

Green Hydrogen: Towards Just Energy Futures

5 July 2022, 14:300

Organisers: Dr Phillip Lühl, Dr Guillermo Delgado, Namibian University of Science and Technology

Presenter: Dr William Monteith, Queen Mary University of London

Aim of session

We are currently at a critical juncture in which we must address the twin global crises of underemployment and ecological collapse. Green energy transitions, such as the development of Namibia's green hydrogen industry, hold the potential to attend to both crises simultaneously, through the generation of green jobs and clean energy. However, questions remain about how the benefits of these transitions will be generated and distributed. What types of jobs will be created in the green energy economy? Where will they be located and who will have access to them? To what extent can green energy projects address existing inequalities in society (e.g. relating to income, land and infrastructure), and what new forms of equity and citizenship might they engender? Dr Monteith was joined in conversation by 20 colleagues from academia, civil society and government in Namibia.

Introduction

Dr. Lühl opened the session by reiterating that the debate on green hydrogen in Namibia thus far has been a technical debate, that hasn't given much attention to broader questions of livelihood, land and redistribution: "That is to say, who wins? Who loses? And to what extent are green energy transitions genuinely inclusive to all? What are the barriers to inclusion, and how might these be tackled and overcome?"

Dr Monteith provided a brief summary of the science of green hydrogen production. Hydrogen (H) is the most abundant element in the universe and hydrogen gas (H₂) is very energy dense. Hydrogen can be extracted from water via electrolysis. This hydrogen becomes 'green hydrogen' only when the energy used to power the electrolysis is produced from renewable sources. In 2021, the Namibian government agreed a US\$9.4 billion tender with Hyphen Energy to produce up to 300,000 tonnes of green hydrogen per year in the Tsau/Khaeb National Park using solar and wind. Much of this hydrogen will be converted into green ammonium for ease of transport to major ports in Europe.

The Institute for Public Policy Research published a [briefing](#) which asks critical questions about the procurement process for Namibia's first green hydrogen project – the largest tender in the country's history. [According to government](#), The Nature Conservation Amendment Act under Section 17(2)(k) empowers the minister of environment and tourism "to establish a renewable electricity source for the purposes of the management of game parks, nature reserves and other protected areas or

protection of the environment or the combating of climate change." Hyphen Energy was only registered in Namibia in 2021. The two major shareholders listed on its website are Enertrag (registered in South Africa) and Nicholas Holdings (registered in the Virgin Islands).

According to the government's recent [Traction report](#), the key commitments of Namibia's first green hydrogen project include the following:

- 'GDP boost of c.\$20bn/year, \$6bn-\$8bn contribution to trade balance and national energy independence'
- 15,000 FT employees during construction phase (4-5 years)
- 3,000 operational and management jobs (post-construction)
- N\$152,000 CTC average wage
- 90% of jobs to Namibian nationals, with 20% youth participation
- 200 scholarships for Namibians as part of upskilling programme (domestic and overseas)
- Fulfilling vision 2030: 'Economic growth and full employment with equitable wealth and resources eliminate poverty'

Dr Monteith noted the significant difference between jobs required at the construction (15,000) and operations (3,000) phases of the project. It is not clear what is to happen to the construction workers after the construction phase of the project, or the implications of their (temporary) migration for local economies in the IIKaras region, where the population of the largest town (Luderitz) is just 13,000. Further research is also needed in order to ascertain how these figures are generated and the assumptions they are based on (for example, the government's figures on job creation differ from those projected in a recent [World Bank report](#)). The commitment that 90% of jobs will go to Namibian nationals will require the development of an ambitious programme of training and upskilling.

In government and private sector publications, the redistributive dimensions of the project are framed almost entirely in relation to job creation. However, a [recent consultation document](#) raised the prospect of the dividends from GH2 exports being redistributed to Namibian citizens directly via a basic income grant, or indirectly via investments in public services. Dr Monteith emphasized that this is a critical dimension of Namibia's green hydrogen project which requires extensive public consultation. Questions of wealth and redistribution are also connected to the earlier discussions of job creation insofar as modest projections for long-term job creation in the GH2 economy strengthen the case for basic income.

Dr Monteith ended his presentation with a series of questions adopted from the 'hydrogen justice' framework developed by [Dr Franziska Müller](#):

1. Procedural justice

How are green hydrogen governance structures evolving and how inclusive are they?

2. Recognitional justice

Whose interests, needs and vulnerabilities are recognised in the development of GH2 strategies and planning processes?

3. Relational justice

How does resource-intensive GH2 production intervene in the relationship between humans and the environment (including human-land and human-water relations)?

4. Epistemic justice

How do knowledge transfers take place in the GH2 economy? Whose knowledge counts?

5. Distributive justice

How are the costs and benefits of GH2 distributed along the value chain and among the general population?

6. Restorative justice

To what extent will hydrogen economies address or accentuate historical injustices, relating e.g. to land appropriation, exclusion and exploitative labour practices? How do we ensure that European economies are not decarbonized at the expense of African societies and ecologies?

Questions from the floor

1. What percentage of energy is generated by solar and hydrogen wind?
2. What is the cost of the power, which will be generated? The national park is in a restricted diamond area, what will happen then?
3. How will the energy be stored due to the high risks?
4. What is the relationship between de-sanitation and marine biology? How does the production of energy factor the marine biology?
5. Participation, stakeholder involvement, and social relations. Who will be involved in the program and to what extent? What will happen to the people living there? And their livelihood?
6. Hydrogen program is mainly government-driven. Many decisions have been made in Namibia. There is a lack of debate on green hydrogen energy in Namibia. There is an issue of information distribution and control of the narrative. Information is first provided to the investors and the locals receive it last. There is a lack of public involvement. This results in distrust from the public.
7. There are reasons why the area is inhabitable. Therefore, more information about the space should be made.
8. How does the issue of development flow through Namibia? To what extent will neighboring countries benefit without overshadowing Namibia?
9. There is a similar project in South Africa, how are the projects similar and where do they diverge?

Responses

10. Percentage is not specified. The energy is converted into green hydrogen. This raises the question of to what extent will it be exported to Europe compared to using it in the country.
11. 9.4 billion dollars, more costly. However, it has a longer life span than conventional energy. There is a concern about repair and maintenance. How does that contribute to the cost? What happens afterward? Do we get another ghost town or a more sustainable area?

The diamond area is used due to its historical aspect and inability for the space to be inhabitable. The area is more pleasing to investors or the state. There is an oil industry interested in the region, to what extent will they operate the distribution of the space?

12. It could be safer to operate the project in the area due to the area being inhabitable. However, how is it handled locally?
13. The sea/ocean is regarded as a special value area, which is a no-development zone. What happens when the water is contaminated?
14. Green hydrogen council, local municipality, private sector involvement, the government, and the involvement of youth (Namibia Youth for Green Hydrogen)
15. The project is not intended to be a political project. Where are civil societies in the project? What is the relationship between research and societies? Green hydrogen should be looked at in different aspects. Participatory research is encouraged. Namibian researchers are prioritized.
16. The key is to keep people in the loop. Employment distribution should be taken note of. How does one plan a town for the workers? How will housing for workers be provided? How will this do allowing it to be long-term?
17. There is an issue of land reformation. Internal redistribution should be addressed. Local labor is prioritized. Where are the people with skills? If the company is not satisfied with the local skill sets, it might have to outsource it.
18. Namibia depends on importing energy from South Africa. There could be an issue that South Africa might not engage in importing energy from Namibia due to the similar programs taking place in both countries.

Initial bibliography on Green Hydrogen in Namibia

Government and IFI reports

[Government of Namibia](#) (2022) *Namibia's Green Hydrogen Opportunity: Key Questions & Initial Answers*, January 2022

[Government of Namibia](#) (2022) *Traction: Namibia's Green Hydrogen Overview*, April 2022

[World Bank](#) (2020) *Green Hydrogen Opportunities for Namibia: Phase I Report*, December 2020

[World Bank](#) (2020) *Green Hydrogen in Developing Countries*

Private sector reports

[Hyphen](#) (2021) 'Southern Corridor Development Initiative', Namibian Green Hydrogen Roadshow Discussion Document, 13 December

McKinsey & Co (2021) *Roadmap to Build Namibia's Green Hydrogen Sector*, May 2021

[Port of Rotterdam](#) (2021) *Namibia-Port of Rotterdam Hydrogen Supply Chain: Pre-Feasibility Report*, May 2021

Civil society reports

[Konrad Adenauer Stiftung](#) (2021) *Issues, challenges and opportunities to develop green hydrogen in Namibia*, October 2021

[IPPR](#) (2022) '(Almost) everything you wanted to know about green hydrogen and Namibia (but were afraid to ask)', IPPR Special Briefing, February 2022

[IPPR](#) (2022) 'Procurement Tracker Namibia', No.16, April 2022

[IRENA](#) (2020) *Green Hydrogen: A Guide to Policymaking*, IRENA: Abu Dhabi

[IRENA](#) (2022) *Geopolitics of the Energy Transformation: The Hydrogen Factor*, IRENA: Abu Dhabi

[Powershift Africa](#) (2022) 'Civil Society Perspectives on Green Hydrogen Production and Power-to-X Products in Africa'

Academic research

[Müller, Franzisca](#) (2022) 'Green hydrogen risks and hydrogen justice', Sustainability Politics Event, Brunel University, 18 May