



Green Hydrogen in Ghana: Analysis of the Capacity Gap of Public Institutions



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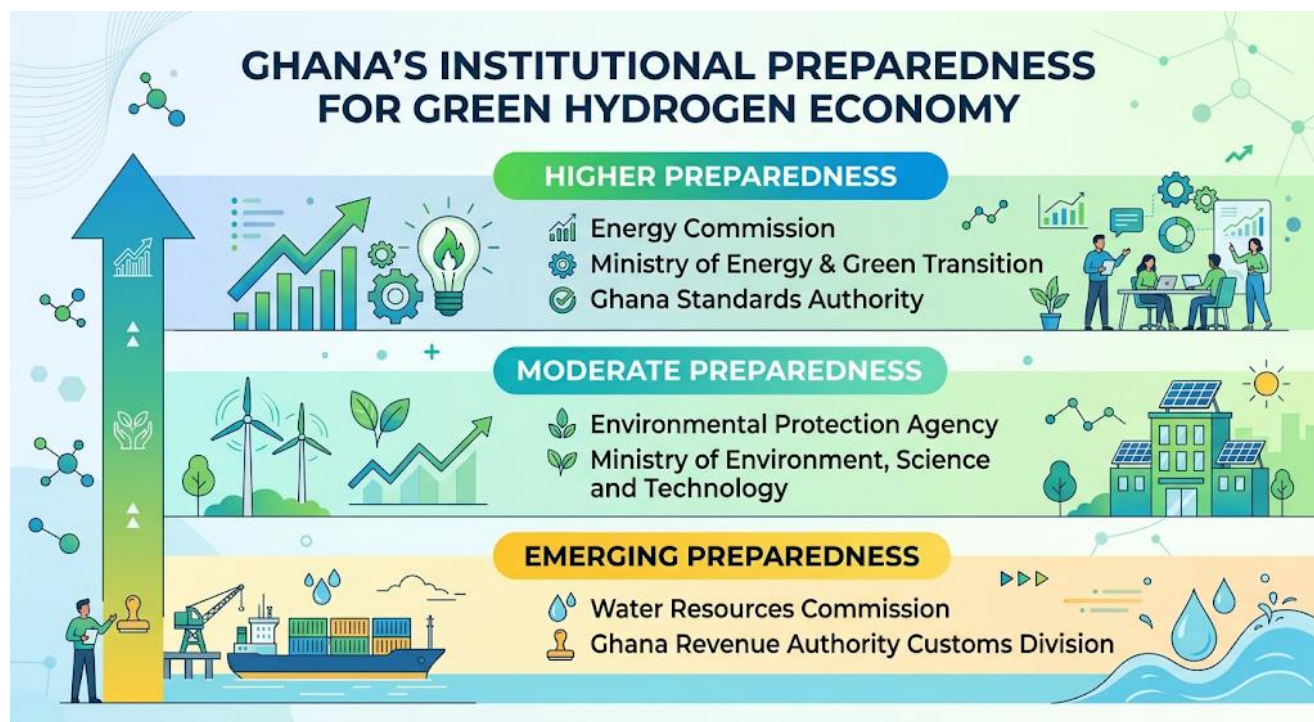
Summary

This factsheet presents the key findings of a capacity gap assessment conducted under the AHK Ghana H2 Project to evaluate the readiness of public institutions to regulate, support, and facilitate the development of green hydrogen in Ghana. The analysis assessed the legal and regulatory framework, institutional preparedness, stakeholder perspectives, and capacity-building needs of relevant ministries and agencies.

Ghana has strong potential to develop a green hydrogen economy due to its renewable energy resources, growing energy transition agenda, and strategic location. However, the absence of a dedicated national hydrogen policy and limited institutional capacity remain significant constraints.

Key Findings

Policy & Regulation	Institutional Readiness
• No dedicated National Green Hydrogen Strategy currently exists. • Existing frameworks (e.g., Renewable Energy Act, National Energy Transition Framework) provide only a partial foundation. • Regulations for production, storage, transport, safety, and certification are lacking.	• Government institutions are generally open to supporting initiatives. • Technical expertise remains limited across most public agencies. • Weak inter-agency coordination contributes to regulatory delays and uncertainty.
Human Capacity	Investment Environment
Severe skills shortages exist in: • Hydrogen policy development • Safety standards and regulation • Electrolysis technologies • Storage and transport • Renewable energy integration • Power-to-gas system modelling	• High capital costs and uncertain market mechanisms discourage investment. • Import and customs procedures are not yet adapted for hydrogen technologies.



Overall, institutions demonstrate growing awareness and willingness to engage, but most require targeted technical, regulatory, and operational support before effectively governing a hydrogen sector.

Recommendations for strengthening the Institutional Capacity

1. Develop a National Green Hydrogen Strategy (short-term)

Establish a comprehensive framework covering:

- Production and storage regulations
- Safety requirements
- Certification systems
- Market development mechanisms
- Alignment with Ghana's net-zero ambitions and ECOWAS objectives.

2. Establish a Green Hydrogen Coordinating Committee (short-term to long term)

Create a platform led by the Ministry of Energy to strengthen coordination among regulators, ministries, academia, industry, and project developers.

3. Build Technical and Regulatory Capacity (short-term to long term)

Implement structured training programmes for policymakers, regulators, engineers, customs officials, environmental specialists, and standards experts.

4. Develop a National Code of Practice (short-term to long term)

Led by the Ghana Standards Authority and the Kwame Nkrumah University of Science and Technology, the code should provide guidance on:

- Production through renewable-powered electrolysis
- Storage and transportation
- Safety management
- Environmental requirements
- End-use applications including mobility, power generation, and industrial processes.

5. Strengthen Public-Private Collaboration (short-term to long term)

Expand engagement with pilot projects such as:

- Green Hydrogen for Decentralised Energy Systems in Sub-Saharan Africa (GH2GH)
- Smart Mini-Grid and Green Hydrogen (SM4GH2)

- Enertrag Ghana
- West African Science Service Centre on Climate Change and Adapted Land Use (WASCAL) initiatives

to accelerate knowledge transfer and practical learning

Outlook

Ghana possesses the institutional foundation and renewable resource potential required to establish a future green hydrogen economy. While current regulatory and capacity gaps remain substantial, ongoing pilot projects, regional policy support, and growing stakeholder interest provide a strong basis for progress. Accelerated policy development, institutional coordination, and targeted capacity building will be critical to positioning Ghana as a regional leader in green hydrogen and supporting the country's long-term energy transition objectives.



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