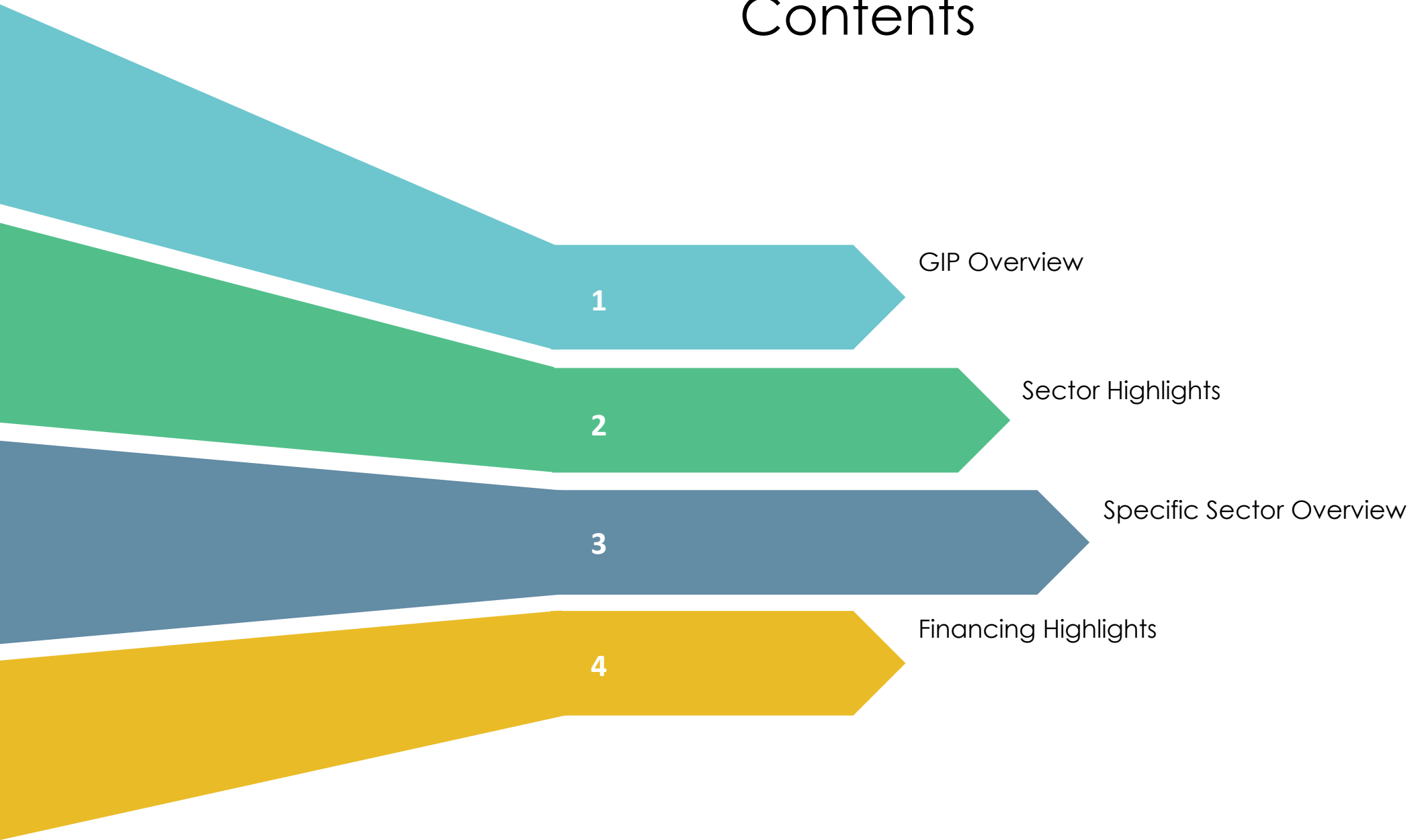




# Ghana Infrastructure Plan 2018-2047



# Contents



# Ghana Infrastructure Plan (GIP) Overview

1

The GIP sets out the infrastructure requirements to support Ghana achieve a GDP/capita of \$60,000 by 2057

2

Aims to have the infrastructure in Place by 2047, highest priority the energy sector around the urban areas together with affordable housing

3

Funding requirements of \$1.1 Trillion or \$2.3bn/annum. Largest sector within this is Housing and Social Infrastructure at \$900bn

4

Focus is to create an environment that encourages long term predictable relationships with investors in the infrastructure sector

# GIP Sectors Overview

## ICT

- ◆ ICT infrastructure provision requires huge capital expenditure for initial setup and maintenance.
- ◆ The global trend for alternative funding besides government sources include: Public Private Partnership (PPP), Loans, Private Equity (PE) and Universal Service Fund (USF). Among these sources, PPP remains the most popular option.
- ◆ Seeking 100% internet penetration rate by 2047

## WASTE MANAGEMENT

- ◆ Total investment required \$17.6bn
- ◆ Increase access to solid waste collection services to 100% of population from 50%
- ◆ Liquid waste investment focused mainly in urban areas 149,000km of urban sewers to be laid.

## TRANSPORTATION

- ◆ Total Investment \$331 bn.
- ◆ Road network expanded by 3.5x to 253,000km
- ◆ Expansion of airports to the regions
- ◆ Additional expansions at Tema and Takoradi Port and on the Volta Lake
- ◆ Deliver 4000km of standard gauge railway network
- ◆ Sub-urban transport systems incl railway

## HOUSING

- ◆ Total Investment required \$900bn.
- ◆ 8.4 million houses required between 2018-2047.
- ◆ Develop local alternatives to inputs for the housing sector

## WATER & DRAINAGE

- ◆ Total Investment required \$128.8bn
- ◆ New water required 48bnm<sup>3</sup> by 2047, focus on water resource management
- ◆ 204 new Peri-urban systems planned and upgrade on 171 systems. 7 new urban water systems plans and upgrade on 42 systems.
- ◆ Irrigation systems required to cover 823,000 hectares of farm land.

## ENERGY

- ◆ Total investment required \$168 bn
- ◆ Increase generating capacity to 50.2MW from 3.8MW currently.
- ◆ Focus on loss reduction technology

# Transport Sector Highlights

- ◆ With population growth and increase in prosperity the number of vehicles is expected to increase to approx. 14.2m by 2057 from 1.89m in 2015
- ◆ Trunk Roads - \$56,600m
- ◆ Feeder Roads - \$156,700m
- ◆ Urban Roads - \$39,700m
- ◆ East – West Motorway planned between borders of Cote D'Ivoire and Togo
- ◆ 4 lane high speed road to Burkina from Takoradi and Accra thru Kumasi & Eastern and Western corridors planned
- ◆ 270 separate projects

- ◆ The vision of rail investment plan is to improve the attractiveness of rail transportation in Ghana in relation to other means of transport and ensure it better serves the nation.
- ◆ Current network is circa 947km , 2,643 buildings (70% are residential), 14% of rolling stock is operational.
- ◆ Master plan for rail sector is looking to develop 4,007km of railway delivered through PPP's
- ◆ 6 phase development plan starting with rehab of existing lines

- ◆ Focus on seaports is to expand further Tema and Takoradi
- ◆ Tema expected to handle circa 15.2m general cargo and 4.8m TEU by 2043
- ◆ Takoradi expected to handle 250,000 TEU by 2028
- ◆ Other port projects include: Tema Drydock, Kpone Unity Terminal, Boankra Inland Port, 13 Fish landing sites.
- ◆ Inland Water transport expanded on Volta Lake for cargo and passenger traffic 11 new ports

- ◆ The vision is to position Ghana as the preferred aviation hub and leader in the airport business in West Africa
- ◆ Growth of passenger traffic expected to be 7% per annum
- ◆ There will be enhanced interconnectivity between the country's airports increasing throughput
- ◆ New airports in Takoradi, Princess Town, Prampram, Ankaase-Kumasi, Bolgatanga, Cape Coast, Koforidua



## ROADS



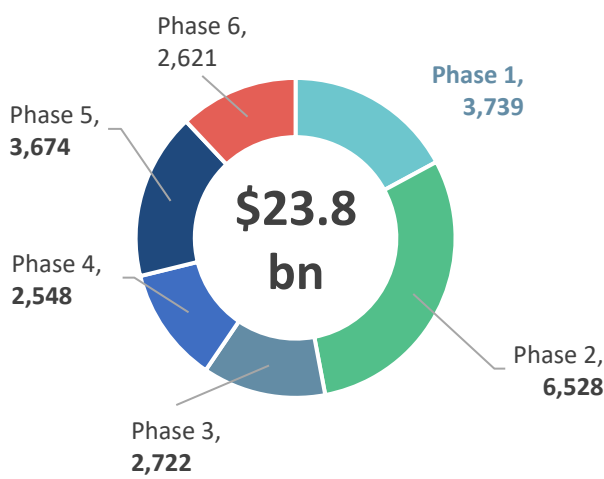
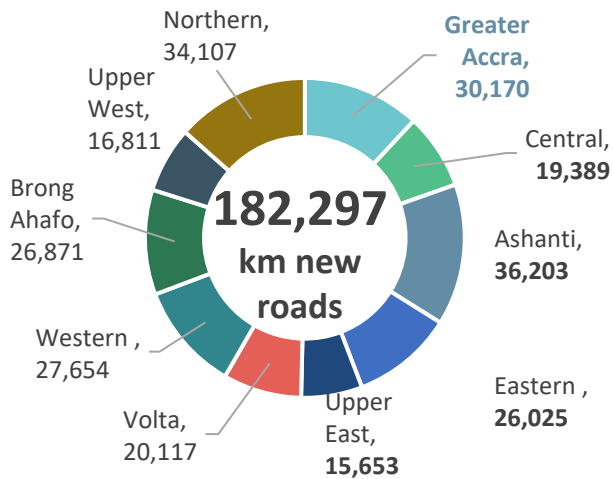
## RAILWAY



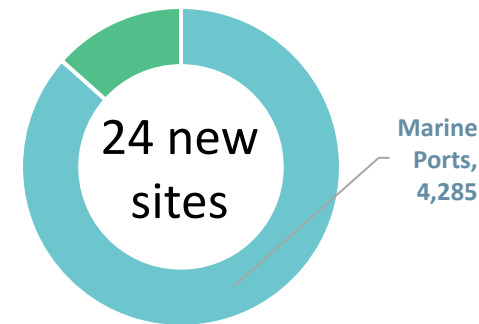
## MARITIME



## AVIATION



Inland Ports, 664



Figures is US\$ m

# Energy Sector Highlights

- ◆ Renewable Energy Authority to be established
- ◆ Renewable Energy to be 118% of national energy mix by 2047 totaling 9,000MW from the 2018 installed capacity of 38MW
- ◆ Dependence on biomass as main fuel for cooking and heating will be reduced
- ◆ Local content and participation in renewable energy sector
- ◆ Roof space installations will be encouraged and promoted

- ◆ Expectation on more development on Jubilee field and potential resources in the Voltarian Basin
- ◆ Capacity of Tema Oil refinery increased from 45,000 bpd to 60,000 bpd
- ◆ New 60,000 bpd refinery to be built in Western Region
- ◆ Additional investment into gas transmission pipelines
- ◆ Additional investment into pipelines to transport petroleum products

- ◆ Plans to install a high capacity fiber optic network on the transmission network.
- ◆ Development of wholesale electricity markets to be encouraged
- ◆ Seeking to reduce transmission loss currently at 4% to less than 3%

- ◆ The vision is to have the best electricity access rate in Africa with a low system loss and high reliability performances.
- ◆ Power distribution master plans are produced every 10 years
- ◆ Installation of smart grid technologies into the system with
  - ◆ Distribution Management System
  - ◆ Advanced Metering Infrastructure
  - ◆ Outage Management System



## RENEWABLE ENERGY



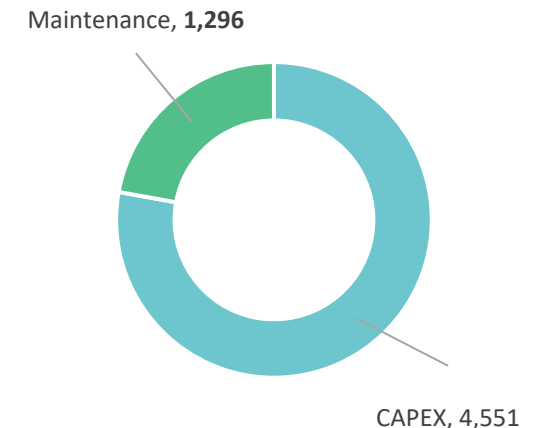
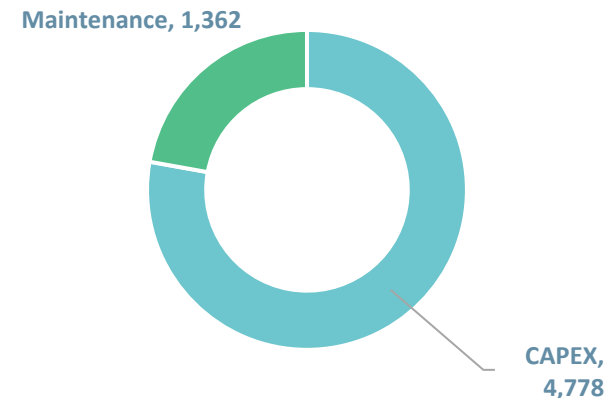
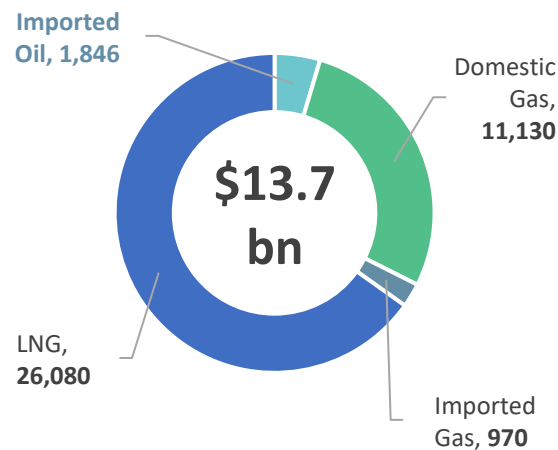
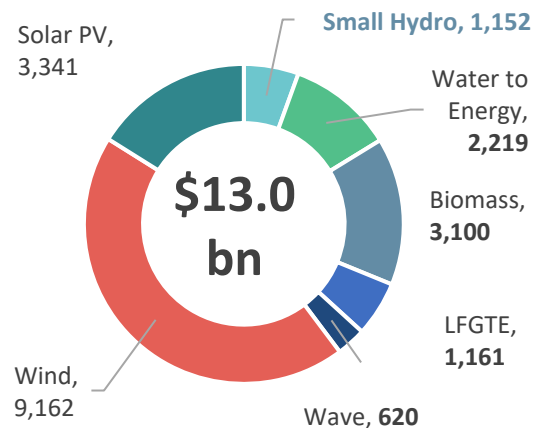
## PETROLEUM SECTOR



## TRANSMISSION



## DISTRIBUTION

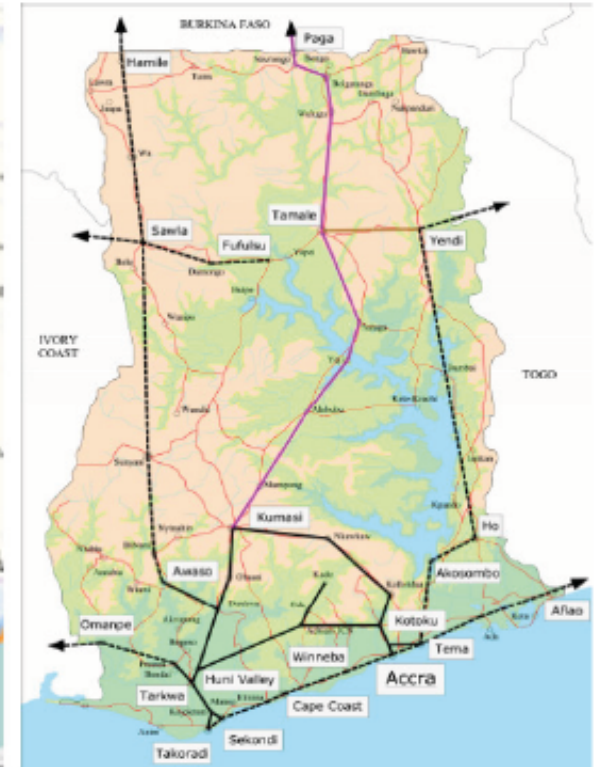
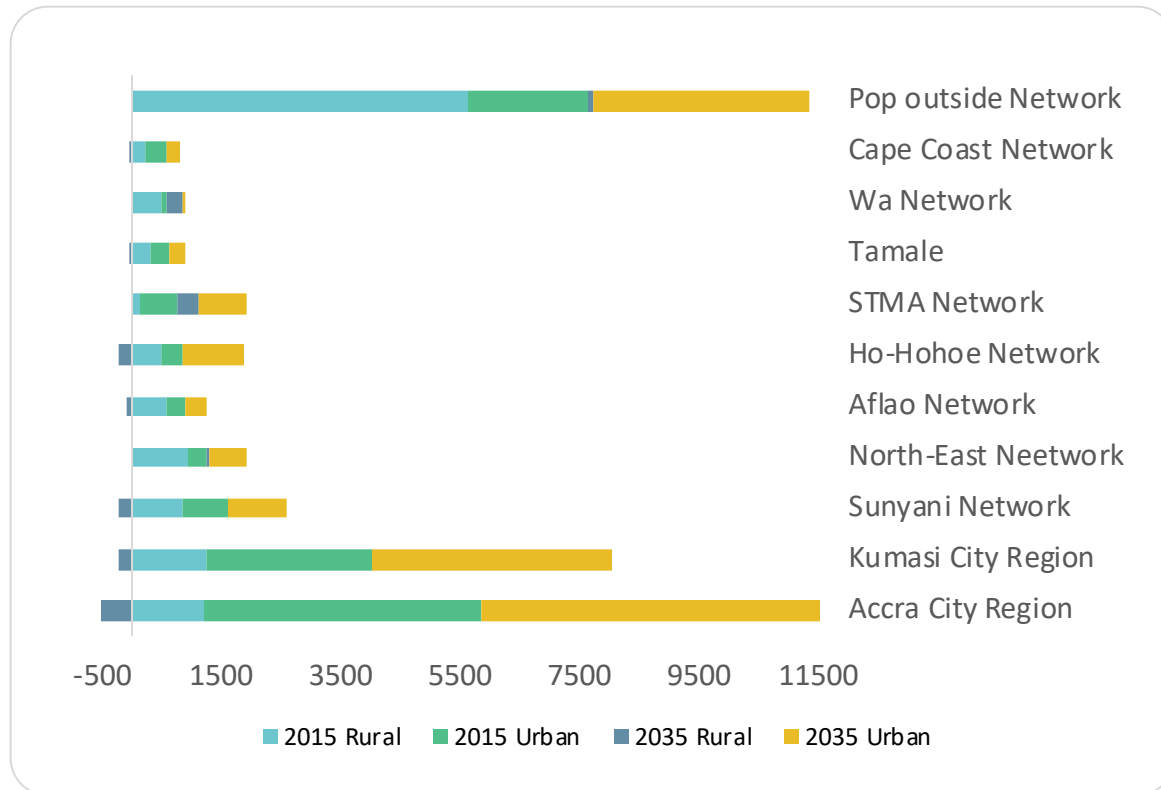


Figures is US\$ m

# Housing Sector Highlights

- ◆ The vision for the housing sector is to develop the cities without slums or informal settlements
- ◆ Improve functionality. Efficiency of existing settlements through urban regeneration
- ◆ Revitalise the mining towns, with first phase being Obuasi, Konongo and Tarkwa
- ◆ Redevelopment of 4 informal industrial enclaves (aka Kokompe) in Accra, Kumasi and Takoradi
- ◆ Establishment of a new Model City

- ◆ Deliver 8.9m new houses – 50% in Middle Income bracket – 35% in the low income bracket
- ◆ Developing and strengthening the mortgage market to support funding of housing development
- ◆ 47,973 hectares of land required to deliver the housing needs
- ◆ Focus to develop local building material supply chain
- ◆ Total investment required **\$900bn**
- ◆ Total Investment required for Social Services Infra \$10.7bn

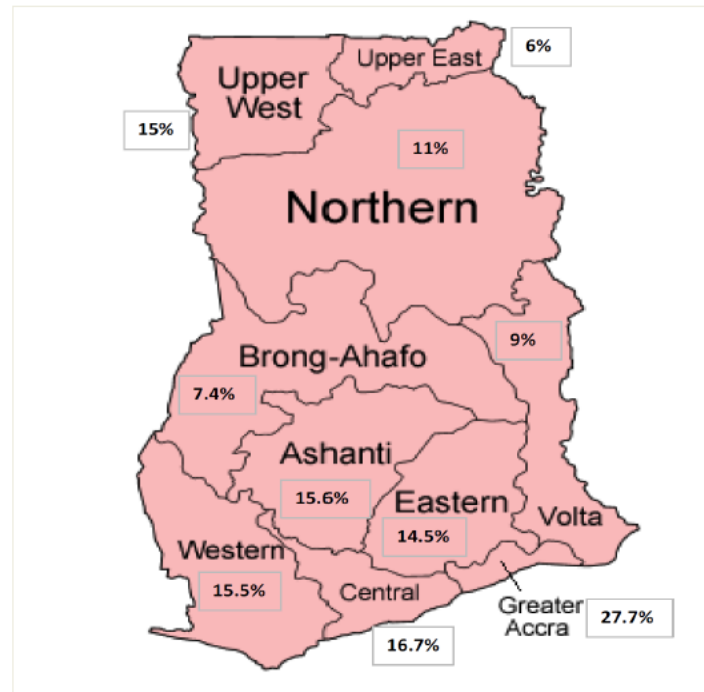


# Information & Communication Sector Highlights

- ◆ Internet penetration rate in 2017 was 27.8% the target is to increase this to 99% by 2047
- ◆ ICT facilities to be created in each region including ICT parks, incubators, digital data centers, community information centers.
- ◆ Smart City innovations to be deployed in major cities
- ◆ Public places like transport terminals and buses will be connected to internet services
- ◆ Deliver E-Transform Ghana Project to deliver effective, efficient and transparent e-government and economic system
- ◆ Public Private Partnerships (PPP) arrangements in the form of build, operate and transfer (BOT)/special purpose vehicle (SPV) continues to be the preferred option for financing national ICT infrastructure requirements.
- ◆ Ghana established a universal service fund, which

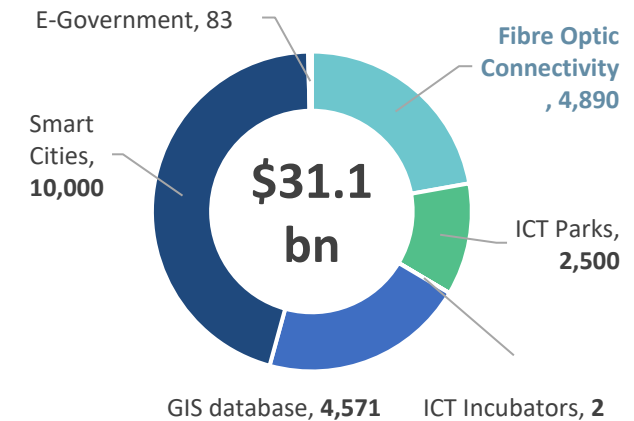
is managed by the Ghana Investment Fund for Electronic Communications (GIFEC) as the implementation agency of the Ministry of Communications to provide financial resources for ICT infrastructure and services to remote and rural communities. Apart from direct funding, GIFEC has also used PPP arrangements to fund some projects.

## INTERNET PENETRATION RATE 2013



Source: USAID Report for Ministry of Communications and GIFEC, 2013

## ICT INVESTMENT





# Waste Management Sector Highlights

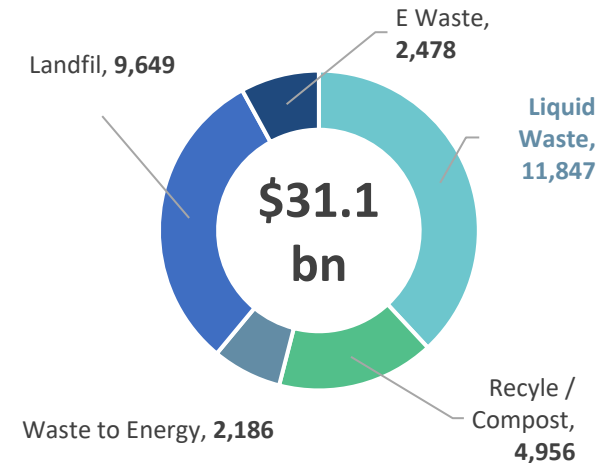
- ◆ The vision is to provide integrated and sustainable waste management and sanitation infrastructure and services that ensure a healthy living environment for all and support agriculture and industrial development.
- ◆ Currently, a little over 50 percent of the population has access to solid waste collection services, expected to increase to 100 percent by 2047.
- ◆ It is projected that about 32 million tonnes of municipal solid waste would be generated per annum during the plan period, up from about 9 million tonnes.
- ◆ Projections suggest that about 1,669,414 m<sup>3</sup>/day of sewage and 11,538 m<sup>3</sup>/day of septage would be generated in the urban communities by 2047.
- ◆ Generally, as the country reaches over 70 percent urbanisation by 2047, it is expected that there would be a shift from use of on-site sanitation systems to off-site (sewerage) systems across the country. It is expected that 70 percent of the urban population and 30 percent of rural population will be served by sewerage system by the end of the plan period.
- ◆ A total of about 149,000 km length of urban sewerage pipelines and 8,660 km length of rural and community
- ◆ An estimated 9 km<sup>2</sup> of land area would be required for landfilling per annum, assuming that about 15 percent of the waste to be treated is residue for landfilling.
- ◆ Local entrepreneurship will be developed and partnerships will be established to take advantage of job opportunities in waste minimisation, recycling and reuse.



## SOLID WASTE MANAGEMENT TARGETS 2047

<b>Metropolitan</b>	Landfill – 35%	Compost / Recycling 50%	Incineration 15%
<b>Municipal</b>	Landfill / Controlled Dump 40%	Compost / Recycling 50%	Incineration 10%
<b>District</b>	Controlled Dump 55%	Compost / Recycling 45%	

## WASTE MANAGEMENT INVESTMENT



# Water, Drainage, Flood Control and Irrigation Sector Highlights

- ◆ The vision is to harness the natural resources of water and land to produce enough food to achieve national food and nutrition security, as well as increase foreign exchange through exports by 2047.
- ◆ During the plan period, about 822,762 hectares will be put under various irrigation systems, forming about 54.9 percent of the estimated irrigable land available countrywide.
- ◆ Public-Private Partnership (PPP) will be exploited

- ◆ There will be provision of underground storm sewers to replace open channels.
- ◆ The effect of urbanisation on flooding is the increase in the volume of runoff and the shorter time of concentration as a result of inadequate channel improvement and high level of paved areas. Land use planning in urban centres to be enforced
- ◆ To be built 1,100 km of primary drains, 2,500km of secondary drains, 2,556 ha of flood retention ponds, 20 lagoons to be dredged

- ◆ The focus will be on financing and investing in coastal protection and capacity-building programmes, including awareness and sensitisation and supporting the development of new coastal policies and regulatory frameworks.
- ◆ Coastal communities will be educated on how to combat coastal erosion and adapt to climate change. Local governments and NGOs could play key roles in this direction.
- ◆ 120km of coastal protection

- ◆ A total number of 204 new Peri-Urban Water Supply Systems to be built, 171 Peri-Urban Water Supply Systems to be upgraded by 2047.
- ◆ 7 new Urban Water Supply Systems to be developed and 42 to be upgraded
- ◆ The water demand per capita will increase from 75 litres per capita per day to about 300 litres per capita per day by 2047.
- ◆ Sea water desalination developments will be given lower priority



## IRRIGATION



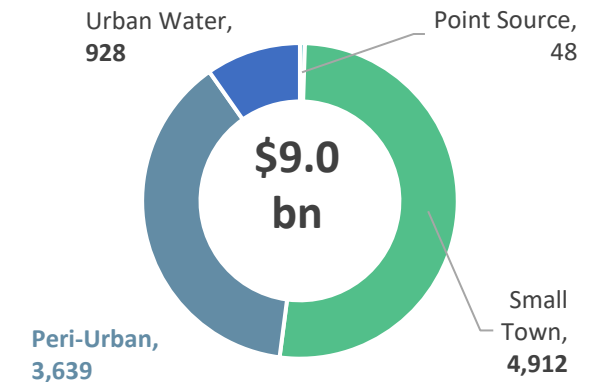
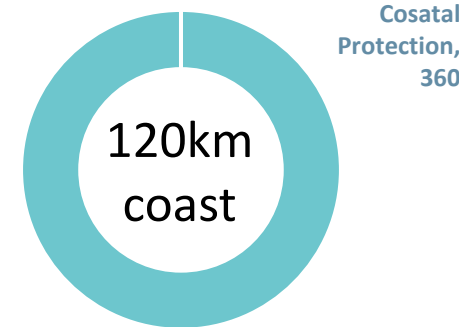
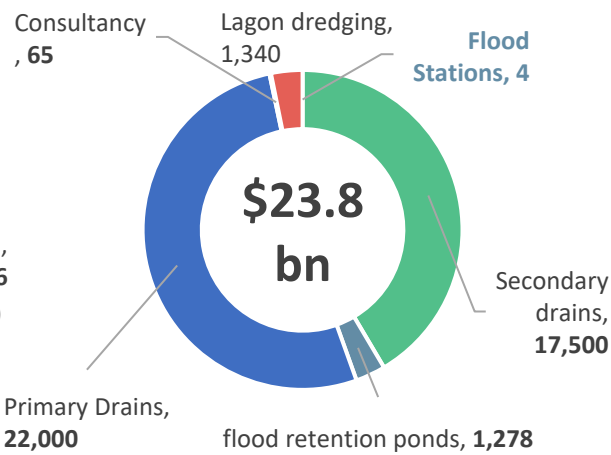
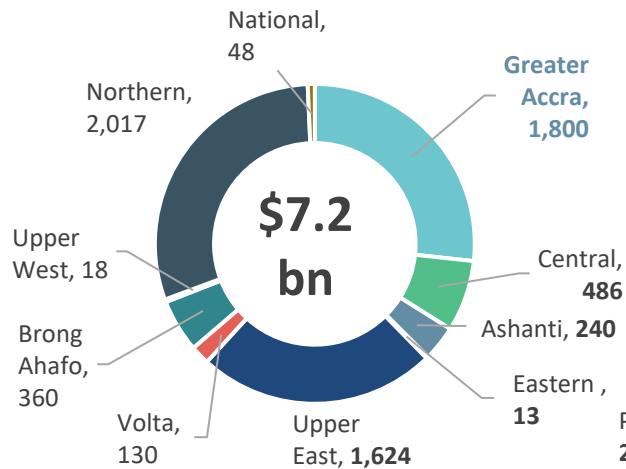
## DRAINAGE & FLOOD CONTROL



## COASTAL PROTECTION



## WATER



Figures is US\$ m

# Financing Highlights

## Government Funding

- Budget Allocation
- Development Partners

## Existing Infra Funding

- Ghana Infra Investment Fund
- Ghana Investment Fund for Electronic Communications
- Ghana Road Fund
- Ghana Cocoa Board Cocoa Roads Fund

There is an expectation in the document that Ghana can finance most if not all of its needs!

### Sources

#### Gains from Efficiencies Gov Revenues to Infra

GETFUND	79.7
ROAD FUND	39.4
GIF	83.8
Property Tax	275.9
GIFEC	

#### Non-Tax

Police	
DVLA	1.9
Tourism	372.6
Reduce Illicit flows	311.4
Leverage Minerals	4.6

#### Domestic Private Sec

Collective Investment	0.1
Holding Gov Debt	
Pension Funds	6.3

**FDI** 2,786.6

**Donor funds** 1.3

**DFI's**

**BRIC's funds**

**Total** **4017.9**

### Uses

#### Energy

Renewable	110.6
Nuclear / Coal	13.0
Petroleum Sector	78.7
Transmission	9.6
Distribution	4.8
	4.6

#### Transport

Roads	220.7
Railway	299.1
Aviation	22.0
Maritime Ports	4.6
Inland Ports	4.3
Inst Development	0.7
	4.6

#### Water Systems

Water Management	8.7
Water Supply	1.2
	7.6

#### Waste Management

Liquid Waste	17.6
Solid Waste	6.9
	10.6

#### Irrigation

**42.7**

#### Drainage, Flood

**900.0**

#### Housing

**10.7**

**19.8**

**Total** **1,114.4**

## Other Sources

- Oil & Gas Revenues
- Reallocation of ABFA
- Stop Illicit Financial Flows
- Remittances
- Labor Export
- Domestic Savings
- Dealing with Corruption
- Reducing Import Exemptions
- PPP's
- Land Value Capture
- Expansion of Tax Revenue
- Developing Industries to provide additional revenue
- Value addition to minerals

Figures in US\$ bn

Additional \$237.4 bn for maintenance not captured above Housing represents approx. 77% of this figure



# Thank you

- ◆ Useful Links
  - ◆ [UK Ghana Chamber of Commerce Website](#)
  - ◆ [NDPC Outline of Ghana Infrastructure Plan 2018-2045](#)

- ◆ [Contact info@ukgcc.com.gh](mailto:info@ukgcc.com.gh)
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