



GHANA

# POLICY ENVIRONMENT PAPER

BERLIN, 2018



**Author:** Edmund Teko (UEMI)

**This publication is part of the Urban Pathways project and the Future Radar project funded by the European Union's H2020 under the grant agreement No 923970 (Future Radar)**

The graphic design was prepared by Barbara Lah (UEMI)

**Berlin, 2018**

**UEMI Secretariat**

Berlin, Germany  
[www.uemi.net](http://www.uemi.net)

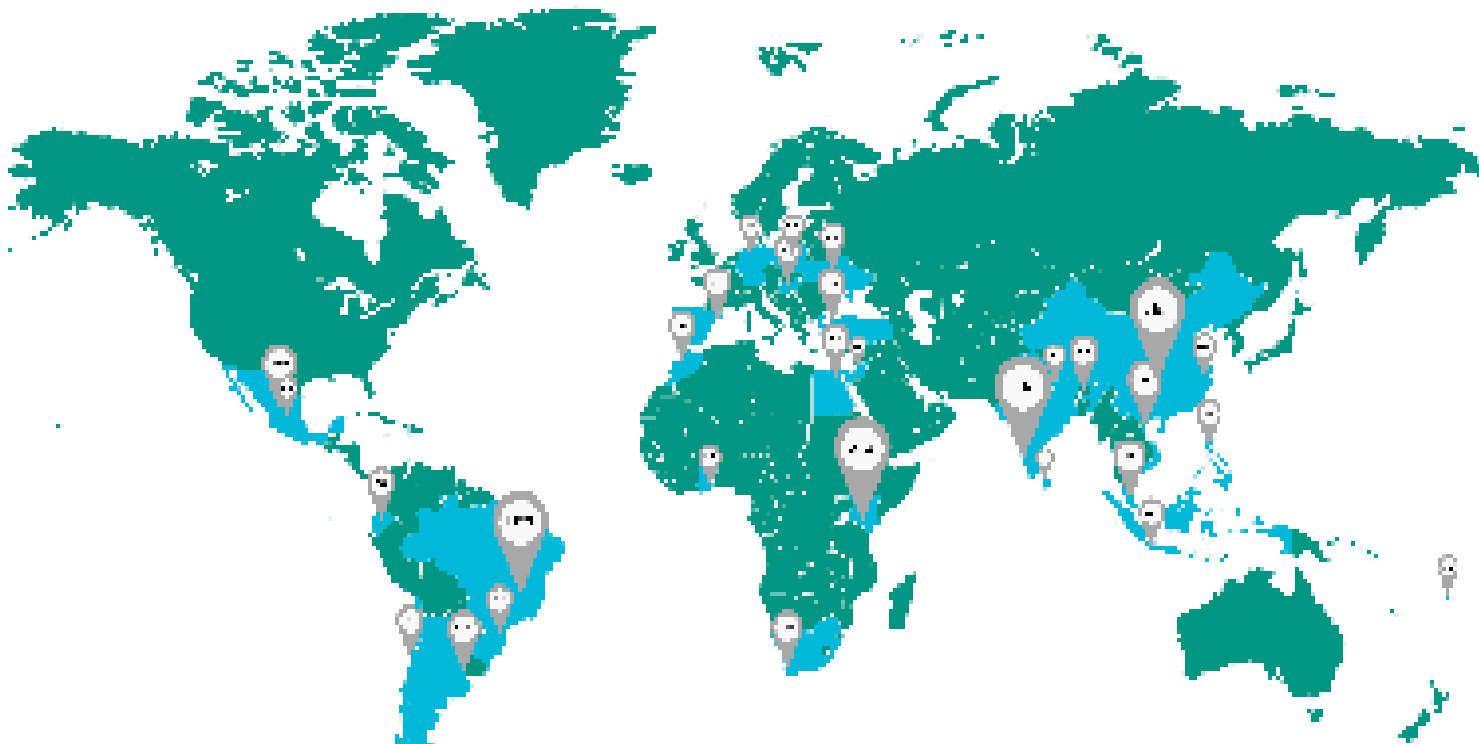


The project has received funding from the European Union's Seventh Framework Programme and Horizon 2020 under the grant agreements no 604714 (SOLUTIONS) and no 923970 (FUTURE RADAR)



GHANA  
POLICY ENVIRONMENT PAPER  
BERLIN, 2018

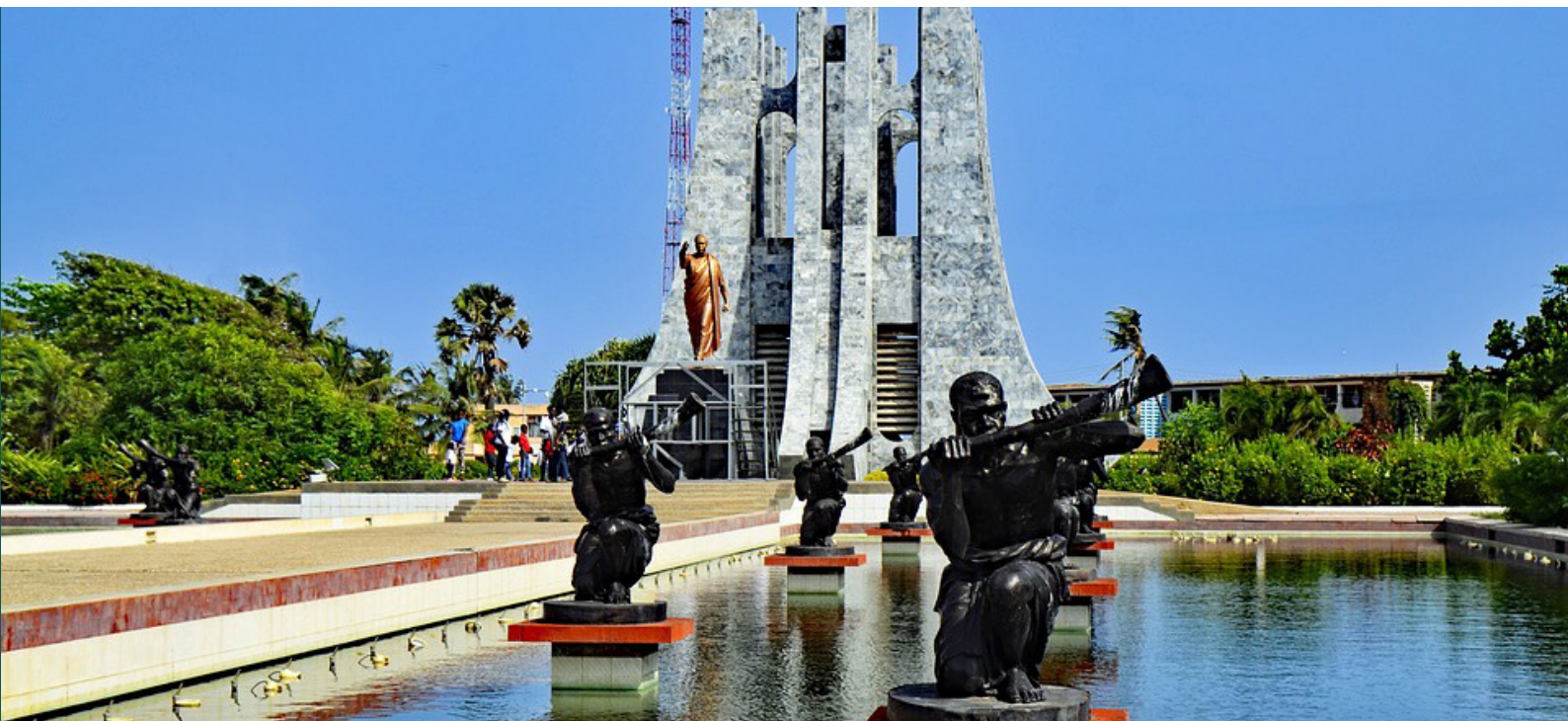




UEMI\_SOLUTIONS CITIES

# ABSTRACT

**T**his paper highlights policy measures in line with Ghana's Intended Nationally Determined Contributions as communicated to the United Nations Framework Convention on Climate Change (UNFCCC) in its obligations under the convention. The paper also reviews government's efforts to keep up with objectives of mitigating greenhouse gas emissions and adapting to climate change effects in the context of the New Urban Agenda. Focus is given to the transport, energy and waste sectors with briefs on some policy strategies undertaken in the capital city of Accra and at the national level.





# COUNTRY OVERVIEW

**G**hana has a land surface area of 238,500 sq.km. The country is located in the Sub-Saharan Africa and borders Togo, Burkina-Faso and Cote D'Ivoire. In 2016, the country's population was estimated at 28,206,728 with an urban population share of 54.6% growing at an annual rate of 3.4%. Major urban areas in Ghana include the capital city-Accra, Kumasi, Tamale and Takoradi. The Ghana statistical Service in its 2010 Population and Housing Census report defined urban areas as towns and localities with a population of 5000 and more. By this definition, many towns in Ghana are considered as urban areas. Ghana's GDP per capita (current USD) stood at 1513 USD in 2016 with a GDP per capita growth rate

of 1.28%. As a lower middle-income country, Ghana strives to improve on its economic performance with a vision of reaching an upper middle-income status by 2020. With this economic drive, the country is mindful of the impacts of its development ambitions on the environment amidst the increase in the country's greenhouse (GHG) emissions over the last decade, reaching a total of 107,784 ktCO<sub>2</sub>e in 2012. Also, the total CO<sub>2</sub> emissions was pegged at 14.46 KtCO<sub>2</sub> with a per capita figure of 0.534MtCO<sub>2</sub> in 2014. Emissions from all sectors of the Ghanaian economy have shown growing figures; suggesting that a Business-As-Usual trend will be environmentally detrimental to the people especially urban dwellers.

## SUMMARY OF GHANA'S NATIONALLY DETERMINED CONTRIBUTION (NDC)

**U**pon ratification in September 1995, Ghana became a party to the United Nations Framework Convention on Climate Change and has since been committed to undertaking environmental initiatives aimed at reducing greenhouse gases and mitigating climate change effects. As part of its Intended Nationally Determined Contributions (INDCs), Ghana committed to unconditionally reduce its greenhouse gas (GHG) emissions by 15% compared to the Business-As-usual (BAU) scenario emission of 73.95MtCO<sub>2</sub>e by 2030. Ghana's INDCs consists of 20 mitigation and 11 adaptation programme actions. The adaptation goal is to increase climate resilience and decrease vulnerability for enhanced sustainable development. There are 9 programmes of actions expected to be delivered in the energy sector, 1 programme in the transport sector and 3 in waste management. As a policy action to reduce emissions from the transport sector, Ghana is committed to promoting sustainable mass transportation through the development of Bus

Rapid Transit in 4 major cities. This action is expected to contribute to an abatement potential of 1.63 MtCO<sub>2</sub>e by 2040 considering the mitigation measures proposed by the country (Government of Ghana, 2015). As part of its adaptation measures, Ghana intends to plan for city-wide resilient infrastructure by adopting building standards for strategic infrastructure in transport, energy and waste management in 10 urban administrative regions. This policy action will be supported by the Local Government Act 462 and National Building Regulation.

For the energy sector, Ghana's intended policy actions include: the scaling up of renewable energy penetration by 10% by 2030, promotion of clean rural households lighting, expansion of market-based cleaner cooking solutions, and doubling energy efficiency improvement to 20% in power plants. In order to increase renewable energy penetration, the

country's intended efforts are geared towards the following programmes: increase small-medium hydro installed capacity up to 150-300MW; attain utility scale wind power capacity up to 50-150MW; attain utility scale solar electricity installed capacity up to 150-250MW; establish solar 55 mini-grids with an average capacity of 100kW which translates to 10MW; scale up 200,000 solar home systems for lighting in urban and selected non-electrified rural households. In promoting clean rural households lighting, the government plans to increase solar lantern replacement in rural non-electrified households to 2 million. The markets for cleaner cooking solutions are expected to grow by promoting the adoption of Liquefied Petroleum Gas use from 5.5% to 50% of peri-urban and rural households and by increasing access and adoption of 2 million efficient cook stoves. Ghana also in its quest to minimize emissions from electricity generation, has committed to replace light crude oil with natural gas in its thermal plants. The aforementioned policy actions are expected to be implemented within the framework of the following policy instrument: National Energy Policy, National renewable energy

Act (Act 832), Sustainable Energy Action Plan, National bioenergy strategy, Sustainable Energy Action Plan, National Natural Gas Master Plan, National Liquefied Petroleum Gas Programme and National Natural Gas Master Plan.

With respect to waste management, Ghana intends to adopt alternative forms of managing waste by: improving effectiveness of urban solid collection from 70% to 90% by 2030 and disposing waste to an engineered landfill for phase-out methane recovery from 40% in 2025 to 65% by 2030. The country also plans to build 200 institutional biogas facilities specifically in senior high schools and prisons throughout the country and double the waste to compost installed capacity of 180,000tonne/annum by 2030. Achieving these actions will necessitate the adherence and implementation of the following policy national policy measures: National sanitation strategy. National bioenergy strategy, National renewable energy Act (Act 832), Environmental Protection Act (Act 490), Environmental Assessment Regulation (LI. 1652), and Sustainable Energy Action Plan.





# POLICIES AND STAKEHOLDER MAPPING

## Political background

Ghana's political governance is grounded in its decentralization policy where national, regional and local government structures play variety of roles in the planning, formulation and implementation of programmes, projects and activities to better the lives of citizens. The governance policy in Ghana emphasizes on participatory and consultative approach to development. In this regard, the Local Government Act 462 of 1993 amended by the Local Governance Act 936 of 2016 makes legal and regulatory provisions for a participatory and consultative process in decision-making at the local level. By this arrangement, national Ministries, Departments and Agencies (MDAs) exist to formulate sector-level policies and guidelines to direct the economic drive of the country; whilst Metropolitan, Municipal and District Assemblies (MMDAs) acting under these policy guidelines deliver concrete programmes, projects and actions at the grassroot level. There are currently 254 MMDAs in Ghana whose activities are monitored and evaluated by the Regional Coordinating Councils represented in all 10 administrative regions in Ghana.

MMDAs also have deliberative, legislative and executive functions; and are the planning authorities with the responsibility for the total development of areas under their respective jurisdictions. Despite this comprehensive decentralisation system, the implementation of some sectors' activities continues to be at the purview of national institutions. For instance, the energy sector roles ranging from energy production, transmission, distribution and management have been largely played by MDAs. The execution of transport and waste sector projects however mostly remain under the control of MMDAs. As Ghana is faced with the challenges of limited budget resources and inadequate capacity to fully provide all infrastructure and services need of the population, the country has liberalised public infrastructure development and service delivery with the aim of leveraging public assets with private sector resources to adequately provide for the populace. In this regard, a comprehensive Public-Private Partnership (PPP) Policy has been formulated in 2011 to set the framework for private sector participation in the delivery of public needs.



# ENERGY

In Ghana, electricity is generated by three (3) major groups of institutions namely: the Volta River Authority (VRA), Bui Power Authority (BPA) and Independent Power Producers (IPP). Transmission is done by the National Interconnected Transmission System (NITS) owned and operated by the state-owned Ghana Grid Company Ltd (GRIDCo). Electricity is finally distributed to consumers by two (2) state owned companies: - the Electricity Company of Ghana (ECG) responsible for the southern sector of Ghana including Accra; and the Northern Electricity Distribution Company (NEDCo) which distributes electricity to the northern sector of Ghana (Government of Ghana, 2010). Also, the Ministry of Power formulates for energy sector policies, while regulation of the sector is performed by the Energy Commission (EC) and the Public Utilities and Regulatory Commission (PURC). Ghana's electricity generation

mix is 41.6% Hydro, 57.8% thermal and 0.6% renewable. Electricity access as at 2016 is estimated to cover about 82.5% of the Ghanaian population. Though the government of Ghana is committed to achieving universal electricity coverage by 2020, electricity supply remains inadequate with intermittent power cuts. This according to the 2010 National Energy Policy is mainly due to inadequate generation capacity as a result of fuel shortage, transmission losses and poor tariff structure (Government of Ghana, 2010). In order to improve the sector, the government has outlined the following objectives in a proposed Energy Sector Transformation Initiative Project to the World Bank; these include: restoring the power sector's financial viability; improving sector planning and investment decisions; improving the regulatory framework; and expanding electricity access to remote communities (World Bank, 2017).



# MOBILITY

The National Transport Policy sets actions to promote sustainable transportation by prioritizing mass transport (such as BRT) in urban areas to move at least 80% of passengers; and discourage private car ownership. The following government policy actions as stated in the National Transport Policy are supportive of the deployment of more cleaner transport solutions in cities in Ghana: the promotion of fuel efficiency, conservation and pollution control measures for road transportation (for example the limitation placed on the importation of used vehicles through increased taxes and imposition of tax penalties ranging from 5% to 50% on vehicles and engines more than 10 years old); Government's sup-

port for investments in transport infrastructure that provide social and environmental benefits. Again, the National Transport Policy acknowledges the link between the energy and transport sectors and sets out to develop joint development and application of research on energy technologies in the transport sector. The technical skills for transport infrastructure constructions and maintenance is however limited.

In Ghana, the Ministry of Transport formulate national policies and guidelines whilst Local government authorities plan and regulate transport activities within the respective jurisdictions through their Transport Departments.

# WASTE MANAGEMENT

Waste management in Ghana is largely the responsibility of Metropolitan, Municipal and District Assemblies which are expected to implement waste management projects and activities as set out in their respective District Environmental Sanitation Strategy and Action Plans. These plans are guided by the National Environmental Sanitation Strategy and Action Plan (NESSAP) of 2010. At the national level, waste management is coordinated and facilitated by the Environmental Health and Sanitation Directorate of the Ministry of Local Government and Rural Development (MLGRD). The rate of solid waste generation is estimated at 0.75kg/capita/per day for urban areas and 0.45/capita/per day for smaller towns Liquid waste is generally composed of

household, institutional and industrial waste. Waste management in Ghana is characterized by more emphasis on collection and transport than treatment and final disposal (Agyepong, K. A., 2018). Consequently about 85% of solid waste generated are not properly disposed; a situation which is deemed as environmentally damaging; and is expected to worsen especially as the urban population continue to grow at a rapid rate (MLGRD, 2010).

In order to derail this phenomenon, the NESSAP adopts and emphasizes on the "material in transition" concept which is to encourage implementing agencies and stakeholders to add value to waste within the production and consumption cycle.

# CITY EXAMPLE: ACCRA

Motorisation in Ghana, is evidently growing at a rapid pace with an estimated number of 2,098,726 vehicles registered in 2016, representing a 300% increase from 2000. It is estimated that Accra alone hosts about 50% of the total registered vehicles nationwide numbering to about 1,134,599 vehicles by 2017 (EPA, 2017). Again, a major concern in Accra is the importation and use of secondhand vehicles, which have been described as energy inefficient. In fact, 83% of imported vehicles into Ghana are reported to be secondhand vehicles (Dushie, Fenny, et al., 2017). At this rate of motorisation, the EPA stated that the transport sector in Ghana accounted for 20% of the total national GHG emissions which was 33.66 million tons of CO<sub>2</sub> equivalent (MtCO<sub>2</sub>e) in 2012. The sector also remained the third largest contributor to the total GHG emissions increasing from 4.8MtCO<sub>2</sub> in 2010 to 6.45MtCO<sub>2</sub> in 2012 (Dushie, Fenny, et al., 2017).

The population of the city as at 2014 was estimated at 2.27 million people (World Population Review, 2018). With the population increasing at a rate of 4%, Accra is noted to be among the fastest urbanizing cities in Africa (Atlas of Urban Expansion, 2016). In Accra,

most trips are made by private cars, taxis, mini-buses (called trotro) and buses; the latter three constituting the core of public transport services in the city. In line with the agenda on promoting mass transportation in Ghana, city authorities in Accra embarked on a BRT Project in 2008 which was expected to be deployed by 2012. The project was however launched in 2016 as a Quality Bus System (QBS) without dedicated bus

lanes. Currently, the Greater Accra Passenger Transport Executive (GAPTE) runs 45 buses mainly on one route within the capital city of Accra. It must be mentioned however, that all the buses run on fossil fuel.

In the energy sector, Ghana is making efforts to increase the share of renewable energy in its power generation aiming to achieve a target of 10% renewable in its mix by 2020. As such the Government has advanced processes to procure 70MW solar plants for supply of electricity under an independent power producer arrangement. Government energy policies are also geared towards the development of alternative transportation fuels to help diversify and secure future energy supplies of Ghana. There is also government support for decentralised off-grid alternative technologies (such as solar, Photovoltaic and wind)



in case they are competitive with conventional electricity supply.

Considering the waste management challenges facing the country, Ghana's current efforts in the waste sector are aimed at using integrate waste management approaches focusing on recycling waste to energy and other valuable products. Examples of such initiatives include the promotion of waste-to-energy facilities at the household and institutions level, waste-to-compost for farming purposes, and disposal of residual waste at well-engineered landfills. Again, in Ghana particularly in the major cities such as Accra, the waste sector has been liberalized to encourage private sector participation; as such many local government authorities use the services of private companies in the collection, transportation and disposal of urban waste.



uemi  
solutions

## REFERENCES

**Agyepong, K. A., 2018.** Waste Management Options in Ghana, Future Strategy. Available at: <http://www.imaniafrica.org/2018/04/12/waste-management-options-ghana-future-strategy/> [Accessed 30-05-2018].  
**Atlas of Urban Expansion, 2016.** Accra. Available at: <http://www.atlasofurbanexpansion.org/cities/view/Accra> [Accessed 01-05-2018].

**Dushie, D., Fenny, A. P. and Crentsil, A. O. 2017.** Vehicular Emissions and Its Implications on the Health of Traders: A Case Study of Traders in La Nkwantanang Municipality in Ghana. *Journal of Sustainable Development*, 10 (6), pp. 241.

**EPA, 2017.** Roadmap for the Promotion of Cleaner Buses in Accra, Ghana. Available at: <https://wedocs.unep.org/bitstream/handle/20.500.11822/21447/Final%20Roadmap%20for%20the%20Promotion%20of%20Cleaner%20Buses%20in%20Accra%20Ghana.pdf?sequence=1&isAllowed=y> [Accessed 01-05-2018].

**Government of Ghana, 2010.** Ghana National Ener-

gy Policy, 2010. Available at: [http://www.petrocom.gov.gh/assets/national\\_energy\\_policy.pdf](http://www.petrocom.gov.gh/assets/national_energy_policy.pdf) [Accessed 08-05-2018].

**MLGRD, 2010.** National Environmental Sanitation Strategy and Action Plan (NESSAP), 2010. Available at: [https://www.washwatch.org/uploads/filer\\_public/17/d6/17d6514d-92da-4e54-bd23-e0675155ece9/nessap\\_final\\_version.pdf](https://www.washwatch.org/uploads/filer_public/17/d6/17d6514d-92da-4e54-bd23-e0675155ece9/nessap_final_version.pdf) [Accessed 30-05-2018].

**World Bank, 2017.** Ghana - Energy Sector Transformation Initiative Project Project Information Document/ Integrated Safeguards Data Sheet (PID/ISDS). Available at: <http://documents.worldbank.org/curated/en/113361506945896741/pdf/Concept-Project-Information-Documents-Integrated-Safeguards-Data-Sheet-Ghana-Energy-Sector-Transformation-Initiative-Project-P163984-Sequence-No-00.pdf> [Accessed 30-05-2018].

**World Population Review, 2018.** Ghana Population. Available at: <http://worldpopulationreview.com/countries/ghana-population/>. [Accessed 01-05-2018].

# UEMI\_SOLUTIONS



The project has received funding from the European Union's Seventh Framework Programme and Horizon 2020 under the grant agreements no 604714 (SOLUTIONS) and no 723970 (FUTURE RADAR)



**Wuppertal  
Institut**

**UN HABITAT**  
FOR A BETTER URBAN FUTURE

More information about  
UEMI\_SOLUTIONS can be found at:

**[WWW.UEMI.NET](http://WWW.UEMI.NET)**