Thus, the Metro Mass Transport Company (MMT) was established in October 2003. The introduction of the Bus Rapid Transit (BRT) in 2016 in parts of Accra is also a step in right direction.

There is however the need to increase the number of buses and improve on the quality of service to attract more people to use the MMT and the BRT.

3.2.4. Railways

The rail industry in Ghana has a total track length of 1300km and operates a route length of 947km. This subsector has witnessed little improvement since the 2000s, hence, Government is actively seeking private sector participation in the development and rehabilitation of the railway infrastructure.

The Government is aiming at expanding the existing rail routes to link important exit points which is vital for facilitating trade not only in the country but in the sub-region and boosting Ghana's competitiveness in doing business. As part of the process for revamping the subsector, a Railway Master Plan to guide the sub-sector development was prepared.

Rail which currently handles less than 2% of freight and passenger traffic has its infrastructure concentrated in the south and was designed to transport export commodities. The network forms a triangle that links Accra-Kumasi- Takoradi. It essentially connects the major mining areas to the sea ports.

3.2.5 Maritime/ Sea and inland Ports

There are two main seaports (or harbours) in Ghana namely Tema and Takoradi. Tema is the biggest port and major operations at this port are skewed towards import commodities such as heavy machinery, containerized cargo etc. Operations at the Takoradi port are skewed towards the export trade with emphasis on commodities such as cocoa, timber, manganese and bauxite.

The Tema Port covers 166 hectares of water area enclosed by 2 breakwaters. There are 2 quays housing 12 multi-purpose berths. The berths are operated as common-users, and handle a wide range of cargo including dry bulks, steel products, bagged cargo, newspapers, vehicles and containers. There is also a terminal for handling crude and other liquid petroleum products

which can accommodate tankers of up to 244 metres in length with a maximum draught of 9.7 metres.

The Takoradi port, which was commissioned in 1928, has undergone major rehabilitation in the past two decades, and currently handles about 60% of Ghana’s total exports. While Takoradi is serves the offshore gas and oil fields, Tema is increasingly serving as an outlet for Ghana’s landlocked neighbours including Burkina Faso, Niger and Mali.

The ports are constantly struggling to keep up with the increasing trade flows. In this light, a new centrally located “inland port” is being constructed at Boankra near Kumasi in the heart of the country. This is expected to be an important staging post for goods in transit to and from the landlocked areas in the north of Ghana. This will be a multi-modal facility handling both road and rail traffic.

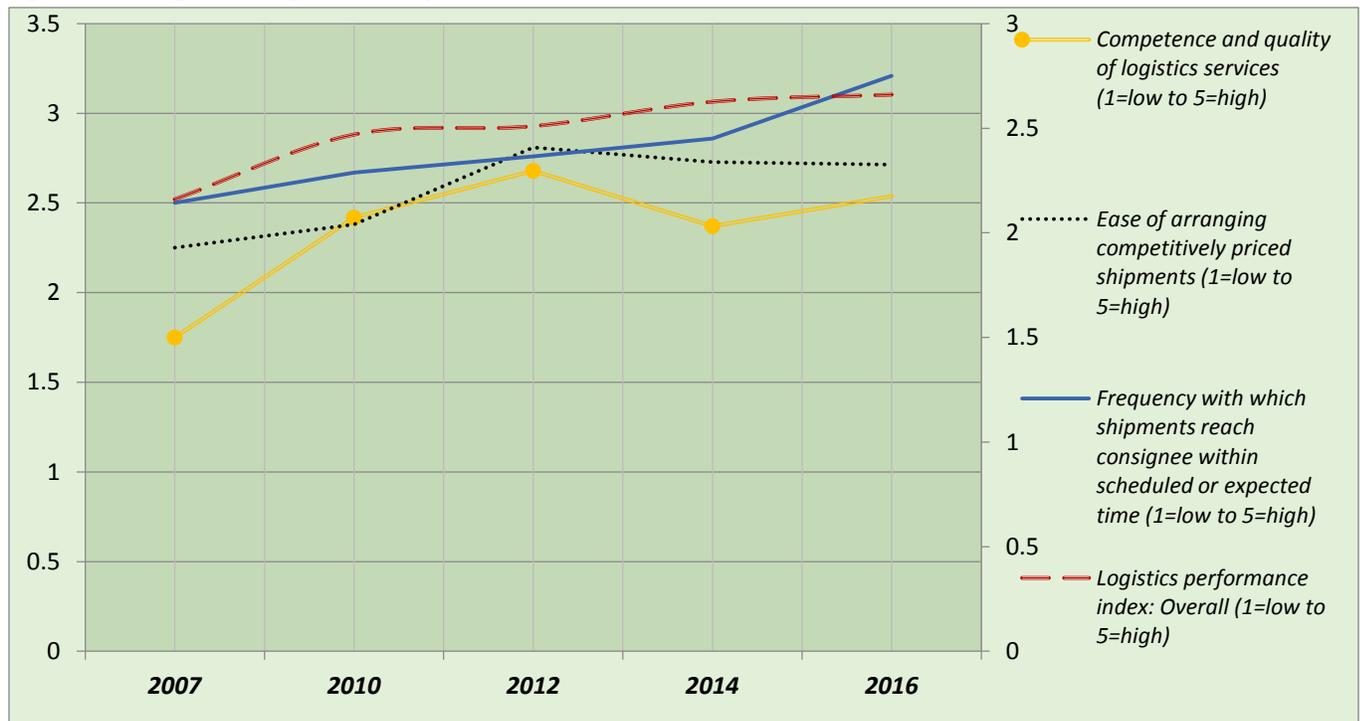
Ghana, seeking to serve as a maritime hub for West Africa, has made significant progress in modernizing the Tema and Takoradi ports over the past two decades and is further committed to ensuring further improvements. The efforts are reflected in the country’s performance in the Logistics Performance Index computed by the World Bank over the past decade.

Table 3.2.6 Logistics Performance Index (World Bank)

Logistics performance index:	2007	2010	2012	2014	2016
Ability to track and trace consignments (1=low to 5=high)	2.250	2.510	2.310	2.904	2.515
Competence and quality of logistics services (1=low to 5=high)	1.750	2.420	2.680	2.372	2.538
Ease of arranging competitively priced shipments (1=low to 5=high)	2.250	2.380	2.810	2.727	2.714
Efficiency of customs clearance process (1=low to 5=high)	2.000	2.350	2.330	2.216	2.457
Frequency with which shipments reach consignee within scheduled or expected time (1=low to 5=high)	2.500	2.670	2.760	2.860	3.210
Logistics Performance index: Overall (1=low to 5=high)	2.160	2.470	2.510	2.627	2.661

The country has witnessed an upward trend in its performance in the Overall Index, moving from a score of 2.160 in 2007 to 2.510 in 2012 and a further better performance of 2.661 in 2016. This comes on the back of improving performance in sub-indices like Efficiency on customs clearance process and Frequency with which shipments reach consignee within scheduled or expected time.

Fig. 3.2.6 Progress- Logistical Performance



From the above figure, it could be observed that generally encouraging rating in sub-indices like the Frequency with which shipments reach consignees within scheduled or expected time contributed to the country's improving performance in the overall logistics performance index.

3.3 ENERGY INFRASTRUCTURE

Ghana generates electric power from hydropower, fossil-fuel (thermal energy), and renewable energy sources. The segment involves the generation, transmission and distribution of electrical energy for industrial, commercial and domestic use in Ghana.

The sub-sector is mainly run by the Volta River Authority (VRA), Electricity Company of Ghana (ECG) and Ghana Grid Company (GRIDCO). These organizations play various respective roles in the generation, transmission and distribution process.

VRA is Government agency responsible for the generation of electricity and supplies power in bulk to the Electricity Company of Ghana for distribution to consumers. The Authority however distributes power in Northern belt of the country (covering Brong-Ahafo, Northern, Upper East and Upper West Regions) through its subsidiary – the Northern Electricity Department (NED). Further, there are various private sector owned Independent Power Producers (IPPs) engaged in the generation of power.

As at May 2018, Ghana had total installed generation capacity of 4,674 Mega Watts (MW) with total dependable capacity of 4,152 MW. VRA accounts for approximately 54.74% and 54.84% of both capacities respectively, whilst 2,334 MW and 2,115MW of the installed and dependable capacities respectively was contributed by the IPPs and other plants. Government's medium term target is to attain generation capacity of 5,000 MW.

Tables 3.3.1 and 3.3.2 below provide facts and figures on power generation in Ghana.

Table 3.3.1 Generation Capacity- VRA (May 2018)

Plant	Installed Capacity (MW)	Dependable Capacity (MW)	Type of Plant
Akosombo Hydro Plant	1,020	900	Hydro
Kpong Hydro Plant	160	140	Hydro
TAPCO - T1	330	300	Thermal
TICO - T2	330	320	Thermal
Mines Reserve Plant (MRP)	80	0	Thermal
Tema Thermal 1 Plant (TT1P)	110	100	Thermal
Tema Thermal 2 Plant (TT2P)	49.5	45	Thermal
Tema Thermal 2 Plant Expansion (TT2PP-X)	38	32	Thermal
Kpone Thermal Power Plant (KTPP)	220	200	Thermal
VRA Navrongo Solar Plant	2.5	-	Solar
Total Capacity	2,340	2,037	

Table 3.3.2 Generation Capacity- IPPs and other Plants (May 2017)

Plant	Installed Capacity (MW)	Dependable Capacity (MW)	Type of Plant
Bui Hydro Plant	400	340	Hydro
Kar Power Barge 1	235	225	Thermal
Kar Power Barge 2	470	450	
Sunon Asogli Phase 1	200	180	Thermal
Sunon Asogli Phase 2 Stage 1	180	160	Thermal
Sunon Asogli Phase 2 Stage 2	180	160	Thermal
CENIT Power Plant	110	100	Thermal
Ameri Power Plant	250	230	Thermal
BXC Solar	20	-	Solar
AKSA	289	270	Thermal
Total Capacity	2,334	2,115	

Source: VRA

3.4 HOUSING AND ESTATE INFRASTRUCTURE

Housing is a basic human need which improves the welfare of society and contributes to social and economic development. Ghana has been facing a very critical shortage of housing supply in many urban centers, but particularly in rapidly growing towns and districts.

Government estimate suggests a backlog of 1.5 million units across the country, and recommends an annual delivery rate of 150,000 units to meet demand in the next 10 years.

The housing sector is largely driven by individual and private sector initiatives, and has to a large extent influenced growth in the economy.

In order to address the current housing deficit, Government has created an enabling environment to provide affordable, quality and adequate housing to the majority of the citizens. Government is also encouraging Public-Private Partnerships (PPPs) in the housing development and construction of ancillary facilities.

3.5 ICT INFRASTRUCTURE

The infrastructural base of this sub-sector comprises licensed gateway operators, undersea cable connectivity, Private Licensed VSAT Systems, Fixed Wired Line Networks, Wireless Mobile Operators, Public telephones systems, Telecentres, Dedicated Transmission Networks, Public Distribution Networks (cable, TV, DSL, etc), Internet Backbone Connectivity throughout the Country and Public Access Point and Broadcasting Systems.

Over the years, broadband connectivity has improved significantly and this is partly due to the arrival of undersea cable links. Presently, there exist five of them, namely, SAT-3, the West African Cable System (WACS), Main One Cable, Glo-1 and the African Coast to Europe (ACE) submarine cable.

SAT-3 is the first undersea cable to be brought into Ghana. It arrived in 2001 and presently has capacity of 340GB per second. The Main One undersea cable followed almost 10 years later (arrived in 2010) and has 5.12TB per second capacity. In 2011, Glo-1 arrived and has 2.5TB per second capacity. The WACS came on board in 2012 with capacity of 5.12TB per second. Early 2013, the ACE also came on board with 5.2TB.

To complement the efforts of the private sector in the extension of affordable and efficient connectivity solutions, the National Fibre Communications Backbone Infrastructure Network aimed at providing open access broadband connectivity is being developed. Following the

successful completion of the southern loop, the 2nd phase of the National Communication Backbone from Tamale to the northern parts of the country and neighbouring countries is being pursued.

Table 3.5.1 Summary of Operators and Service Providers (Sept 2017)

Category	No. Operating
National fixed network operators	2
National Mobile cellular operators	6
Direct to Home (DTH) Satellite Services	15
Internet Service Data Providers	52
VSAT Data Providers	48
FM Stations	
• <i>Public</i>	31
• <i>Community</i>	74
• <i>Campus</i>	21
• <i>Commercial</i>	340
TV Operators:	
• Free on air TV Operators	
✓ Analogue Terrestrial Television	15
✓ Digital Terrestrial Free-to-Air TV Program Channel	0
✓ Satellite TV Broadcasting (Free-to-Air Direct-To-Home Bouquet)	1
✓ Satellite TV Broadcasting (Free-to-Air Direct-To-Home Single Channel)	11
• Pay per view TV Operators	
✓ Digital Terrestrial Pay Television (Service Only)	1
✓ Digital Terrestrial Pay Television (Service and Frequency)	4
✓ Satellite TV Broadcasting (Pay TV Direct-To-Home Bouquet)	3
✓ Digital Cable Television	0

Source: NCA

Further, Ghana currently has 6 registered mobile operators, all of which are functional. These are MTN, Vodafone Mobile, Tigo, Expresso, Glo Mobile Ghana and Airtel Mobile. Vodafone and Airtel are the only two fixed-line operators.

3.6 WATER AND SANITATION

Ghana's water sector is segmented into two parts, identified as the Urban Water sector and Community Water sector. The Urban Water sector comprises about 87 cities and towns where the national water utility - the Ghana Water Company Limited (GWCL) -owns and manages water supply. The Community Water sector deals with over 16,000 rural communities and some 287 small towns.

Management of water supply is the responsibility of District Assemblies with facilitation and oversight role by the Community Water and Sanitation Agency (CWSA). Municipal and district assemblies are responsible for investment, operation and maintenance of water and sanitation infrastructure within the community water sector.

The Environmental Sanitation segment covers both the liquid and solid waste management and disposal. The sanitation sector is therefore varied, covering very different types of waste, such organic waste, inorganic and hazardous waste. Depending on the type of waste different methods as regards collection, treatment and disposal are used.

The institutional framework places the overall responsibility of environmental sanitation with the Ministry of Local Government, as it is the central government agency in charge of local government affairs and the environment. The responsibility for implementation of environmental sanitation projects and programmes lies with the Metropolitan/Municipal and District Assemblies.

In Ghana, part of the collection and disposal of waste water is done using conventional sewer systems. The sewer systems are at Tema and some parts of Accra, Kumasi and Sekondi-Takoradi. A greater part of consumers use underground tanks such as septic tanks. The waste is then transported by de-sludging tankers to treatment works or dumping sites. The transportation is done by the waste management department of the district assemblies and private tanker operators.

The main types of treatment facilities used in Ghana are oxidation or waste stabilization ponds, aerated lagoons, trickling filter and activated sludge process treatment facilities. The waste water treatment facilities in the country are largely used for treating domestic waste water.

Approximately 10.3 million people (51%) have access to improved water supplies in Ghana. For the 8.4 million residents in the country's urban areas this increases slightly to 61% with two thirds of these or 40% of the total urban population covered by GWCL's networks. With GWCL's unaccounted-for water (UFW) at about 50% of total output, the volume of water that is effectively sold (280,000 m³/ day) is less than half of the daily demand (763,300 m³).

The major consumptive uses of water in Ghana are water for domestic and industrial uses, irrigation and livestock watering. Domestic and industrial urban water supplies are based almost entirely on surface water, either impounded behind small dams or diverted by weirs in rivers.

At present irrigation development does not play an important role in the overall water resources balance considerations. However, the potential for irrigation has been shown to be considerably larger than the present land area under irrigation. The main non-consumptive uses of water are hydropower generation, inland fisheries and water transportation.

On the basis of surface water resources alone, the consumptive water demand for 2020 has been projected to be 5.13 billion m³, which is 13 percent of the surface water resources.

4.0 GOVERNMENT'S POLICY DIRECTION

The policies of the Ghanaian Government essentially seek to encourage investments in domestic infrastructure from both local and foreign private capital.

The vision and policy direction of the new government is one of hope, jobs, wealth creation, and a robust economy that supports a thriving private sector. This vision is crystalized in a comprehensive set of initiatives and critical interventions outlined in the maiden budget statement and economic policy of government (2017) for the medium to long term toward achieving the industrial transformation of Ghana's economy.

Infrastructure development is one of the Government's priority areas and Government recognizes the need to mobilize private sector financing to support public infrastructure development through PPPs as alternative financing for infrastructure development. More specifically, key projects to be procured under the PPP arrangement will transcend across sectors and include roads, railways, boarder support infrastructure, energy, estate and housing, agriculture services, health and airports.

Therefore, to cover the infrastructure gap and to improve access to quality and affordable infrastructure service, Government is inviting the private sector to participate in the construction, rehabilitation and maintenance as well as financing of public infrastructure and services.

5.0 SECTORAL DEVELOPMENTS

The following touch on some of the developments ongoing in the sector.

Road Rehabilitation and Maintenance Programme

The Ministry of Roads & Highways is focusing on routine and periodic maintenance, and minor rehabilitation activities to protect the huge investments made by Government in the provision of road infrastructure. Thus, in 2017, routine maintenance was undertaken on 10,250km trunk, 10,679km feeder and 7,200km urban road networks. This compares with routine maintenance on 110,723.49km trunk, 16,183km feeder and 9,384km urban road network respectively in 2016.

In 2018, the Ministry of Roads & Highways will undertake 11,900km, 22,500km and 6,500km of routine maintenance activities on trunk, feeder and urban road networks, respectively. Additionally, periodic maintenance activities (Spot Improvement, Re-gravelling, Resealing, Asphaltic Overlay, Partial Reconstruction, Maintenance of Bridges) will be undertaken. This will cover 350km of trunk, 300km of feeder and 350km of urban roads.

ICT Infrastructure Development Programme

The construction of the 780km Eastern Corridor fibre optic project linking Ho to Bawku and from Yendi to Tamale is on-going. Some of the areas so far covered include:

- Yendi to Tamale link (fully completed and ready for use)
- Bawku to Gushegu (65 percent complete)
- Gushegu to Yendi (95 percent complete)
- Yendi to Bimbila (90 percent complete)
- Bimbila to Nkwanta (70 percent complete)
- Nkwanta to Jasikan (40 percent complete)
- Jasikan to Kpando (30 percent complete)

The Ministry of Communication plans to pursue the construction of an offshore fibre optic network in the Western corridor in the medium term. When completed, the project will connect offshore platforms to parent companies on the mainland as well as provide telecommunication and oil and gas content to the oil industry.

Aviation Facility Management Programme

To improve infrastructure at the Kotoka International Airport (KIA), work on the expansion of the arrival hall, construction of the southern apron and completion of 3 new boarding gates (to bring the total to five) has been undertaken. This improved waiting time of passengers at immigration and with the new baggage handling (carousels), waiting time of passengers at the

arrival hall has reduced. Other facelift works are also ongoing at the KIA as the construction of a new terminal (Terminal 3) is about 91% complete and is expected to handle up to 5 million passengers per annum. The project is expected to be completed by the close of 2018.

Funding has been secured for the second phase of the Kumasi Airport to cover the construction of a new terminal building, extension of a new runway and other ancillary facilities. When completed, medium to large aircrafts can be accommodated.

The first phase of the Tamale Airport which included the runway extension from 2,480 meters to 3,940 meters to accommodate bigger aircrafts was completed whilst funding for the second phase (to cover the construction of an airport terminal building with approximately 5000m² Hajj Terminal, air traffic control tower and fire-fighting services) was approved for implementation in 2017. Construction is to commence this year 2018.

To create an efficient transport system and open up the country for socio-economic activities, the first phase of the construction of a new airport in Ho is about 87% complete and is expected to be completed by the close of 2018. The rehabilitation of the Wa aerodrome was completed in 2017.

Rail Transport Programme

As part of measures to revamp the railway system, reconstruction of the railway line from Sekondi to Takoradi via Kojokrom consisting of 10.1km double track railway line from Takoradi to Kojokrom and a 4.5km single track line to Sekondi have been completed, leading to the introduction of rail passenger services.

Construction works for a railway line from Tema to Akosombo, stretching over a distance of 85km as part of a multi-modal transport system linking the Tema Port to the Buipe Port and neighbouring countries via Akosombo has commenced. This will facilitate the transfer of containerized cargo to and from rail.

Railway Investment Management Programme

In line with Government's vision to systematically revamp the rail sector to contribute to the development and the economic growth of the country, the Ministry of Railway Development will reorganize the institutional framework for the sector. The new Ministry will be structured under the traditional four-line-directorates with additional directorates namely: Railways Development and Services, and Railway Investment Management.

The Ghana Railway Development Authority will be separated into two institutions, one as the regulator and the other for managing the infrastructure of the sector.

Maritime Services Programme

The Ministry of Transport has procured three 50-Seater high speed passenger ferries, to improve passenger and cargo services along the Volta Lake. Furthermore, to improve transportation services on the Volta Lake, construction work on the Eastern Corridor Multi-Modal Transport project is on-going whilst landing sites, access roads, ship building, ports and floating docks have commenced.

To facilitate bulk cargo handling facility at the Tema Port, and provide additional berths to reduce waiting time of vessels, the construction of Bulk Cargo Handling Jetty with a length of 450m was completed and operational.

ICT Infrastructure Development Programme

The three phases of the Digital Terrestrial Television project, covering Greater Accra, Ashanti, Volta, Northern, Upper West and Upper East Regions have been completed.

To bridge the technological gap between the served and underserved areas, 20 enhanced Community Information Centres (eCICs) were constructed in selected areas in the Northern part of the country. In addition, the Ministry completed and commissioned the refurbishment of the Public Works Department (PWD) warehouses into a world class Business Process Outsourcing (BPO) facility.

The National Information Technology Agency (NITA) will begin the process of commercializing its infrastructure to raise enough revenue, maintain, expand and upgrade the infrastructure, sell off the excess capacity as well as expand and improve upon its business operations and modules for MDAs and MMDAs.

Airport Free Zone

Government has identified the establishment of sector-targeted Free Zones as a major driver for capital inflows and jobs for Ghanaians starting, this year, with the preparatory work for attracting private investment into an Airport Free Zone (AFZ).

The AFZ will be purely a private sector investment with government only facilitating the process. Government will explore several options with potential investors.

6.0 INVESTMENT INCENTIVES/ GUARANTEES

Ghana is a safe investment destination. Guarantee against expropriation of private investments is provided under the investment law and buttressed by the Constitution of Ghana. Some of the guarantees are detailed below:

- i. Free transferability of capital, profits, dividends and payment in respect of foreign loans contracted.
- ii. Insurance against non-commercial risks – Ghana is a signatory to the World Bank's Multilateral Investment Guarantee Agency (MIGA) Convention.
- iii. Double Taxation Agreements (DTAs) – to rationalize tax obligations of investors in order to prevent double taxation, DTAs have been signed and ratified with several countries

7.0 GHANA'S COMPETITIVE ADVANTAGE

1. Stable Political Environment

Ghana is a politically stable country. This has been recognized by the world's famous leaders including US President Barack Obama and his predecessors and former UK Prime Minister Gordon Brown and his predecessors who have all commended Ghana for the political stability in the country over the years.

2. Macro-economic Policies

The Government of Ghana has initiated a number of sound macroeconomic policies designed to accelerate the process of growth and transformation of the economy under competitive conditions. In the face of high crude oil prices and global credit crunch, Ghana's economy is still relatively stable. Management and access to foreign exchange in Ghana continues to get better.

3. Foreign Ownership

In the on-going privatization program, hundred per cent (100%) foreign ownership is permitted.

4. Access to ECOWAS Market

Ghana is easily accessible to the markets of all the member states of the Economic Community of West Africa (ECOWAS) with its population of approximately 250 million people.

5. Good Physical Infrastructure

Ghana possesses well developed seaports, airports and road networks capable of meeting the needs of businesses in the 21st century. There is an effort to upgrade the rail network to make it easy to get to the ports from inland. Telecommunication facilities in Ghana are excellent with more private service providers offering telephone, internet and other telecommunication services. Basic utilities such as water and electricity are readily available at relatively affordable rates.

6. Excellent Labour Force

There is a large human resource base of both skilled and unskilled labour which can be sourced at relatively low rates. The minimum wage in Ghana is GH¢ 10.65.

7. Access to International Markets

Ghana has easy access to the USA and European Union Markets. The flight time to almost all European Union countries is about 6 hours and 9 hours to the USA.

8. Availability of Fund Sources

Ghana has a large number of fast developing financial institutions available to raise long-term capital at competitive rates. These institutions include banks, insurance and venture capital companies and a stock exchange market (Ghana Stock Exchange).

9. High Safety Standard

There are high standards of health and safety measures in the country.

10. Warm and Friendly People

Ghana is internationally acclaimed for her hospitality to her investors and foreigners as a whole.

11. High Quality of Life

The quality of life of Ghanaians is fairly high.

12. Availability of Land

Ghana has a wide expanse of land that can be acquired with little difficulty through appropriate agencies and owners.

All investors interested in Ghana's Infrastructure Sector are assured of a safe and secure investment environment which has the backing of a very encouraging legal and regulatory regime to protect their investments.

8.0 OPPORTUNITIES

There are considerable investment opportunities in the Infrastructure sector. Some of the opportunities in the various segments are highlighted below:

- **Roads and Transport**
 - ✓ Major investment opportunities for the roads and railways segments in the areas of construction, maintenance and services.

- ✓ In mass transportation – scheduled bus system
 - ✓ Rail upgrades and passenger rail transport on chosen corridors
 - ✓ Lake transportation systems
 - ✓ Air transport operators for domestic and sub-regional services
 - ✓ Development of regional airports
 - ✓ Upgrading of existing trunk roads under BOT, BOO, BAT, BLT etc.
- **Energy Sector:**
 - ✓ Electricity generation and transmission
 - ✓ Refineries, storage facilities and pipelines for petroleum and gas
 - ✓ Renewable energy facilities
 - ✓ Investment is needed to provide electrical services in the construction of the physical facilities including street lighting, improved coverage/access and service efficiency.
- **Water Supply and Sanitation:**
 - ✓ The water supply and sanitation infrastructure is insufficient, especially in rural areas. Major investments are needed to extend coverage, rehabilitate and maintain existing infrastructure and provide Point Sources (boreholes/hand-dug wells), Small Towns Pipe Schemes and Rain Harvest Plants.
- **Ports**
 - ✓ Improvement of Minor Ports
 - ✓ Port expansion projects
 - ✓ Construction of green field ports
- Hiring and selling heavy equipment for infrastructural construction works

9.0 GHANA'S UNIQUE ATTRACTION

Ghana offers many attractions to the foreign investor:

- a) A stable political environment: Ghana has enjoyed a stable political climate with smooth transition of government over the years.
- b) A sound macroeconomic policy: Government's macroeconomic policy is designed to accelerate the process of growth and transformation of the economy under competitive conditions. Monetary policy has been consistent and fiscal discipline is apparent from lower budget deficits. Inflation continues its downward course and access to foreign exchange is improving.

- c) 100% foreign ownership permitted: on-going privatization programme.
- d) A large Economic Community of West African States (ECOWAS) market (300 million people).
- e) Good and ever improving physical infrastructure: Ghana has developed seaports, airports and roads network. Telecommunication facilities are available as are basic utilities like water and electricity.
- f) Availability of skilled and trainable labour.
- g) Competitive labour cost: Ghana also offers a large workforce of both skilled and unskilled labour at affordable and competitive rates. The current minimum wage rate is GH¢10.65.
- h) Quota-Free access to USA & European Union markets.
- i) Proximity to European Union (6 hrs flight time) and USA markets (9 hrs direct flight time).
- j) Fast developing financial infrastructure: With over 30 banks, insurance, and brokerage firms, and a stock exchange that allows companies to raise long term capital at low cost, Ghana's finance sector is one of the most developed in Africa
- k) High degree of personal safety.
- l) Warm and friendly people: Ghana is internationally recognized for her hospitality and warm affection for her investors.

10.0 POTENTIAL SOURCES OF FUNDING

Viable companies and projects can easily attract financing both on the local and international financial markets. The main sources of funding are (as at January 2017):

- 31 licensed Banks
- 70 non-bank financial institutions
- 140 rural and community banks
- The Ghana Stock Exchange – note that in the last four years, many issues of shares on the GSE have been oversubscribed by 100% - 300%, meaning that there is a lot of money for investment purposes
- Ghana Venture Capital Fund
- International development finance institutions based in Ghana, such as the International Finance Corporation (IFC) and the African Development Bank (AfDB)

A number of foreign financial institutions also provide off-shore financing directly to companies in Ghana.