

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

Summary of results of the ii2030 Green Hydrogen Edition
July 2023

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.

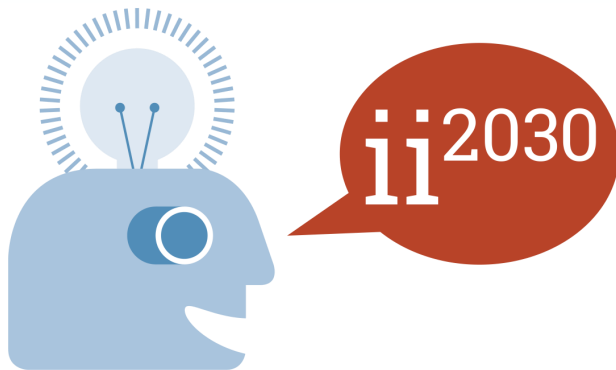
ii2030 is a **catalytic process** that begins with a problem and an opportunity and ends with a prototype of a systemic solution that can be implemented to **strengthen the GH2 support ecosystem** for local startups and innovators in South Africa, Kenya and Namibia.



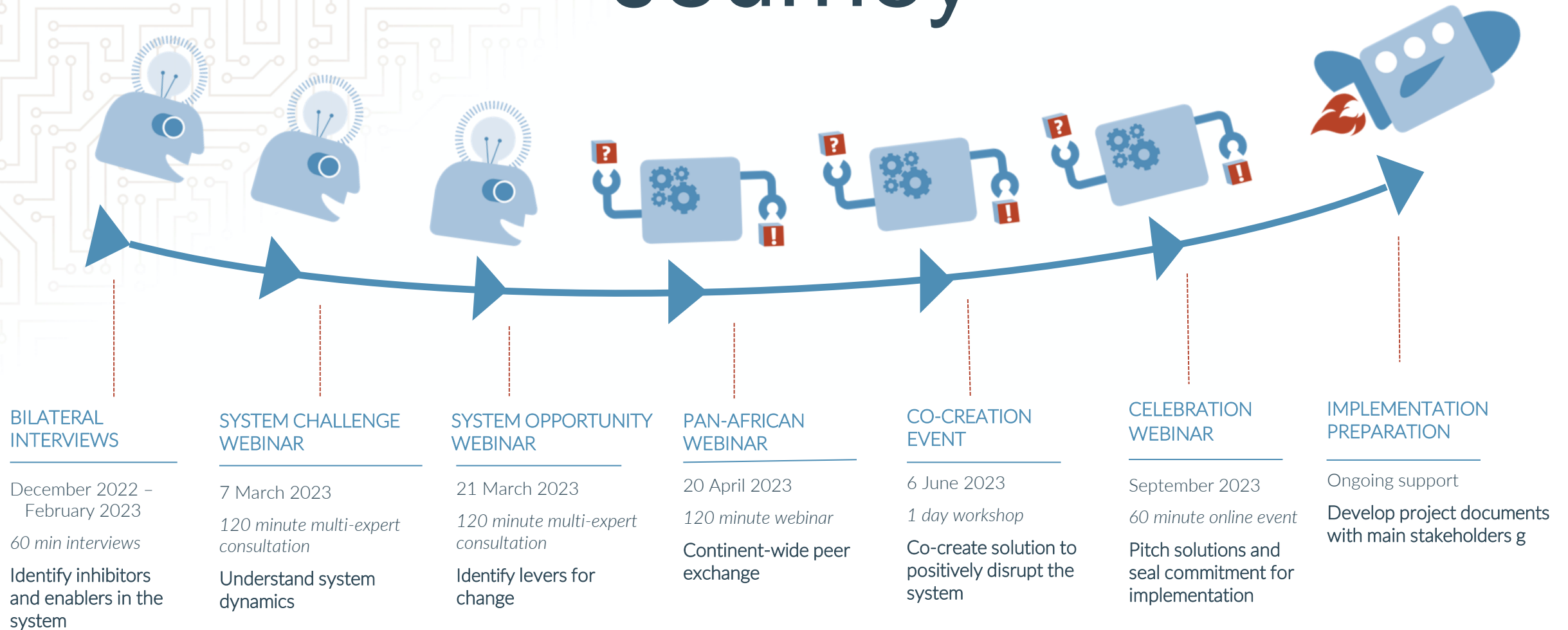
Photo: Co-Creation in Windhoek in June 2023 (Endeva)

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 Namibia Edition Journey



Understanding the System: Status of the GH2 Sector in Namibia and Levers for Change

Map of GH2 Projects (03/2023)

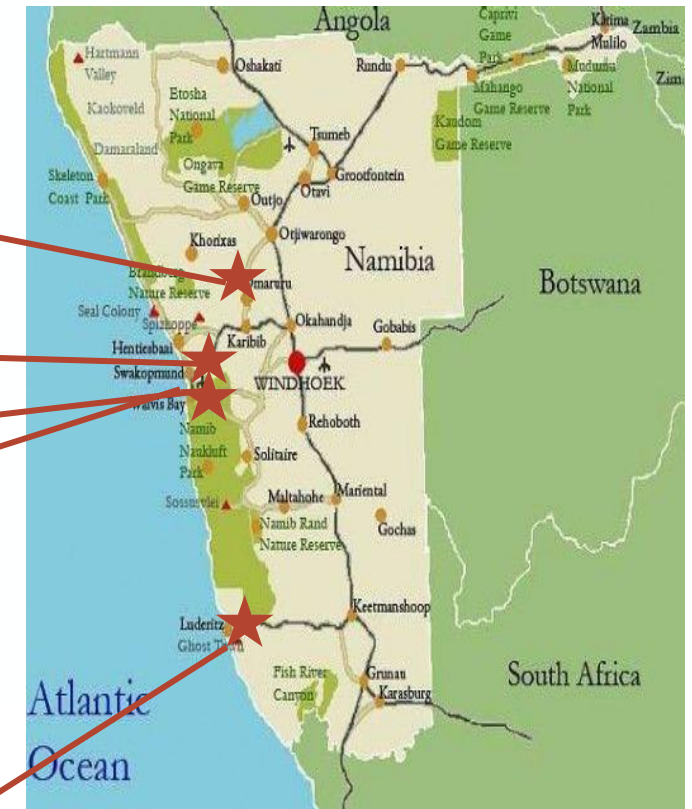
HDF Energy Namibia: French hydrogen specialist Hydrogène de France (HDF) is moving forward with its green hydrogen project. The facility is planned to sell energy to the Namibian grid. (<https://www.renewstable-swakopmund.com/the-project>)

Daures Green Village: production of green hydrogen and green ammonia and the utilization of its derivatives; Run by Daures Green Hydrogen Consortium (DGHC), National Green Hydrogen Research Institute (NGHRI) and the University of Stuttgart. (www.daures.green)

Cleanergy Solutions Namibia - a joint venture between CMB.TECH and the Ohlthaver & List (O&L) Group - works on setting up a Hydrogen pilot plant and refuelling station at the coast of Namibia (www.cleanerynamibia.com)

The HyRail Namibia project: Hyphen Technical, CMB.TECH, TransNamib, the University of Namibia and Traxtion, aim to develop Africa's first dual-fuel hydrogen-diesel locomotive to be fuelled with Namibian green hydrogen (www.hyphentechnical.com, <https://cmb.tech>)

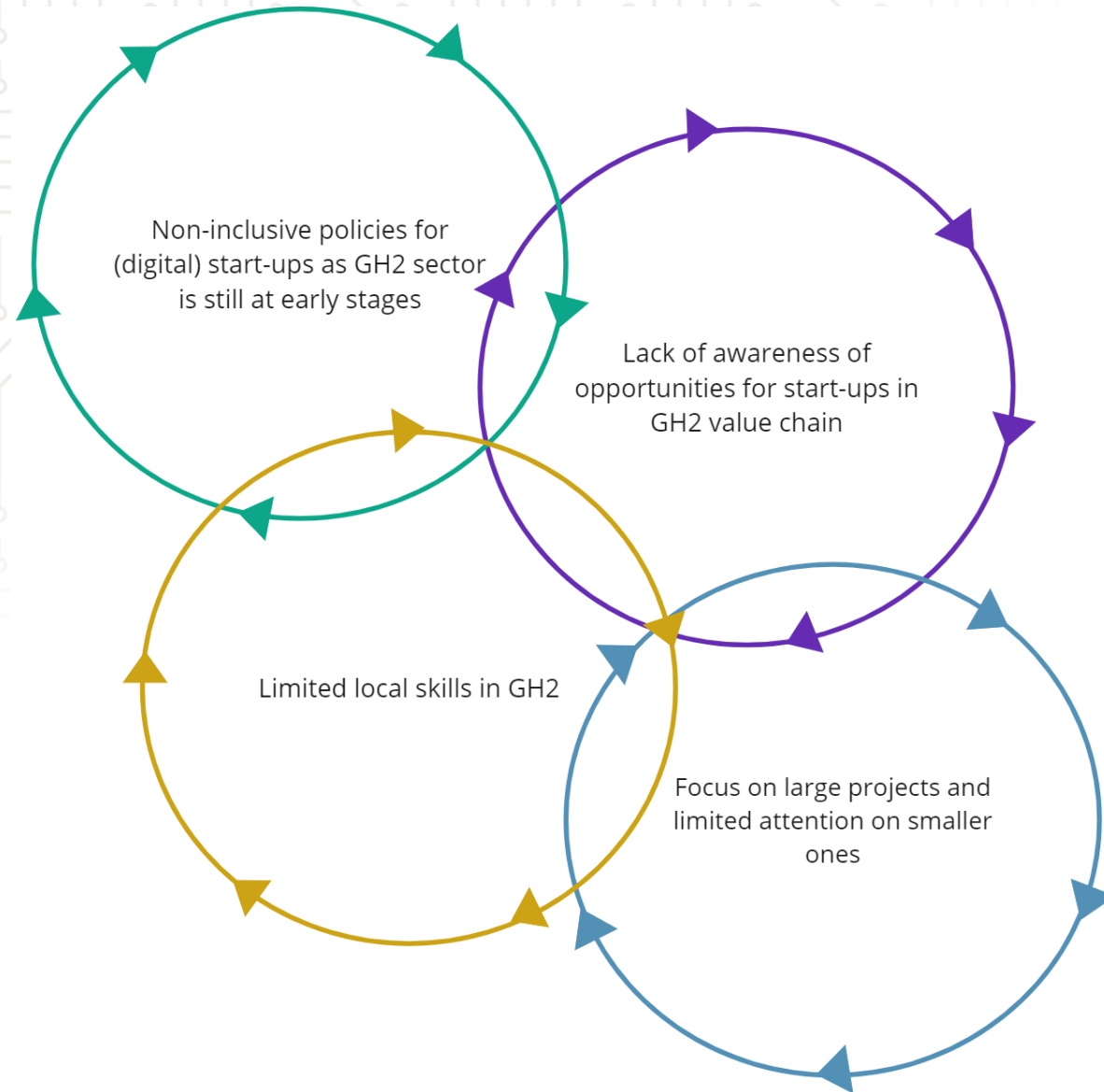
Hyphen: Planned US\$9.4 billion plant producing 300,000 metric tons of GH2/year from 5GW RE capacity and 3GW electrolyser; Produce green hydrogen partly for domestic use, but mainly for export to Europe through a pipeline (www.hyphenafrica.com)



Key Actors

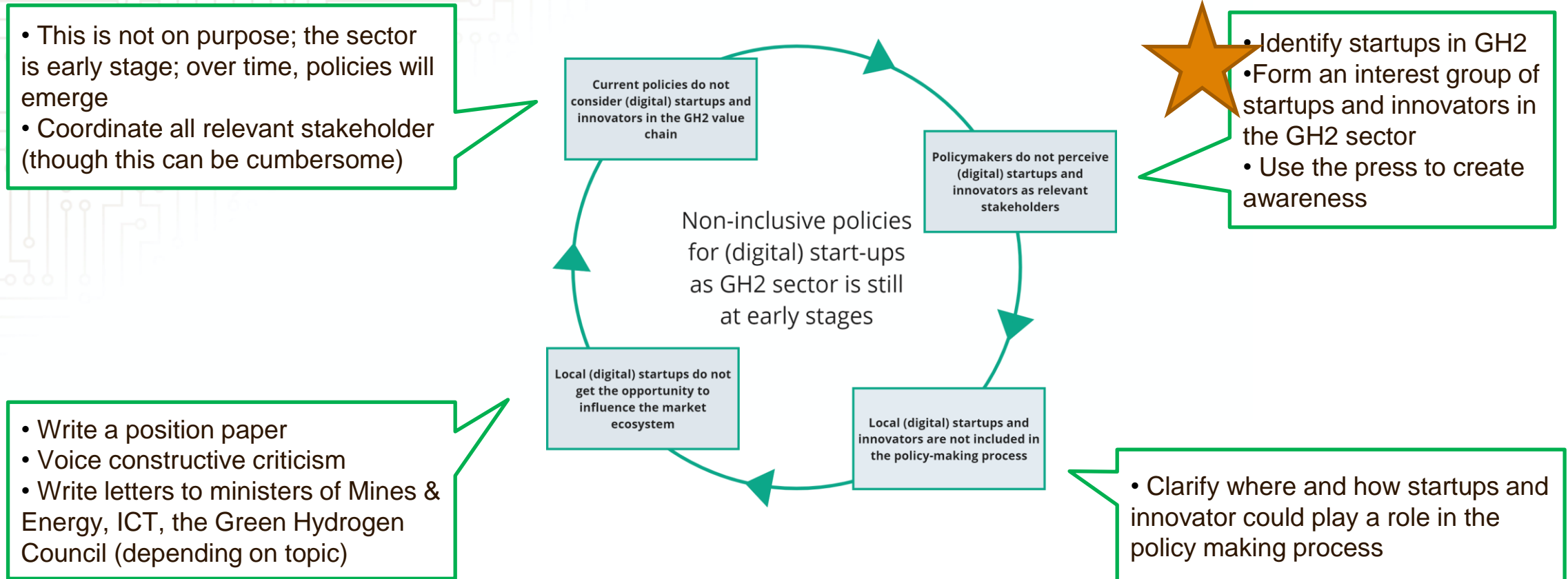


Core Story of the System

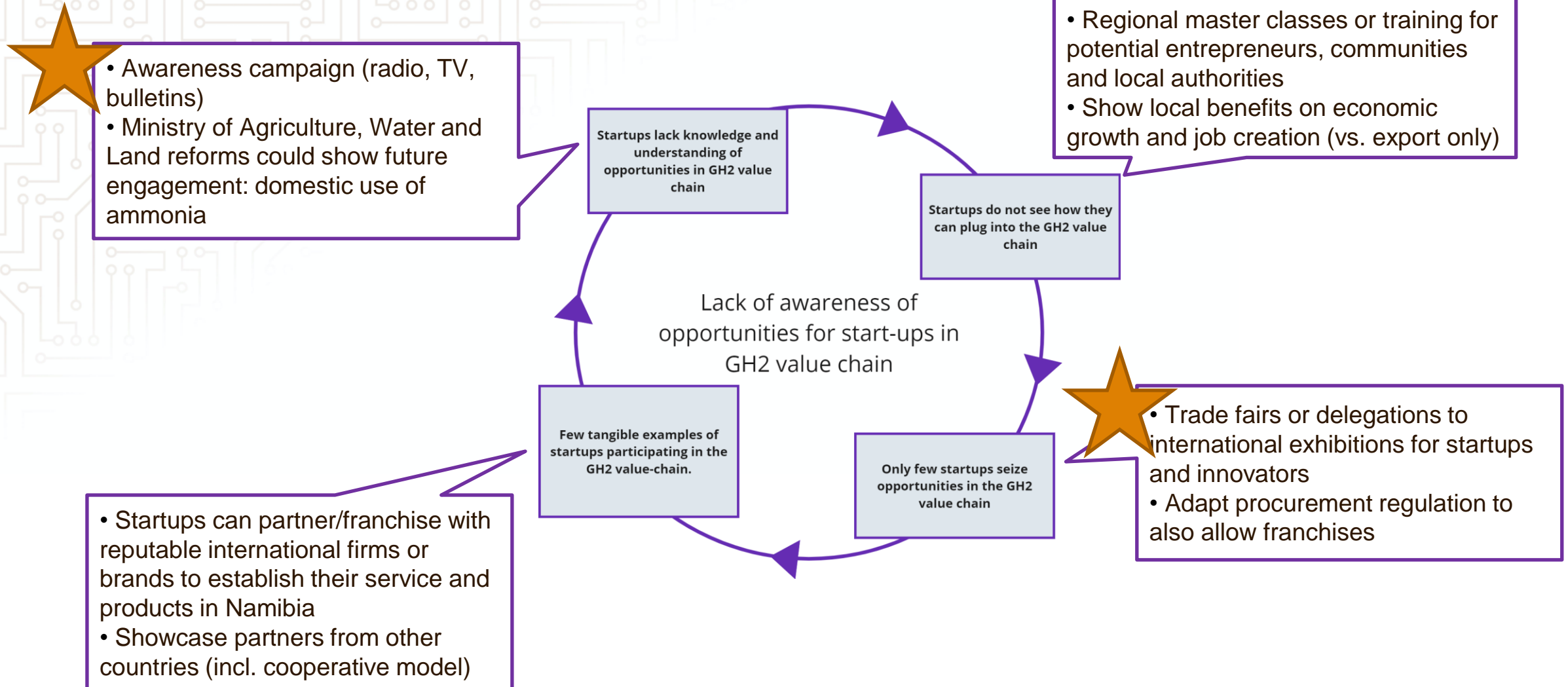


Overall, we see that the loops combine to form a system that is currently optimized to maintain strong foreign influence on the Namibian GH2 sector through skills and investments for export, with more attention on large-scale projects, and less attention on smaller scale projects and startups.

Solutions to Create a Conducive Policy Framework



Solutions to Create Awareness



Solutions to Re-Focus on Startups

- Pan-African startups and local innovator (esp. software) could work globally; this might get them more attention
- Local content could come not only from Namibian startups but African startups which create subsidies in Namibia

- Consider similar industries (logistics, mining) and show what startups can do there, e.g. maintenance
- Intrapreneurs from large companies could culture of innovation

- Support existing startups, e.g. through programmes that foster the collaboration with large companies or the shared research between large and small ones.
- Procurement of large companies should include startups
- Innovation challenges

There is a perception that GH2 is only for the large actors

Startups and innovators are not part of the market

Focus on large projects and limited attention on smaller ones

Money and support mainly channelled to larger projects

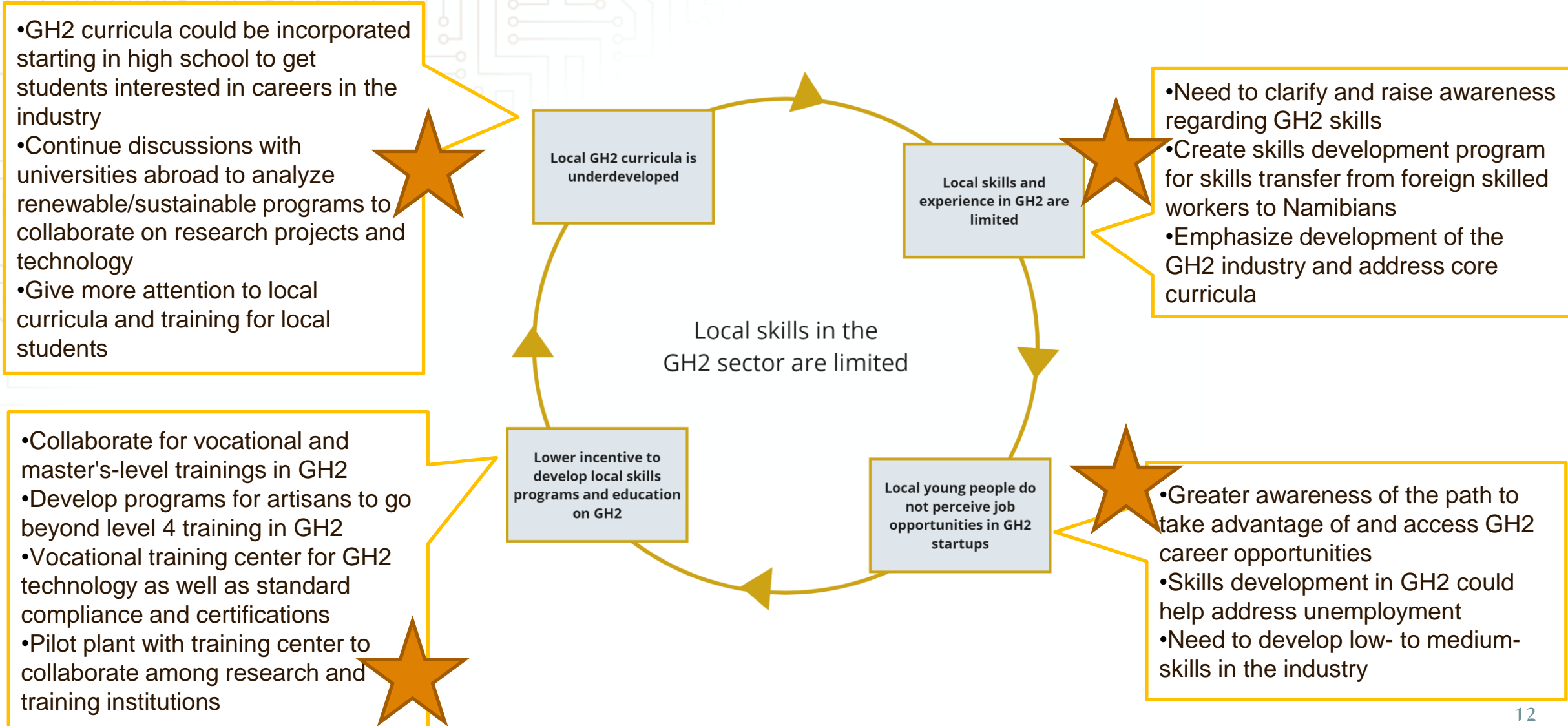
Startups and innovator cannot realise their projects


Startups and smaller companies do not get enough support

- Large companies could start entrepreneurs in residence programme or trainee programmes to foster innovation

- Show opportunities for startups to show that it is not only wishful thinking to create a local GH2 startup scene

Solutions to Develop Local Skills



The background of the slide is a dark blue-grey color with a repeating pattern of light grey circuit board traces and nodes, creating a technical and digital aesthetic.

Prototypes for Building GH2 Skills from the Co-Creation Workshop

Namkanda - Renewable Skills Training Centre



Prototype 1 - Upskilling/Reskilling

Developers/Group participants: Representatives from Hyphen and GIZ

A GH2 training centre with multiple components focusing on renewable energy and GH2 production with hands-on learning opportunities and research on use cases.

Featuring:

- 1) Faculty of Renewable Energy: Located along the coast with hands-on access to renewable and GH2 production training facilities, which allow students and trainees to work with simulated components hands-on
- 2) Agricultural Institute: green ammonia from GH2 production feeds into an aquaponics/hydroponics centre
- 3) Battery Research Facility: utilizes the brine waste from GH2 production to incorporate into sodium-ion batteries
- 4) School of GH2: pupils include technicians who have previously completed higher courses, and some are apprentices and TVET students being taught by previously graduated technicians
- 5) GH2-powered jet bringing in international exchange experts and flying out Namibians to exchange programs

RECOGREEN



Prototype 2 – Collaboration between local and international players

Developers/Group participants: Representative from the National Commission on Research, Science, and Technology (NCRST), Kaoko GES Ltd, H2WS Ltd, University of Namibia, Namibia Training Authority (NTA)

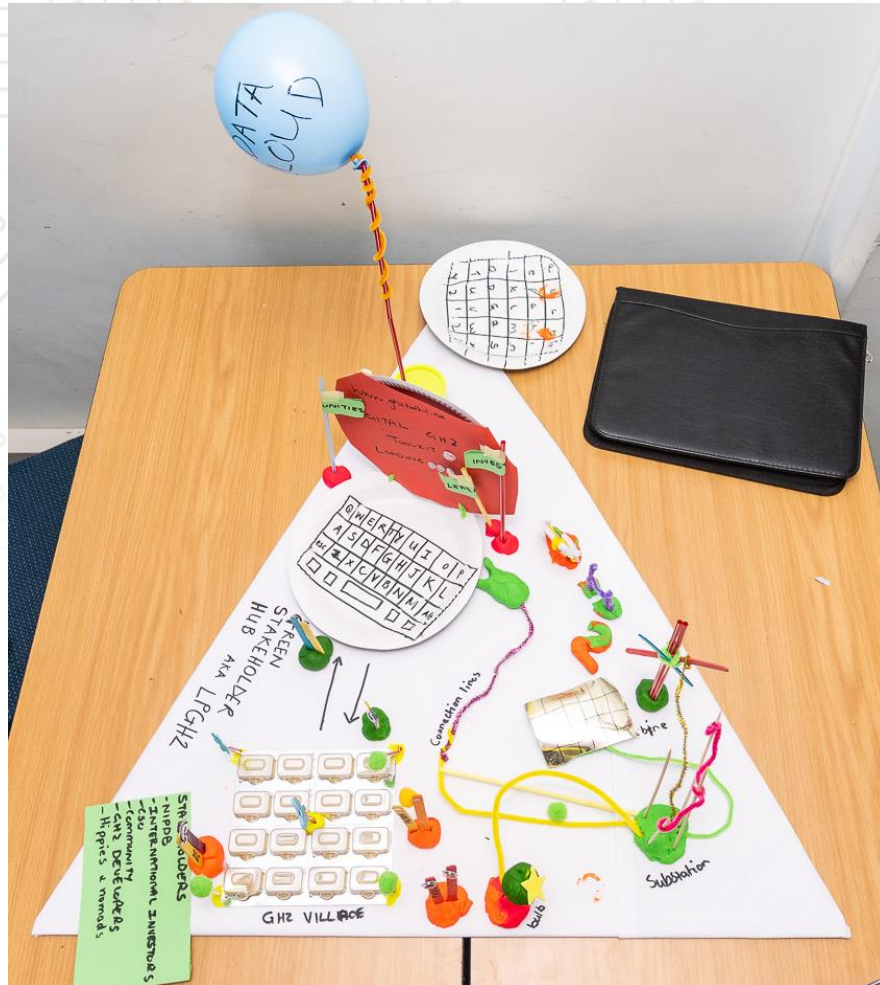
An open-border policy framework for free-flow of skills, knowledge and expertise from the international community to Namibia with knowledge transfer and exchange obligations.

Featuring:

- 1) Report of Skills Audit in Namibia
- 2) Open-Door Border Policy: lowering the bureaucratic barrier to entry for international experts while requiring exchange obligations for entry
- 3) Including stakeholders into the GH2 value chain, including youth
- 4) Defining new GH2-specific qualifications
- 5) HyCooker: exploring use cases for GH2, including GH2-powered cooking

Green Stakeholders Hub

AKA Love, Peace, GH2



Prototype 3 – Increasing Awareness and Stakeholder Engagement

Developers/Group participants: Representative from EU, GIZ, H2WS Ltd, Daures, South Africa Resource Watch (SARW)

Large digital awareness centre and GH2 village that allows for inclusive stakeholder engagement and education.

Featuring:

- 1) An informational digital kit, which stores information and shares it via radio, TV, the internet, etc.
- 2) Engages surrounding communities and the youth as well as stakeholders including NIPDB, international investors, CSOs, and GH2 developers to work together
- 3) GH2 village powered by green energy and utilizing green materials
- 4) Green energy is produced via wind and solar, which is transmitted to the grid and powers the digital kit as well as the GH2 village

NAM GH2 Hub



Prototype 4 – Academia

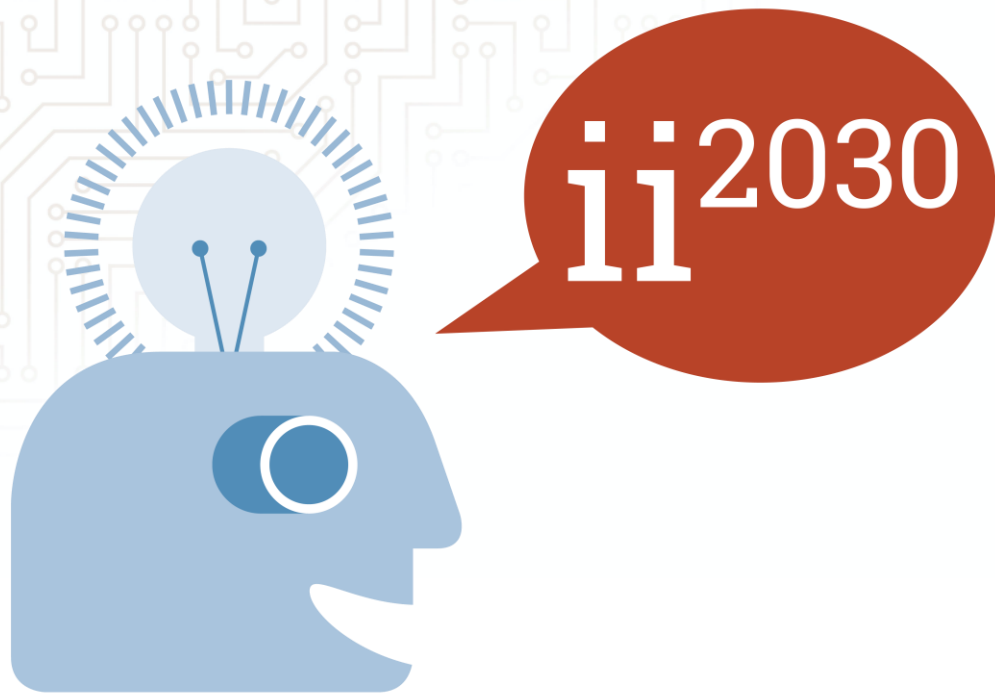
Developers/Group participants: Representatives from Namibia Investment Promotion and Development Board (NIPDB), Namibia Green Hydrogen Research Institute (NGHRI), University of Namibia, Namibia University of Science and Technology (NUST)

A centre in the university that allows for curriculum development, youth engagement and training for entrepreneurial skills.

Featuring:

- 1) Centre for Curriculum Development, including stakeholders such as the Namibia Training Authority (NTA) and National Quality Assurance (NQA)
- 2) Youth Engagement Centre: platform for youth to engage with experts
- 3) Research Centre: academia can do research in a co-working space or mobile lab that can travel to the different regions of Namibia for information sharing and data collection
- 4) Innovation Hub: allows entrepreneurs to test their software and experiment with prototypes, including a GH2-powered stove
- 5) Centre for Entrepreneurial Skills: focused on ideation and incubation

Thank You!



For more information, feedback
or comments, please contact

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