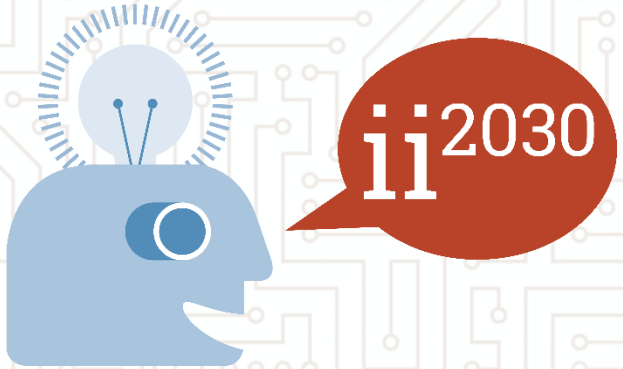


Building a Green Hydrogen Centre of Excellence: Advancing Kenya's GH2 Entrepreneurial Ecosystem

Documentation of full ii2030 process in Kenya

September 2023

Contact: Stef Engels, s.engels@endeva.org

an endeva initiative

german cooperation
DEUTSCHE ZUSAMMENARBEIT

Implemented by
giz Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH

Make-IT in Africa

ii2030
INCLUSIVE INNOVATION 2030

ii2030 GH2 in Africa Edition

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

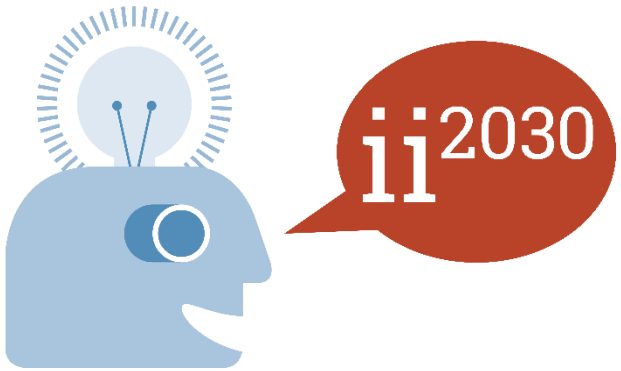
Now is the time to create the fertile ground for entrepreneurs, who often lack access to adequate finance, skills, or even awareness of opportunities in the GH2 sector.

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.**

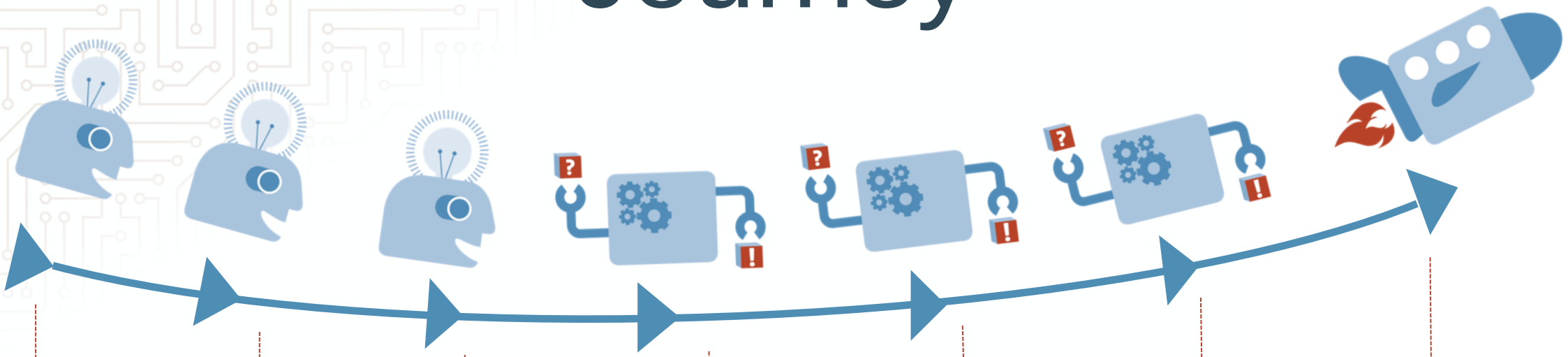
Photo: Co-Creation in Nairobi in June 2023 (Endeva)

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.

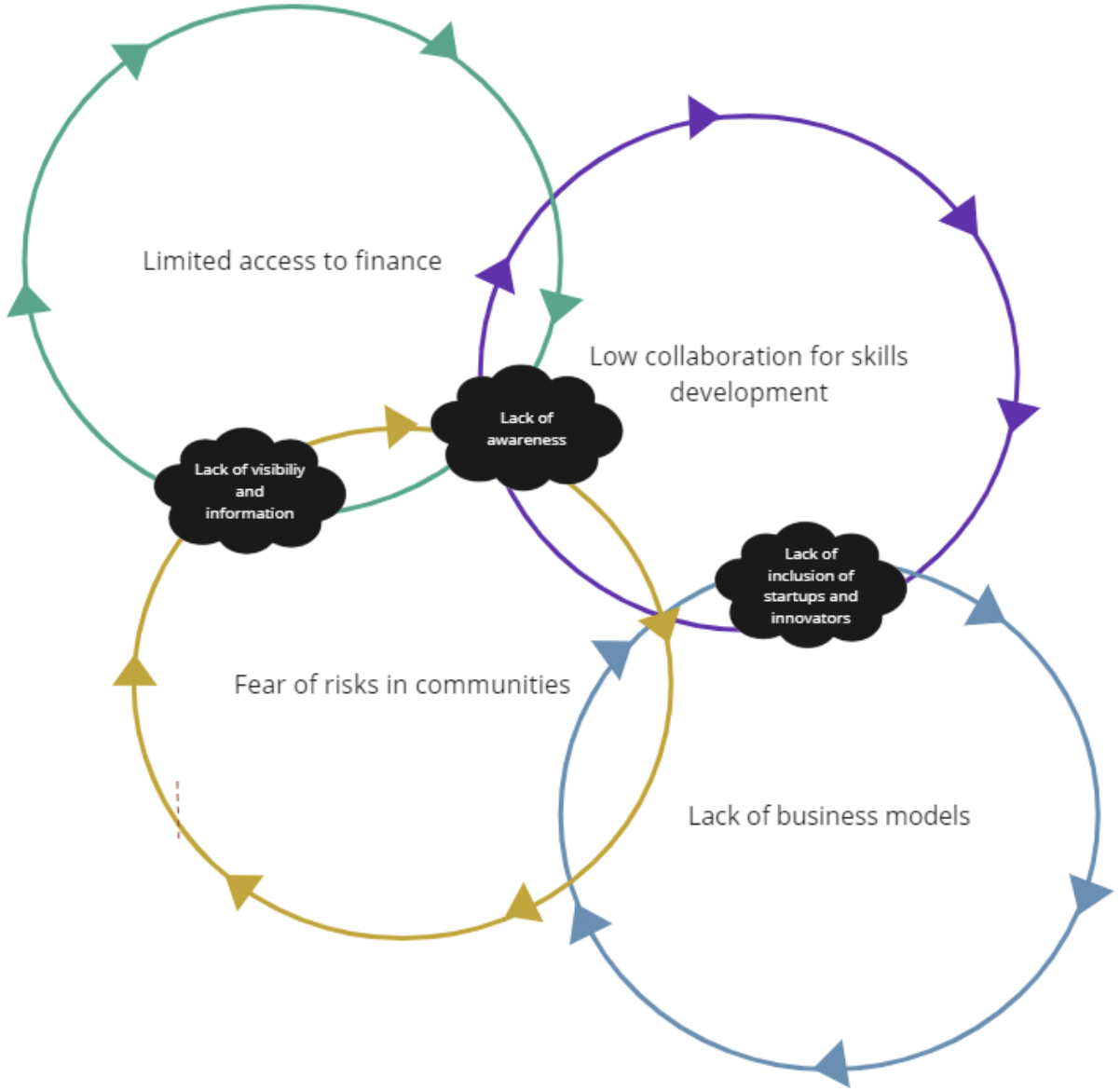
- Kenya's hydrogen development strategy and roadmap is under progress and is scheduled to be launched in **early September 2023**, when Nairobi is hosting Africa Climate Week.

- 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


giz
Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH
The Delegation of the European Union
Kenya Power
REPUBLIC OF KENYA
MINISTRY OF ENERGY AND PETROLEUM
KenGen
Energy for the nation.
Kenia
Kenya National Innovation Agency
Federal Ministry of Education and Research
Make-IT in Africa
Government
UK Kenya Tech HUB
iHub
GH2
GWEC
GLOBAL WIND ENERGY COUNCIL
Development partners
Startups
circle innovation
endeva
KEPSA
KENYA PRIVATE SECTOR ALLIANCE
Kwaati CONSULTING LTD.
TOYOTA
KAM
Inspiring global competitiveness
KENYA ASSOCIATION OF MANUFACTURERS
ESOs
Corporates
FORTESCUE FUTURE INDUSTRIES
African Hydrogen Partnership
BOC
A Linde company
International PtX Hub
Research, skills
Finance providers
SOWIT
KENYA
SERITI
Green
NGOs, civil society
CATALYST FUND
POWERED BY BFA GLOBAL
Strathmore UNIVERSITY
POWER SHIFT AFRICA

Core Story of the System

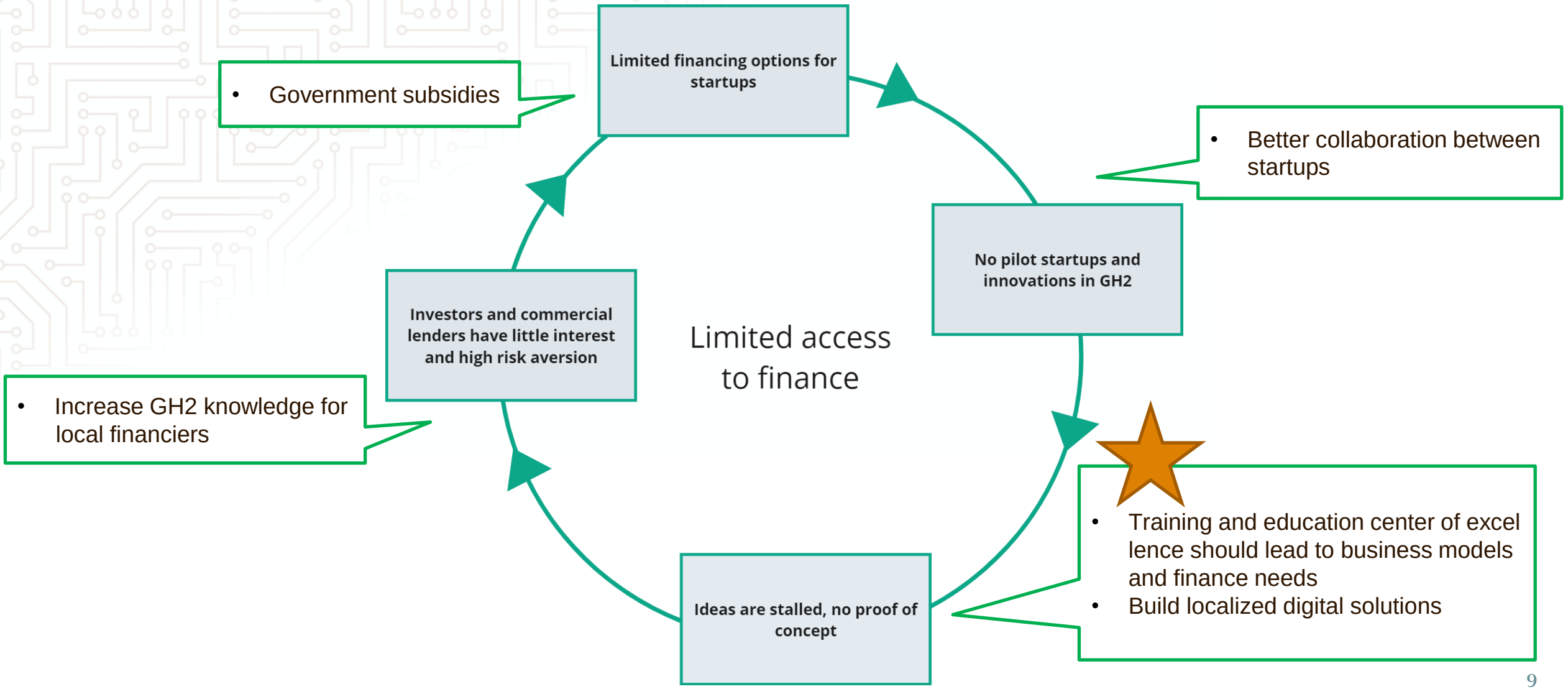


Overall, we see that the hype for green hydrogen in Kenya is driven by a committed government to complete the green transition to 100% renewable electricity generation as well as an equally supportive collaboration with development partners and (international) financial institutions.

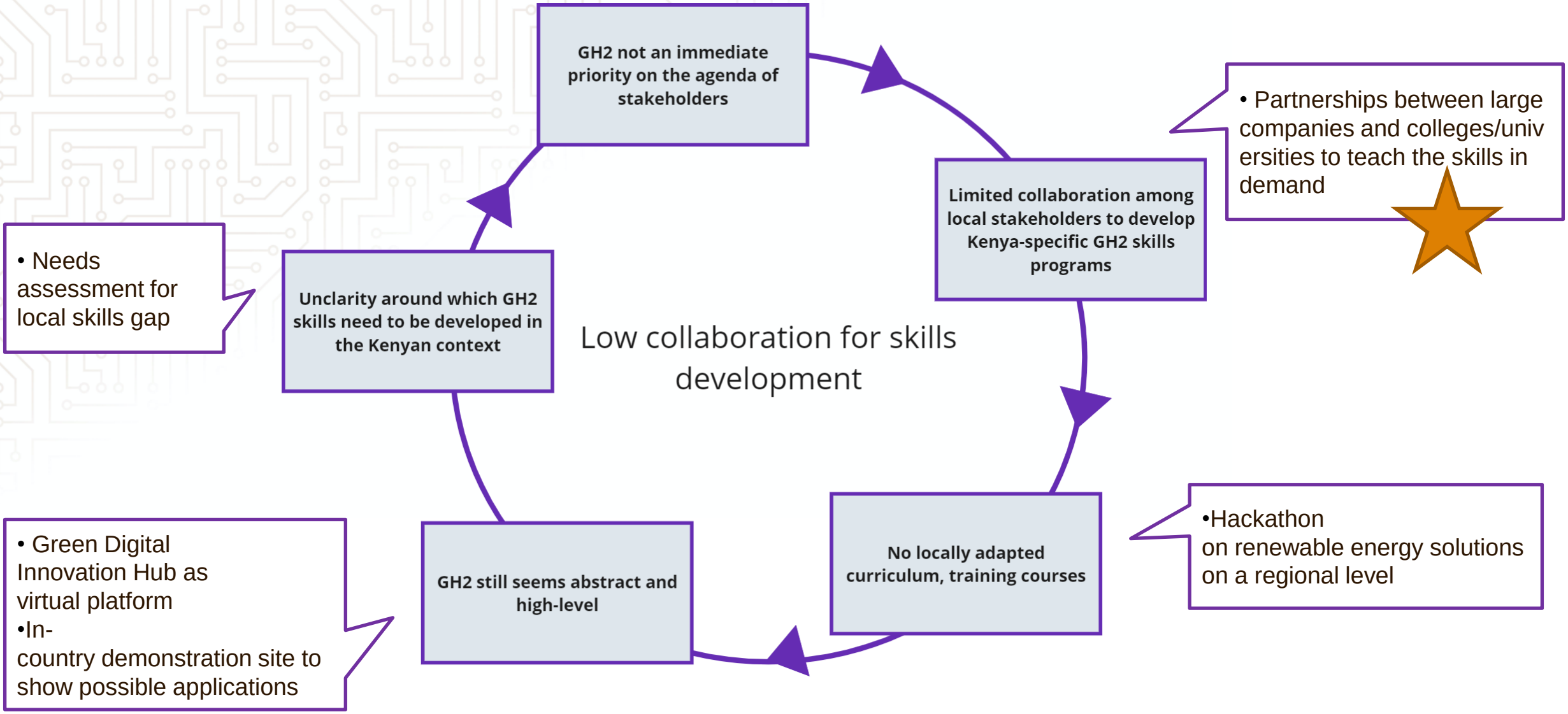
However, there is a lack of inclusivity as communities and entrepreneurs experience limited awareness, visibility, information, finance options and opportunities to participate. A more holistic approach might be needed for full understanding, support and enthusiasm from all sectors.

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

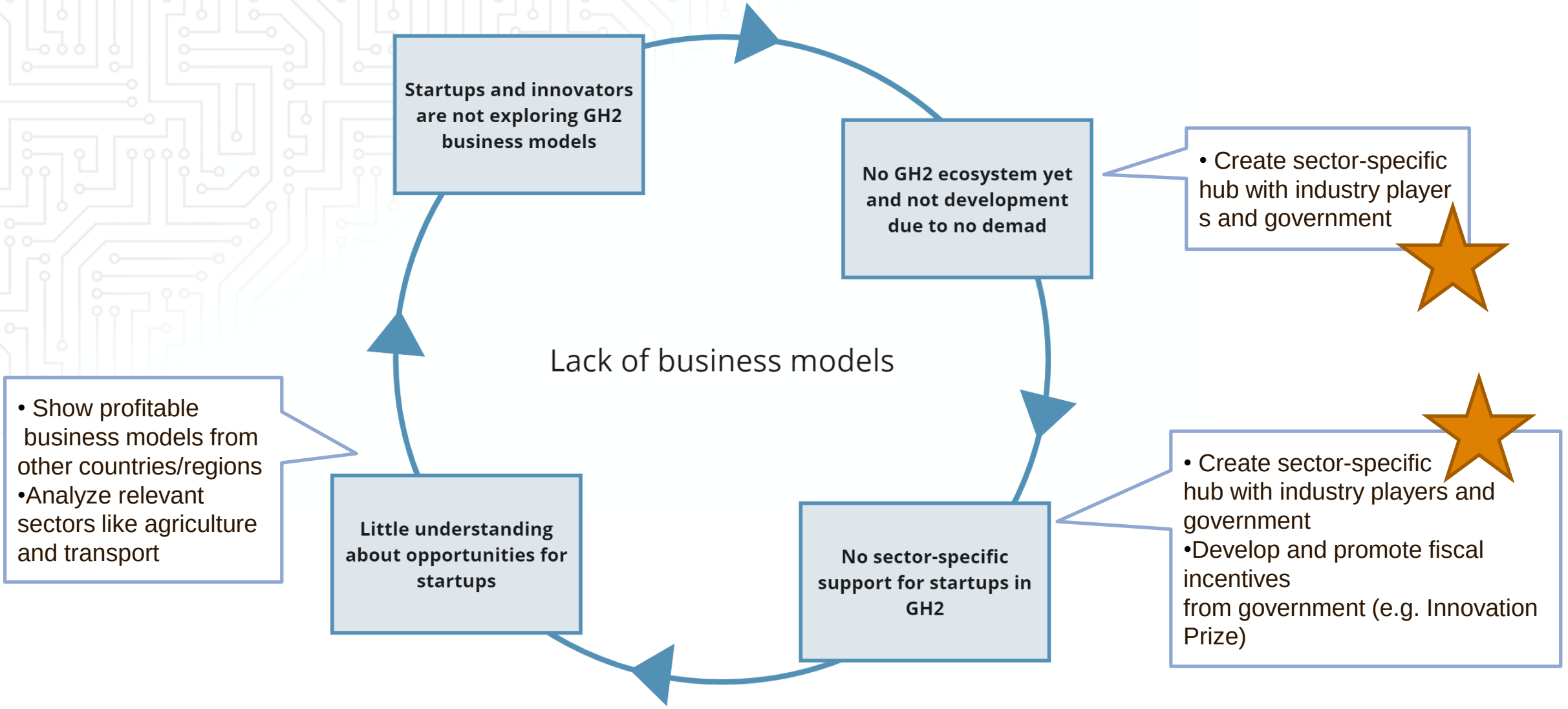
Solutions for Access to Finance



Solutions for Collaboration for Skills Development



Solutions for Lack of Business Models



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

GH2 Fund

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.

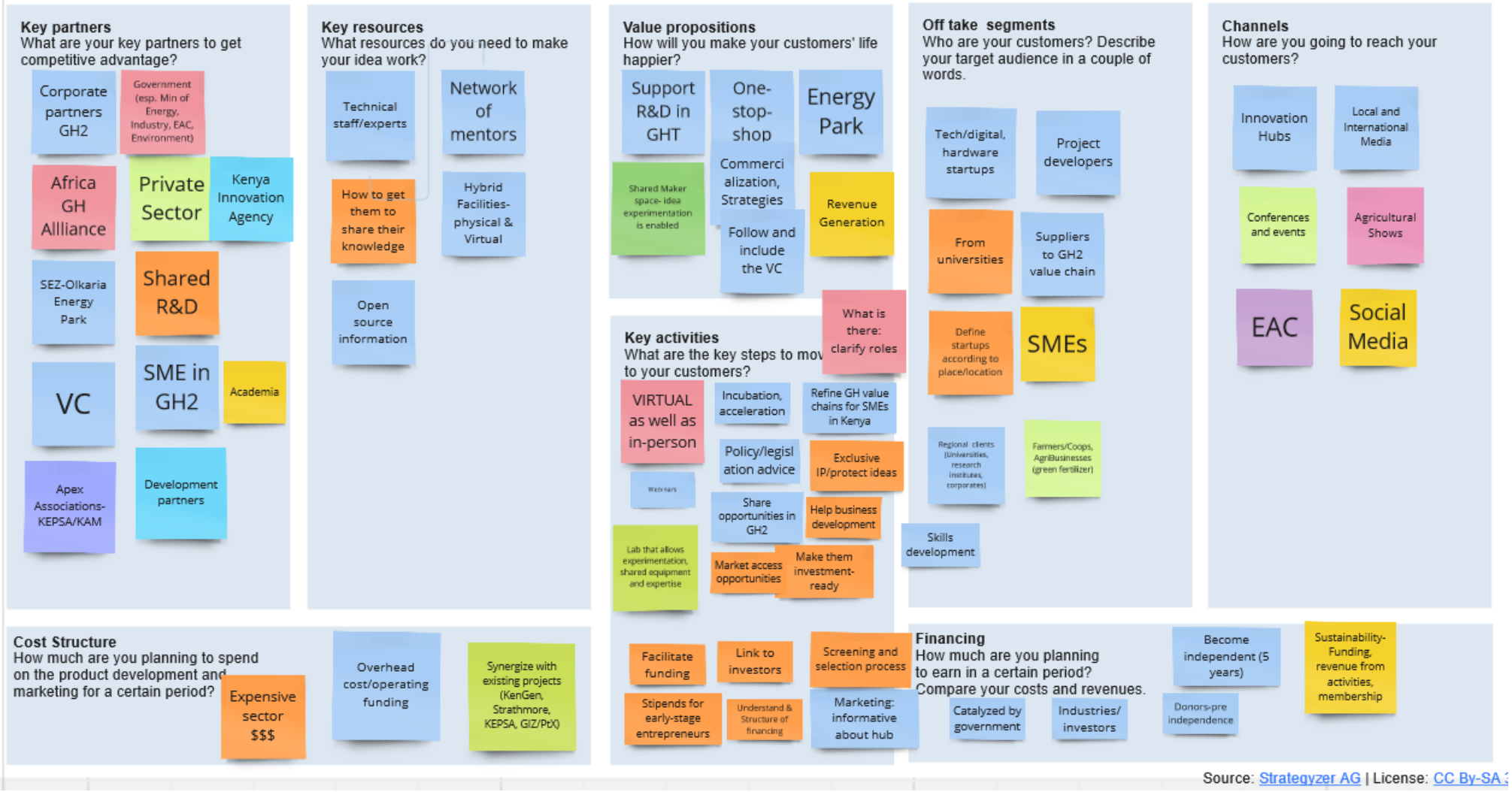
Featuring:

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

Project Model Canvas



Roadmap to Concept Development