

**INTERNATIONAL WORKSHOP ON OFFSHORE GEOLOGICAL  
CO<sub>2</sub> STORAGE,  
April 19 – 21, 2016, Austin, Texas**

**Country Status and Needs Assessment  
Reports and Discussions  
GHANA**

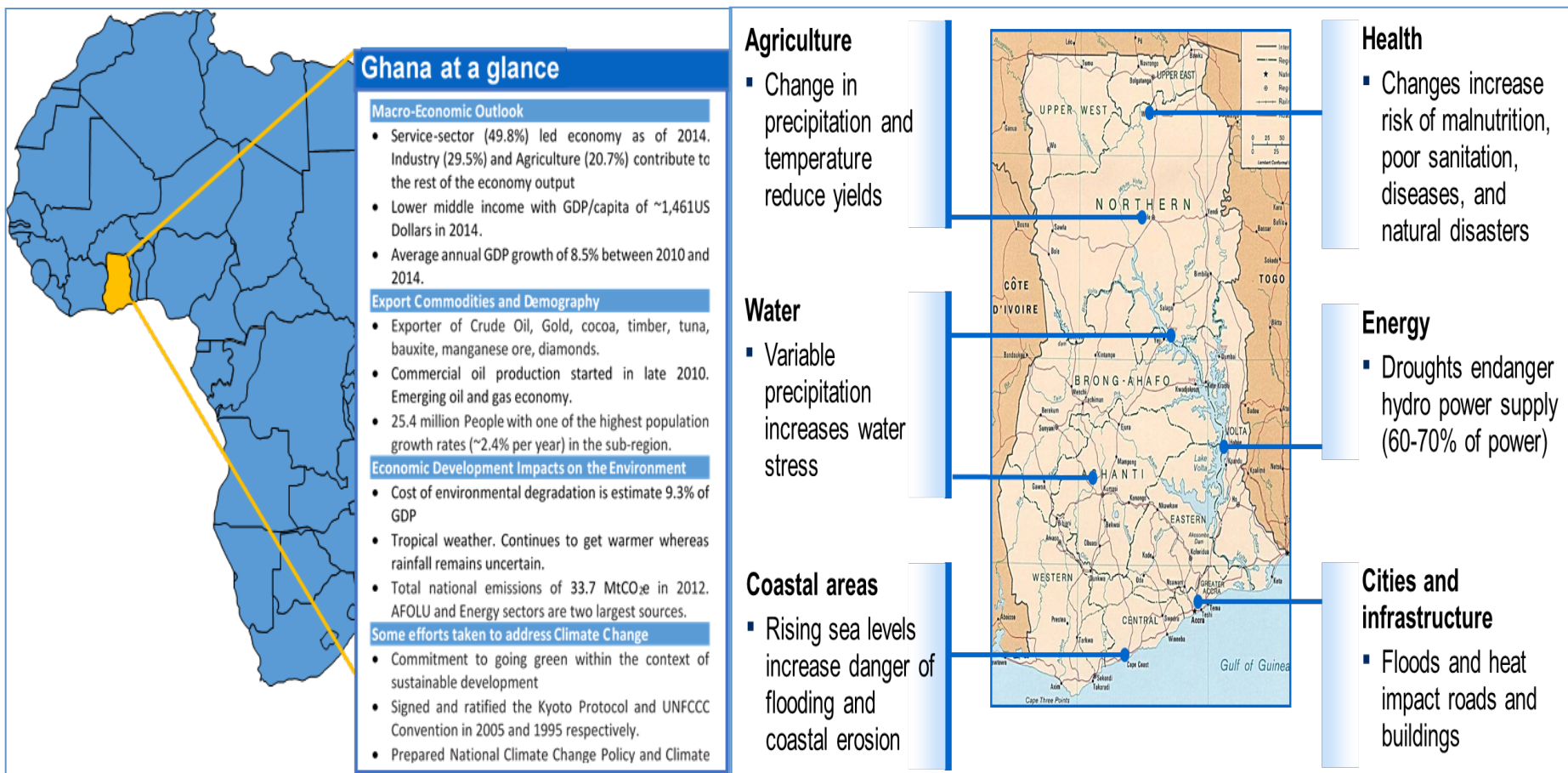
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# GHANA

## national circumstances for its INDC

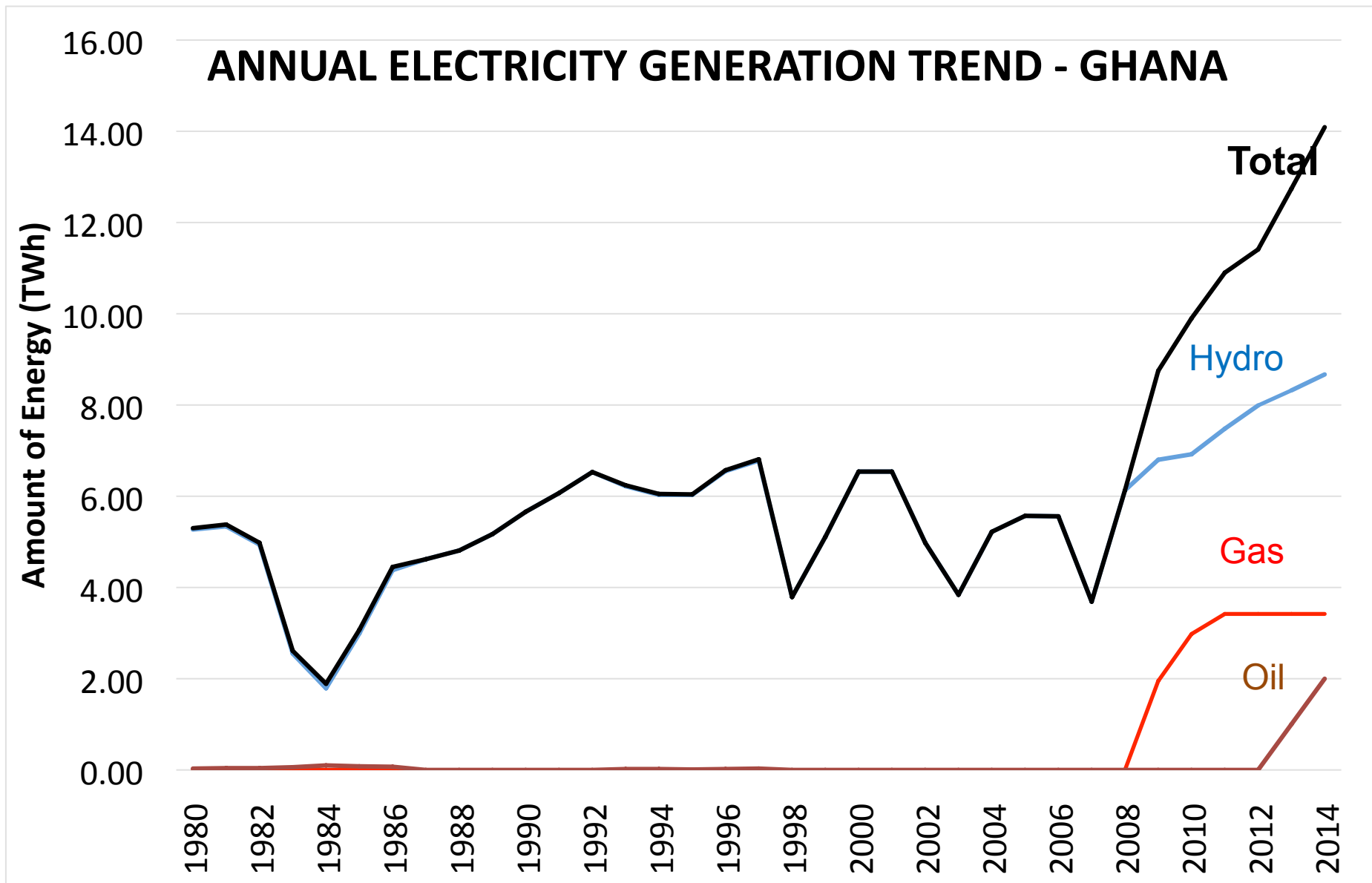


Socio-economic aspects

Vulnerability spread

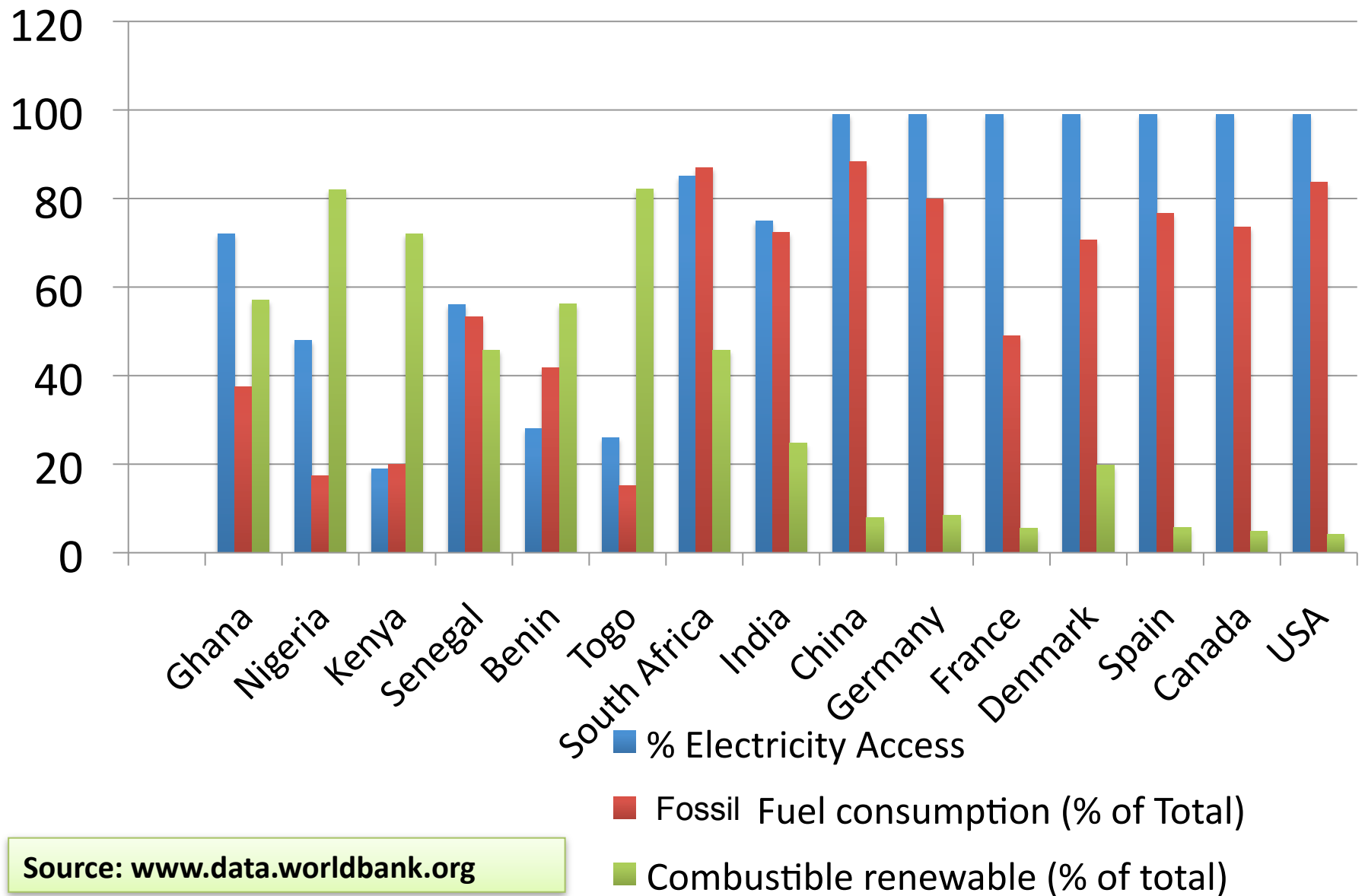
# Status of CO<sub>2</sub> source and capture identification

- **Sources identified?**
  - ❖ Electricity production from thermal sources
  - ❖ Oil Refinery
  - ❖ Cement production
  - ❖ Aluminium smelting
  - ❖ Iron and steel production
  - ❖ Mobile sources – *transportation difficult*
- **Capture feasibility, method and cost assessment?**
  - None yet
- **Engineering readiness?**
  - None yet



- **Increasing dependent on thermal power – Oil & Gas**

# Grid Electricity Access & Fossil Fuel Consumption



Source: [www.data.worldbank.org](http://www.data.worldbank.org)

# OVERVIEW

## Primary Energy Situation in Africa

- **Current Africa's population over 1,000 million**
  - Accounts for ~ **13-14%** of world population
  - Over **80%** in Sub Saharan Africa
  - *But 60-70%* live in rural and remote areas (*without access to modern energy like electricity or gas*).
  - **Lower Level** of Economic Development; *large rural agricultural sector*
- **Share of world primary energy consumption ~3%**
  - Traditional biomass still accounts for **60-90%** of primary energy consumption particularly in homes
  - **Very low levels of Electrification <30%** (*Bad quality; often intermittent, if available*)

# AFRICA'S ELECTRICITY COVERAGE

- **Urban & Rural share of Electricity**
  - **North Africa >90%**
    - >Urban 99%; > Rural 80%
  - **South Africa 70-90%**
    - >Urban 99%; Rural 60-70%
  - **Sub Saharan 20-60%** *(excluding South Africa)*
    - >Urban 50-70%; Rural <15%

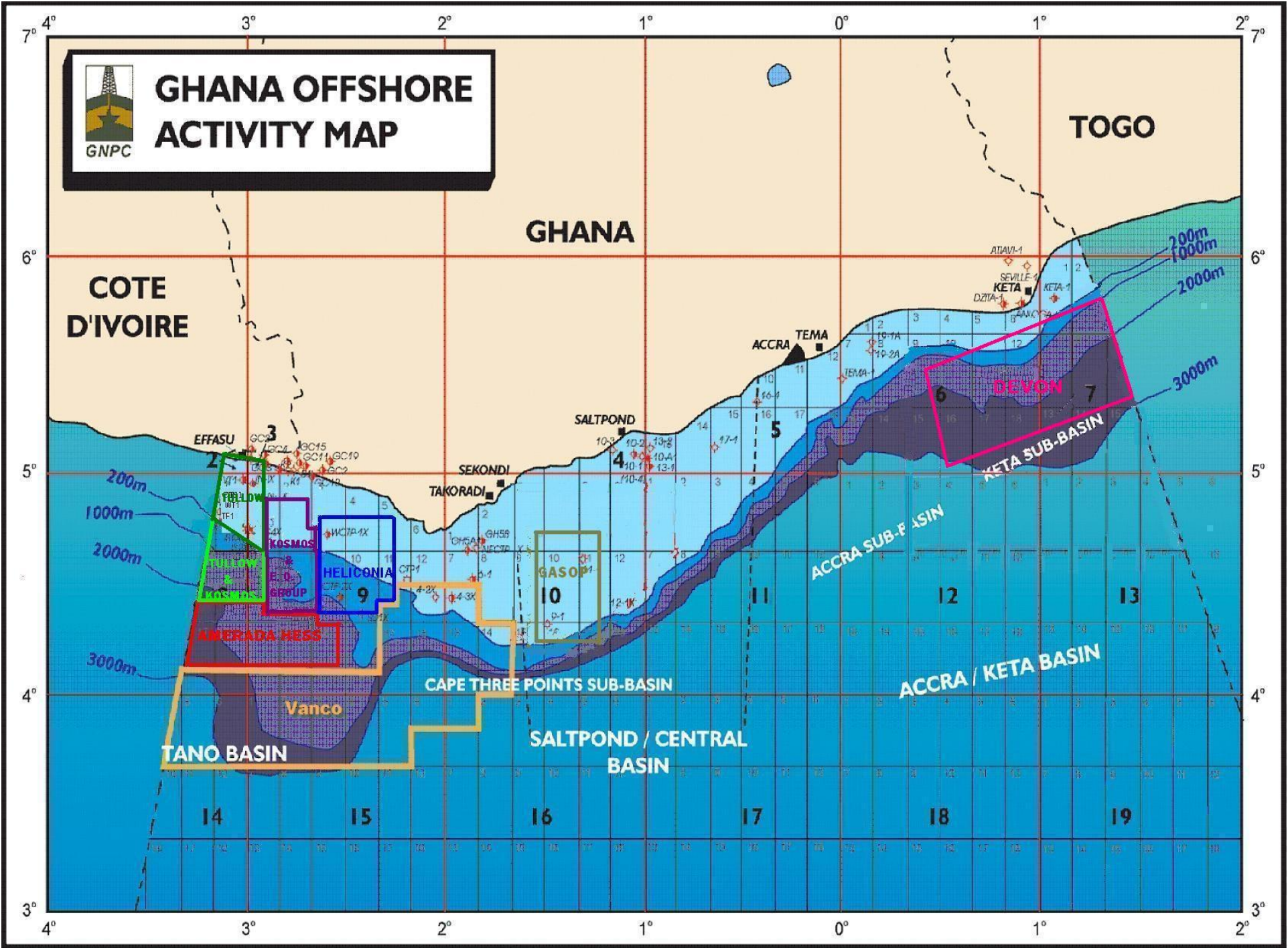
# Status of Offshore Geologic Storage Assessment

- Identification of prospective offshore geologic storage locations? **None yet**
- Evaluation of storage sites? **None yet**
- Risk assessment? **None yet**
- Engineering readiness? **None yet**
- Monitoring strategy? **None yet**
- Rank offshore versus onshore options? **None yet**



# Geological similarities with Brazil's pre-salt attract investments to Western Africa





## Policy readiness for offshore storage

- National policy status?
- Regulatory readiness ?
- Value and economic readiness?

None Yet to develop but hope to look to advanced countries with similar geologic features for help

# Public knowledge and acceptance

- Status of public knowledge?
  - Very little
- Public opinion of offshore CCS
  - Does not exist yet
- Readiness to pay?
  - No studies yet.

## Significant CO<sub>2</sub> emitters 2005-2010

<u>Country/Region</u>	<u>Billion tCO<sub>2</sub></u>	
	<u>Min*</u>	<u>Max*</u>
United States	5.77	5.78
Other industrialised countries (38)	8.2	8.4
Middle level dev. countries (15)	4	5
China	5.10	6.01
India	1.1	1.4
Poor and developing countries	3	4
	<u><b>Total</b></u>	<u><b>31</b></u>
<i>Africa's emissions</i>	0.83	0.88
	<i>Ghana</i>	<i>0.020</i>

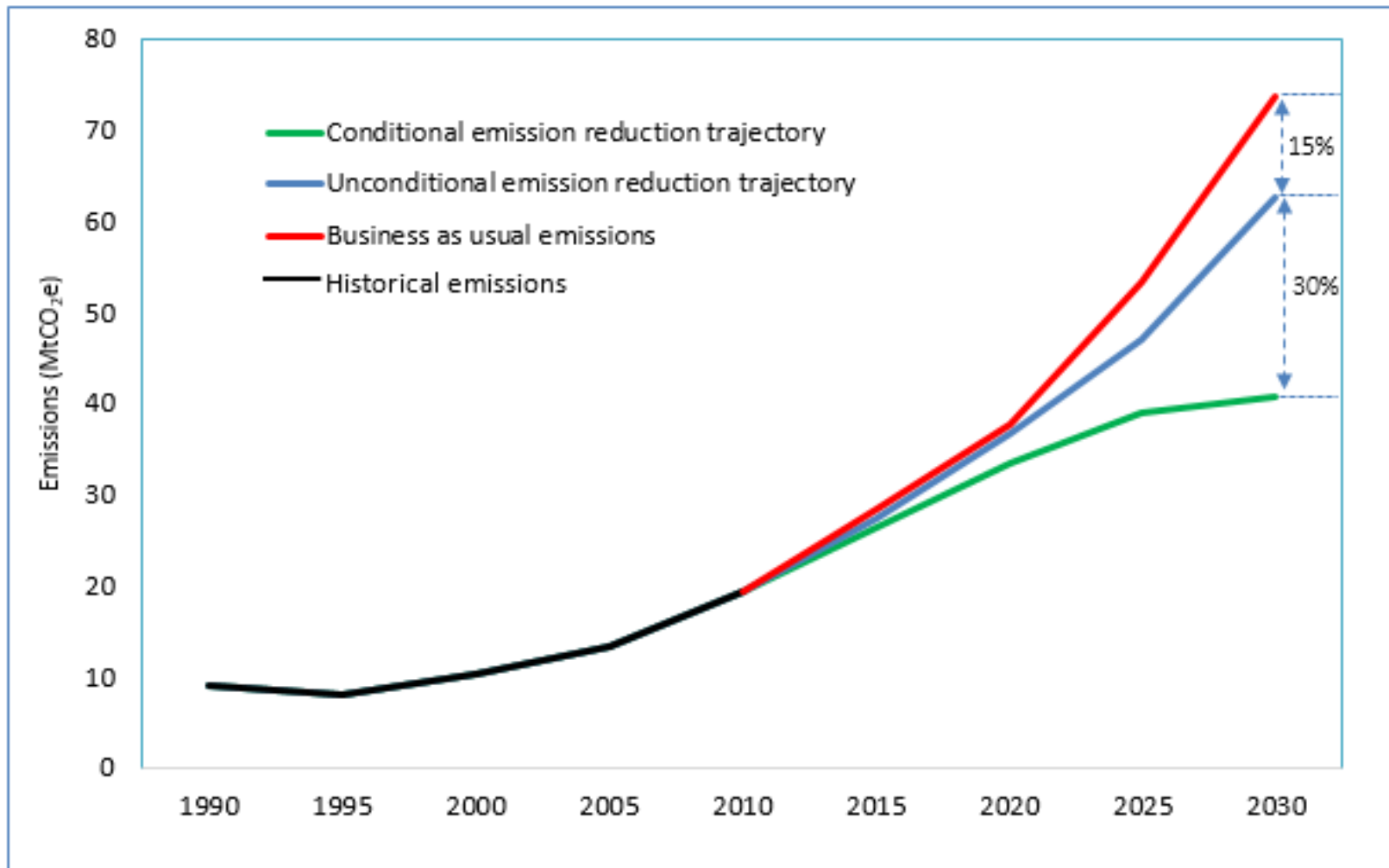


Estimated (Sources: IEA, UNFCCC )

# Headline Mitigation Goal for the PARIS AGREEMENT

- 1) Ghana's emission reduction goal is to **unconditionally lower its GHG emissions by 15 percent** relative to a *business-as-usual (BAU) scenario emission of 73.95MtCO<sub>2</sub>e by 2030.*
- 2) An **additional 30 percent** emission reduction is attainable on **condition** that **external support** is made available to Ghana to cover the **full cost of implementing** the mitigation action (finance, technology transfer, capacity building).
- 3) With this external/international support, a total emission reduction of **45%** *below the business-as-usual (BAU) emission levels* can be achieved by **2030.**

# GHG emissions reduction trajectory

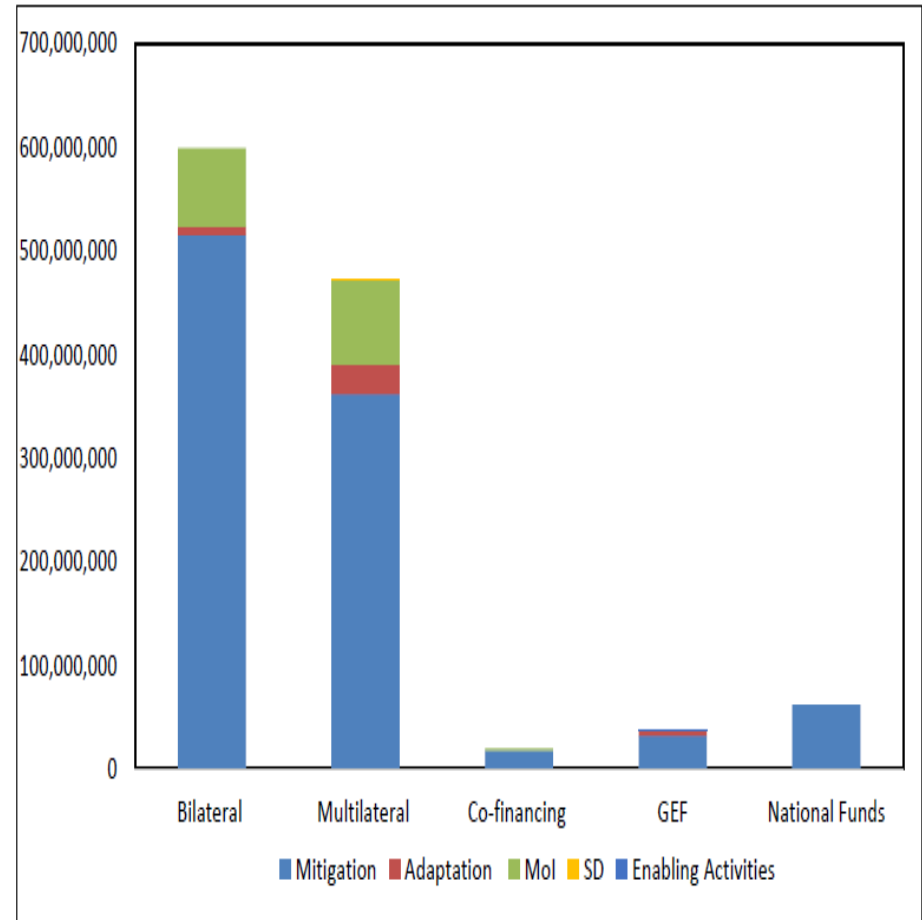
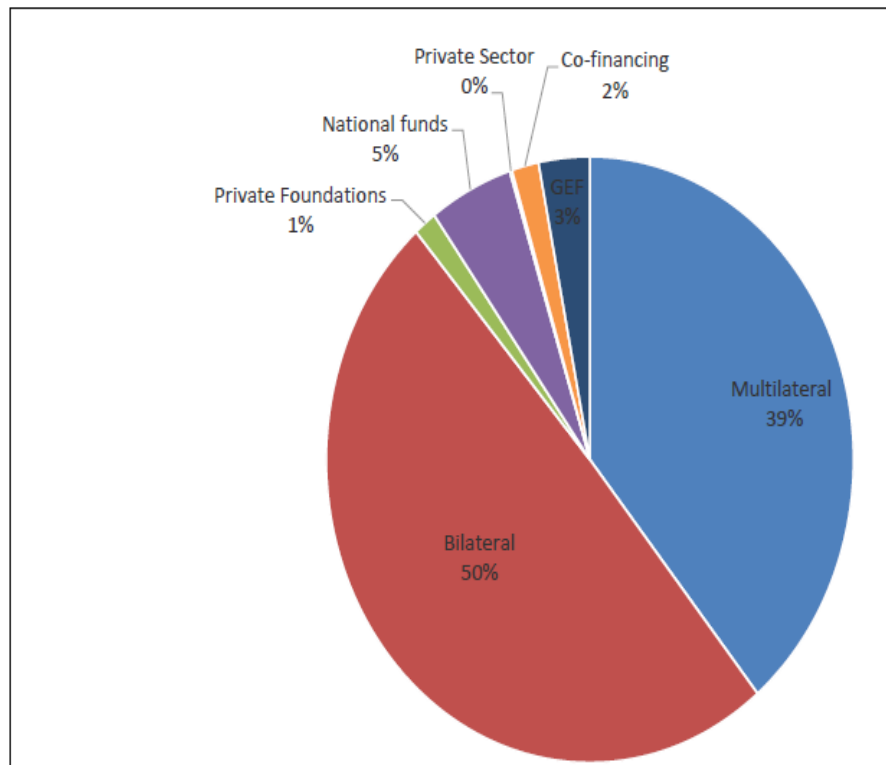


## Next steps toward implementation (NDC Readiness)

1. Developing a “10-year (2020-2030) enhanced **Climate Action Plan**”
2. *In the 10-year period*, Ghana needs **USD 22.6 billion** in investments from domestic and international public and private sources to finance these actions.
  - ❖ **USD 6.3 billion** is expected to be mobilized from **domestic sources**
  - ❖ **USD 16.3 billion** expected from external **DONOR** support



# International climate finance flows to Ghana (2011-2014)



# SUMMARY OF MOBILIZATION OF FUNDS FOR GHANA iNDC

## *The Way forward – sources*

No	Sources	Indicative Amounts (\$) (Billion)	% of total investment
<b>Domestic sources</b>			
1	National Budget	1.4	6.2
2	Corporate Social Responsibility	1.7	7.5
3	Commercial facilities	3.2	14.2
<b><i>International DONOR sources</i></b>			
3	Green climate fund	??	??
4	Other multilateral fund funds	??	??
5	Bilateral agreements	??	??
6	Private capital investment	??	??
7	International carbon market	??	??
<b>Total</b>		<b>22.6</b>	<b>100</b>

# Next Steps

## To Facilitate Implementation and Compliance to the Paris Agreement

1. Ghana's President joins other Heads of State to participate the UN Secretary General's **Signing of the Paris Agreement on 22<sup>nd</sup> April 2016** in New York.
2. Ghana to go through *ratification process* for parliamentary approval of agreement including Cabinet approval and consultations (Art 21 of the Agreement).
3. Ghana to deposit the **instrument of ratification by 22<sup>nd</sup> April, 2017** at the UNFCCC.
4. *Turning the iNDCs to Nationally Determined Contributions (NDCs)* i.e. Develop Ghana *NDC implementation Action Plan*
5. Preparation of an **investment plan to fund the NDCs.**
6. Support **capacity building** in country of the **various opportunities** in the climate regime

**Thank you !!**