Building a Green Hydrogen Centre of Excellence: Advancing Kenya’s GH2 Entrepreneurial Ecosystem

Documentation of full ii2030 process in Kenya

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Green hydrogen can be transformative for Africa. The sector will create green jobs and new opportunities for local startups and innovators.

Now is the time to create the fertile ground for entrepreneurs, who often lack access to adequate finance, skills, or even awareness of opportunities in the GH2 sector.

ii2030 is a catalytic process that begins with a problem and an opportunity and ends with a prototype of a systemic solution that can be implemented to strengthen the GH2 support ecosystem for local startups and innovators at the national and pan-African levels.

Photo: Co-Creation in Nairobi in June 2023 (Endeva)
Guiding Question for the ii2030 Green Hydrogen Edition

How might we ensure that (digital) startups and local innovators benefit from the potential in the green hydrogen sector?
ii2030 GH2 in Kenya Journey

**BILATERAL INTERVIEWS**
December 2022 – February 2023
60 min interviews
Identify inhibitors and enablers in the system

**SYSTEM CHALLENGE WEBINAR**
7 March 2023
120 minute webinar
Understand system dynamics

**SYSTEM OPPORTUNITY WEBINAR**
21 March 2023
120 minute webinar
Identify levers for change

**PAN-AFRICAN WEBINAR**
20 April 2023
120 minute webinar
Continent-wide peer exchange

**CO-CREATION EVENT**
27 and 29 June 2023
1.5 day workshop
Co-create solution to positively disrupt the system

**CELEBRATION WEBINAR**
14. September 2023
60 minute online event
Pitch solutions and seal commitment for implementation

**IMPLEMENTATION PREPARATION**
Ongoing support
Develop project documents with main stakeholders
Understanding the system: Status of GH2 in Kenya and levers for change
Milestones of the Sector

- Kenya produces more than 90% of its electricity from hydropower, geothermal energy, solar and wind energy as well as biomass.

- Kenya’s hydrogen development strategy and roadmap is under progress and is scheduled to be launched in early September 2023, when Nairobi is hosting Africa Climate Week.

- Kenya is identifying industrial pathways to further pursue uses of GH2 as energy carrier for selected transport (mobility) options and regional export of green ammonia/fertiliser into the East Africa Community (EAC) and under AfCFTA.
Key Actors
Overall, we see that the hype for green hydrogen in Kenya is driven by a committed government to complete the green transition to 100% renewable electricity generation as well as an equally supportive collaboration with development partners and (international) financial institutions. However, there is a lack of inclusivity as communities and entrepreneurs experience limited awareness, visibility, information, finance options and opportunities to participate. A more holistic approach might be needed for full understanding, support and enthusiasm from all sectors.

Another key bottleneck is the cost of electricity. Therefore, the price to produce GH2 is still a challenge.
Solutions for Access to Finance

- Limited financing options for startups
- Investors and commercial lenders have little interest and high risk aversion
- Ideas are stalled, no proof of concept
- No pilot startups and innovations in GH2
- Limited access to finance

- Government subsidies
- Increase GH2 knowledge for local financiers
- Better collaboration between startups
- Training and education center of excellence should lead to business models and finance needs
- Build localized digital solutions
Solutions for Collaboration for Skills Development

- Needs assessment for local skills gap
- Green Digital Innovation Hub as virtual platform
  - In-country demonstration site to show possible applications
- GH2 not an immediate priority on the agenda of stakeholders
- Limited collaboration among local stakeholders to develop Kenya-specific GH2 skills programs
- GH2 still seems abstract and high-level
- No locally adapted curriculum, training courses
- Unclarity around which GH2 skills need to be developed in the Kenyan context
- Low collaboration for skills development
- Hackathon on renewable energy solutions on a regional level
- Partnerships between large companies and colleges/universities to teach the skills in demand
Solutions for Lack of Business Models

- Show profitable business models from other countries/regions
- Analyze relevant sectors like agriculture and transport

Startups and innovators are not exploring GH2 business models

No GH2 ecosystem yet and not development due to no demand

Little understanding about opportunities for startups

No sector-specific support for startups in GH2

Lack of business models

- Create sector-specific hub with industry players and government
- Develop and promote fiscal incentives from government (e.g. Innovation Prize)
Results of Co-Creation: GH2 Centre of Excellence
Starting Point

How can we create a Centre of Excellence to support the development of the green hydrogen ecosystem in Kenya through technical and commercial expertise and know-how for entrepreneurs, technicians and investors?
Prototype 1 – GH2 Acceleration Centre

Prototype 1 – GAC

Developers/Group participants: Pauline, Christoph, Lucy, Lemayan, Hillary

An inclusive centre of hydrogen that focuses on the technical knowledge and showcasing of the entire value chain from renewable energy production (wind, solar) to use cases.

Featuring:
1) Demonstration plots for solar, wind and electrolyzers
2) Research lab
3) Market place
Prototype 2 - Services

Prototype 1 – Services

Developers/Group participants: Catherine, Jackie, Grace, Joy and Mary

Designing the services, the group envisioned an open, welcoming space to experiment and network among engineers, scientists and R&D companies to fully understand and utilize the technical aspects and commercial opportunities of green hydrogen in Kenya.

Featuring:
1) Demonstration plots
2) Prototyping Lab
3) Networking Hub
Prototype 1 – GH2 Fund

Developers/Group participants: Karina, Joyce, Kevin and Paul

Focussing on short- and long-term finance solutions, the group envisioned several funding opportunities for GH2 activities, start-ups and mature businesses, where in-depth knowledge and investor appetite would de-risk new ventures.

Featuring:
1) Soft loans and equity from Impact Investors
2) Revolving Fund for SMEs
3) Grant mechanisms and innovation challenge funds from development partners
Concept of a Centre of Excellence in the GH2 Sector

On the second day, core stakeholders started detailing the idea of a Centre of Excellence.
Roadmap to Concept Development, June-December 2023

**July**
- Kick-off meeting design phase: Core Innovation
- Develop concept/storyline of the CoE-GIZ
- Request lead entity: AGHA
- Confirm list of partners: Declaration

**August**
- Set up a monthly call
- Source and fund initial phase of CoE.
- Review: CoE's readiness
- Source: lead entity AGHA
- Receive feasibility data: PA

**September**
- Sector engagement/feedback draft: continued
- Create a working group: CoE
- Facilitate for the AGHA
- Share refined draft with 100+ participants
- Begin development of virtual CoE platform

**October**
- Pitch to different Govt agencies
- Pitching to regional agencies
- Design partner for pilot phase and start up support Circle innovation
- Convene Steering Group

**November**
- Contribution staff and equipment: Jackie FR
- Launch virtual CoE platform
- Marketing activities: soft launch, G12 Conference.

**December**
- Concept Note: Final Draft
- Source: funding for operational phase of CoE
- G12/BU/Directors

**January '24**
- Being in industry partners & training institutes

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**June 2023**

**December 2023**