DEMOCRACY REPORT

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SPECIAL BRIEFING

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(Almost) everything you wanted to know about green hydrogen and Namibia (but were afraid to ask)

Democracy Report is a regular publication featuring analysis and commentary relating to the legislative agenda of the Parliament of the Republic of Namibia. It is produced by the Institute for Public Policy Research (IPPR), PO Box 6566, Windhoek, Namibia. Tel: +264 61 240514, info@ippr.org.na. The publication is also available as a PDF download from http://www.ippr.org.na. Democracy Report is funded by the Embassy of Finland.

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Windhoek

Hydrogen (H) is the first element in the periodic table and the most abundant element in the universe.

Hydrogen is present in great quantities on Earth but mainly in combination with other elements such as in water (H_2O) or hydrocarbons (such as methane CH_4). However, it is barely present in the Earth's atmosphere (just 0.00005%). At room temperature on planet earth, molecular hydrogen (H_2) is a highly reactive gas which is why it is not found alone[1].

When hydrogen is combined with oxygen it releases energy to form H_2O. In principle, therefore, it can make a good fuel and, because it forms water rather than damaging greenhouse gases (GHGs), can contribute towards reducing damaging GHG emissions which lead to global warming and climate change.

Furthermore, hydrogen gas H_2 is very energy dense – 2.6 times more per kilogram than natural gas and three times more than kerosene.

Despite these attractive properties, hydrogen has considerable drawbacks. At room temperature hydrogen is a gas. Although by the kilogram hydrogen contains three times more energy than kerosene, by the litre it contains 3,000 times less. So hydrogen gas has to be either pressurised or liquefied if it is to be transported and used as a fuel. Liquidation requires reducing the temperature to minus 253 degrees centigrade. Compression or liquefaction in themselves require energy as well as special storage tanks in which the hydrogen can be stored and transported.

These challenging properties have been known for a long time and have given rise to the industry joke:

"Hydrogen is the fuel of the future – and always will be."

As already stated, at the temperature and pressure present on planet earth, molecular hydrogen (H_2) is rare because it is so reactive. It therefore needs to be manufactured from other substances and this itself requires energy.

Table 1: The Many Colours of Hydrogen

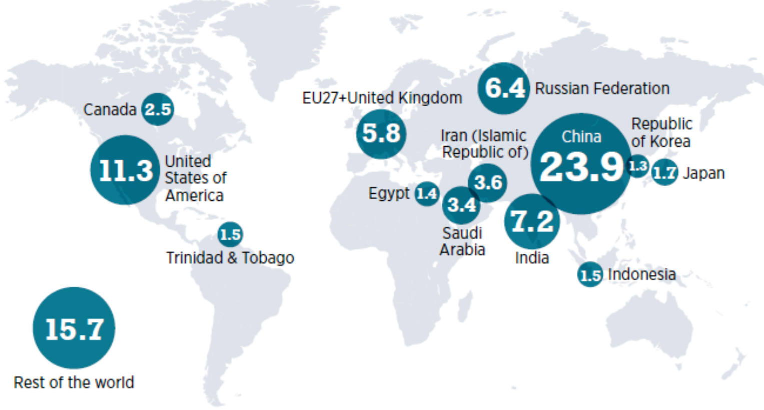
↓	Black hydrogen	Hydrogen manufactured from coal
	Grey hydrogen	Hydrogen manufactured from natural gas
	Blue hydrogen	Hydrogen manufactured from fossil fuels but with carbon capture and storage
	Pink hydrogen	Hydrogen manufactured using electrolysers powered by nuclear power
	Turquoise hydrogen	Hydrogen manufactured by heating methane
	Green hydrogen	Hydrogen manufactured using electrolysers powered by renewable energy

Different ways of manufacturing hydrogen exist, each of which is denoted by a different colour depending on the extent to which the manufacturing process emits GHGs. As one moves down Table 1 the less GHGs are emitted in the hydrogen manufacturing process. Green hydrogen is the product which is produced using electrolysis powered by renewable energy and is the most climate friendly process.

Hydrogen production is already an important global industry, but presently most of the world's current US$150 billion 90 million tonne hydrogen business is produced by burning fossil fuels with air and steam and therefore emits large quantities of GHGs (black and grey hydrogen). Current production of hydrogen is incredibly energy intensive and uses up 6% of the world's natural gas and 2% of its coal and emits more than 900 million tonnes of CO_2, about the same as the whole of Germany. Hydrogen production takes place near to the industrial centres where the hydrogen is consumed. Because of the difficulties associated with storage and transport, there is currently no international market for hydrogen. The figure below, taken from a recent report by International Renewable Energy Agency (IRENA), shows where hydrogen is currently consumed.

[1] https://www.eia.gov/energyexplained/hydrogen/

Figure 2.1 **Hydrogen consumption in 2020 (million tonnes per year)**



Map source: Natural Earth, 2021
Note: Values are derived from current production of ammonia, methanol, refining and direct reduced iron for steel.
Disclaimer: This map is provided for illustration purposes only. Boundaries and names shown on this map do not imply any endorsement or acceptance by IRENA.

However, as already indicated, hydrogen can also be produced by electrolysis, that is to say through breaking down ionic compounds by passing an electric current through them. If this electric current is produced using renewable energy, the output will be climate-friendly or green hydrogen. The electrolyser has been around for over 200 years. There are three types of electrolysis[2]:

1. alkaline electrolysis (a mature technology that is currently used to create H_2 using sodium hydroxide and sodium chloride as catalysts) – China dominates this market

2. proton exchange membrane (PEM) electrolysis (a growing technology which requires platinum and Iridium)

3. high temperature electrolysis.

Hydrogen can be produced using an electrolyser powered by electricity to split water H_2O into its component parts hydrogen H_2 and oxygen O (or O_2). At present, such electrolyser technology exists but not on the scale required to generate large quantities of hydrogen. Electrolyser capacity is measured in GigaWatts (GW). According to the International Renewable Energy Agency (IRENA), at least seven examples of large-scale electrolysers were built during the 20th century to produce green hydrogen. These have capacities of several MegaWatts (MW). Presently the world has about 0.3GW of electrolyser capacity although McKinsey expects this to grow to 100GW by 2030. BloombergNEF estimates that 16GW of electrolyser capacity is due to be built by 2024.

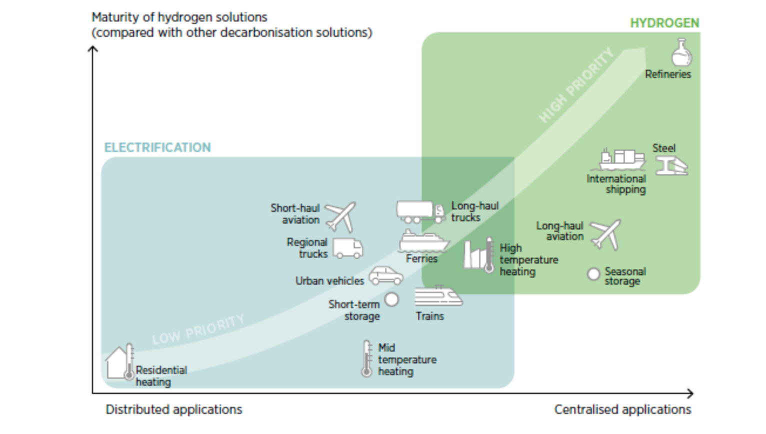
Despite its attractive properties as a fuel, current production of hydrogen is not predominantly for use as a fuel. Current production of hydrogen is vital because one of its main uses is in the production of industrial ammonia (NH_3), the main ingredient of artificial fertilisers upon which much of global agriculture depends. This is done using the famous Haber-Bosch process[3]. Green hydrogen could be combined with atmospheric nitrogen to produce green ammonia. Gaseous ammonia is readily liquefied by compression under ambient conditions making it easier to ship than hydrogen. Furthermore, much of the infrastructure already exists to do this. Ammonia can be used to transport hydrogen but this is associated with conversion losses of 40%. Ammonia can be used as a store of hydrogen although it has its dangers, being a flammable, highly corrosive and toxic gas associated with health and safety as well as environmental risks.

With the increasing need to decarbonise to reduce GHG emissions, hydrogen's qualities as a fuel are coming to the fore. However, it is becoming increasingly clear that hydrogen is unlikely to be used to decarbonise some activities that are better suited to electrification as depicted in the diagram below from IRENA. For example,

[2] https://www.sciencedirect.com/topics/engineering/alkaline-water-electrolysis
[3] https://en.wikipedia.org/wiki/Haber_process

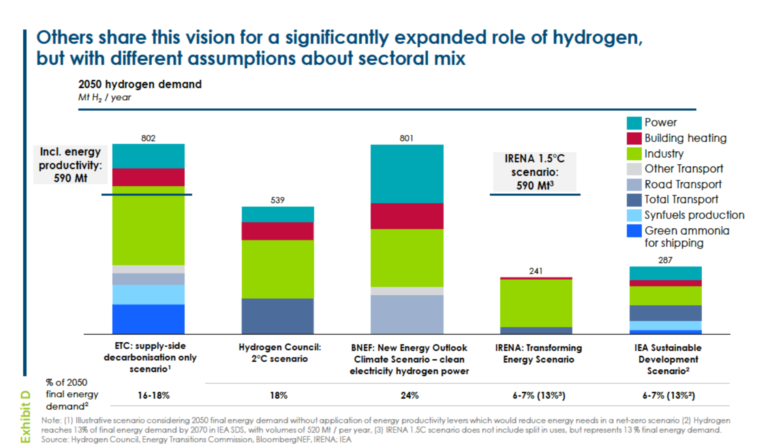
residential heating using heat pumps driven by electricity generated by renewables or personal transport using battery powered cars appear to make more sense in most cases. However, this has not stopped experimentation with hydrogen grids for residential heating and hydrogen fuel cell cars by companies such as Toyota. But it is becoming more likely that hydrogen will find an important position as a fuel in many other areas that need to be decarbonised from steel and cement production to heavy duty vehicles, trains, shipping and power generation.

Figure S.3 Clean hydrogen policy priorities



Sources: IRENA (forthcoming-b).

Estimates by a variety of international authorities (BloombergNEF, the Hydrogen Council, the Energy Transitions Commission, IEA, and IRENA) estimate the hydrogen market is set to grow up to 2050 and beyond but scenarios vary considerably depending on assumptions. For example, one IEA Net Zero Scenario estimates demand at 530 million tonnes whilst the Energy Transitions Commission (ETC) estimates demand at between 500-800 million tonnes. In some scenarios green hydrogen dominates but in others blue hydrogen is also important. There is at this stage lots of uncertainty about the future size of the green hydrogen market but all informed observers agree it is due to grow significantly.



Faced with the urgent need to decarbonise, governments, especially those in high-income countries, are faced with having to create a new green hydrogen industry ensuring both supply and demand grow in parallel. Many countries are taking action to promote green hydrogen and have developed or are developing hydrogen policies and strategies. Among Bloomberg NEF's ten predictions for 2022 was that, after the number of countries with a hydrogen strategy doubled in 2021 from 13 to 26, in 2022 22 more countries could follow. While not all roadmaps are equal, the strategies from the US, Brazil, India and China could redraw the world's hydrogen map once released — if followed by policies to boost clean hydrogen use in promising sectors[4].

[4] https://about.bnef.com/blog/hydrogen-10-predictions-for-2022/

Figure 3.1 Hydrogen strategies and those in preparation, October 2021

Source: Bloomberg (2021b) and WEC (2021). Map source: Natural Earth, 2021
Disclaimer: This map is provided for illustration purposes only. Boundaries and names shown on this map do not imply any endorsement or acceptance by IRENA.

In principle, therefore, if Namibia can use its solar and wind resources and its proximity to seawater on the coast to generate green hydrogen, it can export into a market that looks set to grow up to 2050 and beyond. This will involve using its abundant solar resource to drive seawater desalination plants to provide water which is then split in electrolysers also driven by electricity generated by renewables into hydrogen and oxygen.

The most significant drawback, however, is that Namibia is located far from the industrial markets where hydrogen is consumed. The hydrogen needs to be transported to major markets with the European market being the most proximate while some may be consumed locally and regionally. This will therefore require constructing an integrated green hydrogen facility involving solar PV or wind-generated electricity, seawater desalination plants, pipelines, storage, liquifaction, harbour and shipping facilities. The whole idea works only if all the components work and scale is critical. And the critical question is how much it will cost and what this means for the cost of delivering green hydrogen to the end consumer.

Given these factors, the main elements of any green hydrogen industry in Namibia would have to incorporate the following six components:

1. Sea water desalination plants – to generate the pure water needed as an input.

2. Electrolysers – to split the water into its components of hydrogen and oxygen.

3. Renewable power (solar PV or wind) to generate the electricity to power the desalination plants and electrolysers.

4. On-site storage infrastructure at a suitable location.

5. Pipelines to carry the hydrogen to local and regional markets or to a port as well as storage facilities.

6. Port infrastructure sufficient to be able to receive, store and load ships to carry the final product to market.

The key question is one of cost, not only of producing the green hydrogen (where Namibia has some important advantages) but of delivering it in a cost competitive way to end customers (where Namibia has a huge disadvantage).

Up to now, green hydrogen has been much more expensive than black or grey hydrogen. But because of the rapidly falling cost of renewable energy, the cost of green hydrogen looks set to fall from US$10/kg in 2020 – generally higher than blue hydrogen (from coal or gas with carbon capture and storage or CCS) to less than US$2/kg by 2050, according to BloombergNEF. The US Hydrogen Shot aims to bring the cost down to less than US$1 for 1kg in 1 decade ("111"). McKinsey thinks Namibia could be producing green hydrogen at US$1.5/kg by 2030 compared to an estimate of between US$4-5.5/kg in 2020. This places Namibia among the five lowest-cost producers in the world (with Australia, Chile, Spain and Saudi Arabia). But this does not include the cost of delivery.

In January 2022, a new purpose-built ship the Suiso (Japanese for hydrogen) Frontier built by Kawasaki Heavy Industries (KHI) of Japan under the CO2-free joint Hydrogen Energy Supply Chain Technology Research Association (HySTRA) programme[5], undertook the world's first delivery of liquid hydrogen 9,000km from Australia to Japan. A key feature of the ship was its new 1,250-cubic-metre, vacuum-insulated double-shell-structure stainless steel LH2 cargo tank specially developed by Harima Works, a subsidiary of KHI. The ship itself is diesel electric. This was financed by a special scheme called the Hydrogen Energy Supply Chain (HESC) Project. Rather ironically, the hydrogen in this first shipment was derived from Australian brown coal. But the fact that hydrogen is already being shipped long distances could have important implications for Namibia.

Rather than ship liquid hydrogen over great distances at enormous cost, an alternative approach would be to ship ammonia at much lower cost using already mature technology. To the above infrastructure elements could be added an ammonia plant driven by renewable energy which would combine the hydrogen produced with atmospheric nitrogen as described above. Ammonia can also be used as a fuel (releasing N_2 and water) and attention is focusing on using it as a fuel for maritime shipping[6].

Given the high costs of transporting green hydrogen and ammonia long distances, it may make sense to relocate industry to locations where green hydrogen and ammonia is cheap to produce in those cases where the energy cost reduction exceeds the additional shipping cost. "The cost of transporting renewable energy, whether in the form of electricity or hydrogen, remains relatively high," says a recent report by IRENA. "The cheapest way to transport energy is in materials and products. Thus, renewable potentials create a significant competitive advantage for regions with surplus renewable resources to become sites of green industrialisation. "Relocating industry makes sense where the energy cost reduction exceeds the additional shipping cost. Relocation may benefit commodities such as aluminium, ammonia, iron, jet fuel and methanol." A good example of this was the shift of aluminium smelters (which are highly energy intensive) to locations where energy was cheap (typically hydroelectric power) after the oil shock of the early 1970s. Likewise, ammonia plants have typically been located near plentiful supplies of natural gas. Against this, of course, has to be set the synergies that many industrial clusters exhibit which makes relocation difficult. However, global growth in demand for many products means that new plants can be established without necessarily relocating or closing existing ones.

A more ambitious alternative to either green hydrogen or green ammonia production and export would therefore be for Namibia to embody the green hydrogen it produces locally into green products which can then be exported. One example of this might be green steel, especially because Namibia is a (modest) producer of iron ore (Lodestone). However, this would involve even more complex industrial clusters.

[5] https://www.hystra.or.jp/en/
[6] https://www.lr.org/en/insights/articles/decarbonising-shipping-ammonia/

Timeline of Developments in Namibia

In March 2021, President Hage Geingob launched the Harambee Prosperity Plan II which contained information about the government's green hydrogen plans [pages 36 and 37]:

Investigate the feasibility of Green Hydrogen and Ammonia as a transformative strategic industry.

To unlock the above potential the following actions will be carried out:

An Inter-Ministerial Green Hydrogen Committee (GHC) shall be constituted in first quarter of the 2021/22 financial year to oversee the development of the opportunity set during the HPPII period.

A National Green Hydrogen and Ammonia Strategy shall be drafted by the end of third quarter of the 2021/22 financial year.

A detailed feasibility study shall be conducted and completed by 2023 with a Final Investment Decision (FID) expected in 2024.

The development of the Southern Corridor Development Initiative (SCDI) vision shall be championed by the GHC and phase 1 of the concept will be completed by fourth quarter of the 2021/22 financial year. The SCDI shall include a portfolio of complementary projects and infrastructure that maximises the opportunity presented by Green Hydrogen and Green Ammonia for the country.

A coordinated approach with Green Diplomacy is required to unlock support from countries with similar ambitions. This will be coordinated under Goal 3, Activity 1 above throughout the HPPII period.

At the time, this seemed extremely ambitious, especially given the government's record on delivery. Developing countries, because they are generally technology followers rather than leaders, typically grow by developing industries already developed elsewhere but where, because of lower labour costs or other factors, they are able to get on the development ladder. Garment manufacturing and diamond cutting and polishing are good examples of this. In this case, however, Namibia's ambition is to get in on the ground floor of a new global industry at the beginning of what is likely to be a rapid growth path and become a world leader. The ambition is breath-taking. Yet the table below shows that a broad section of government has moved quickly to drive this ambitious agenda forward.

Table 2: The Story So Far

Date	Event
16 March 2020	President Geingob announces he will create a Namibia Investment Promotion and Development Board to replace the Namibian Investment Centre.
June 2020	Germany publishes a National Hydrogen Strategy, one of the first countries to do so.
1 September 2020	James Mnyupe is appointed Presidential Economic Advisor from 1 September 2020.
December 2020	World Bank publishes "Green Hydrogen Opportunities for Namibia – Phase I Report".
1 January 2021	Namibia Investment Promotion and Development Board (NIPDB) is established in the Office of the President and Nangula Uaandja is appointed CEO.
18 March 2021	President Geingob launches the Harambee Prosperity Plan II with the Southern Corridor Development Initiative as part of the Economic Advancement Pillar.
31 March 2021	A delegation from the Fortescue Future Industries visits Namibia on an exploratory mission to establish a green hydrogen project in Luderitz and pays a courtesy call on Prime Minister Saara Kuugongelwa-Amadhila.
May 2021	McKinsey & Co publish "Roadmap to Build Namibia's Green Hydrogen Sector".

28 May 2021	"Namibia Port of Rotterdam Hydrogen Supply Chain Prefeasibility Report" is published
June 2021	Namibia Green Hydrogen Research Institute established at UNAM
June 2021	Global engineering consultancy Hatch develops "Namibia's Green Hydrogen Strategy" at the request of Government.
7 June 2021	The US Department of Energy launches its first Energy Earthshot – the hydrogen shot – aiming to reduce the cost of clean hydrogen by 80% to less than US$1 for 1kg in 1 decade ("111").
3 August	James Mnyupe is appointed Green Hydrogen Commissioner and an eight-member Green Hydrogen Council is established.
3 August 2021	President Geingob launches a green hydrogen Request for Proposals (RFPs) which are handled by the NIPDB.
17 August 2021	UK launches Hydrogen Strategy.
25 August 2021	NPC Director General Obeth Kandjoze signs a €40 million hydrogen partnership between Namibia and Germany and a Joint Communique of Intent in Windhoek and Berlin.
31 August 2021	US holds "Hydrogen Shot" Summit.
16 September 2021	Namibia receives nine bids from local, regional, and international developers to create large-scale green hydrogen projects for the SCDI.
2 September 2021	The Green Hydrogen Research Institute was established at the University of Namibia following Cabinet approval.
4 October 2021	Namibia hosts a Namibia Energy Roundtable at the World Economic Forum.
October 2021	The Konrad Adenauer Stiftung publishes "Issues, Challenges and Opportunities to Develop Green Hydrogen in Namibia" by Dr Detlof von Oertzen. The report was launched in December.
4 November 2021	Energy Minister Tom Alweendo signs an MoU with the Belgian Government under which Belgium will assist Namibia to develop a hydrogen refuelling station and a medium-sized solar power plant.
4 November 2021	At the COP26 in Glasgow Namibia announced Hyphen as the preferred bidder to develop a US$9.4 billion vertically integrated green hydrogen project in the Tsau // Khaeb national park. Government states it hopes to take up a stake of between 10% and 24% in the operation.
10 November 2021	Namibia Ports Authority signs an MoU with Europe's largest port operator the Port of Rotterdam to create the infrastructure needed to transport renewable fuels to Europe.
23 November 2021	James Mnyupe tells the Africa Green Hydrogen Forum that Namibia may release a second Request for Proposals for the development of a second large-scale green hydrogen complex at the World Economic Forum in January 2022.
16 December 2021	Inaugural meeting of the Namibia private sector green hydrogen task force takes place.
22 December 2021	The 150MW alkaline electrolyser Baofeng Green Hydrogen plant opens in Ningxia China as the world's largest Green Hydrogen plant.
21 January 2022	Purpose-built Green Hydrogen cargo ship Suiso Frontier leaves Australia for Japan

Germany signed a joint communique of intent worth €40 million with Namibia in August 2021 which contained the clause:

"Germany and German partners will be given a privileged role in Namibia's green hydrogen strategy."

Germany also signed a similar agreement with South Africa for its H2.SA initiative which plans to base its hydrogen industry in Port Nolloth in the Northern Cape[7]. A separate commitment of €200 million of concessional finance for South Africa's energy sector has been made by KfW. A green hydrogen project to produce sustainable aviation fuels led by Sasol was first announced at the Sustainable Infrastructure Development Symposium South Africa (SIDSSA) in October 2021.

The Namibian Proposal

The winner of the RFP was Hyphen Hydrogen Energy. Although Hyphen has two years to conduct feasibility studies and firm up their concept, at this stage only a brief outline of the project is known. The following paragraphs are from the Hyphen website:

"The US$9.4 billion (about the same size as the entire Namibian economy) is planned to be developed in phases, ultimately targeting 300,000 tonnes of green hydrogen production a year for regional and global markets either as pure green hydrogen or in derivative form (green ammonia). Following the conclusion of a feasibility study and sign-off by the government, Hyphen will be granted the right to construct and operate the project for a 40-year period. The first phase, which is expected to enter production in 2026, will see the creation of 2GW of renewable electricity generation capacity to produce green hydrogen for conversion into green ammonia at an estimated capital cost of US$4.4 billion. Further expansion phases in the late 2020s will expand combined renewable generation capacity to 5GW and 3GW of electrolyser capacity, increasing the combined total investment to US$9.4 billion.

"Once fully developed, the project will provide a major boost to Namibia in terms of foreign direct investment and job creation. The US$9.4 billion investment amounts to the same order of magnitude of the country's current GDP, and will see nearly 15,000 direct jobs created during the four-year construction of both phases, with a further 3,000 jobs created permanently during the operational phase. More than 90% of all these jobs created are expected to be filled by Namibians. In addition to taxes, HYPHEN will pay concession fees, royalties, a sovereign wealth fund contribution and an environmental levy to the Government."

At this stage, not much more information is available. Hyphen does not mention a government shareholding. Clearly, much has yet to be decided.

[7] https://www.news24.com/fin24/economy/south-africa/german-govt-backs-sas-green-hydrogen-economy-with-over-r700m-in-grant-funding-20220118

Key Questions for Namibia

This potential project is so large that it will have important implications for Namibia's macroeconomy and public finances. Policymakers and the general public should take a critical approach to the development of this exciting new industry. The following questions require clear answers:

1. Can Namibia produce green hydrogen and/or green ammonia and deliver it to customers at a competitive price?
2. Will these customers be in Europe?
3. How much will it cost to build and operate the infrastructure required to do so?
4. How will the green hydrogen and/or green ammonia be stored and transported to end users?
5. Who is going to finance such a project and who will bear the risks associated with it?
6. What happens if things go wrong or if the green hydrogen and ammonia markets do not develop as currently envisaged?
7. What are the key assumptions that need to be met to ensure profitability?
8. Will the Government take a stake in this project which would be bigger and more strategic than anything Namibia has ever done?
9. How will the Government finance any stake given the huge cost of the undertaking given already high levels of public debt?
10. Why did the Government choose Hyphen as the winning bid of the RFP?
11. Why has the concession been given for 40 years? Mining concessions are typically for 25 years. Is it because it is likely to take a long time to become fully profitable?
12. What guarantees has the Government given to Hyphen?
13. How will the Government ensure that procurement contracts are properly awarded?
14. How will Namibia ensure it has the expertise and skilled workforce to ensure it can negotiate with international partners and play a reasonably full part in what is a new industry?
15. How will Namibia ensure environmental damage is minimised?
16. Is it possible to build a pilot project in Namibia first to test the concept before investing in a full-scale final project?
17. Rather than export green hydrogen, would it make more economic and financial sense to use it in Namibia to create other products which could then be exported?
18. Are there companies or operations that could be encouraged to relocate to Namibia on the basis of its low renewable energy cost?
19. How can Namibia maximise any benefits from such investments in terms of tax revenue, jobs, incomes and exports?
20. How can Namibia ensure it remains fully abreast of global developments in this new industry?

Further Reading:

A very big balancing act: Creating the new hydrogen economy is a massive undertaking.
It is also a delicate one. *The Economist* of October 9th -15th 2021.

Agora Energiewende, Agora Industry (2021): 12 Insights on Hydrogen www.agora-energiewende.de

Namibia Green Hydrogen Research Institute. Presentation by Prof. Dr. Anicia Peters
Pro-Vice Chancellor: Research, Innovation and Development to the Namibian Scientific Society, 27 January 2022

ESMAP. 2020. Green Hydrogen in Developing Countries. Washington, DC: World Bank.

Hydrogen Insights: A perspective on hydrogen investment, market development and cost competitiveness, February 2021. Published in January 2021 by the Hydrogen Council in collaboration with McKinsey & Company

IRENA (2022), Geopolitics of the Energy Transformation: The Hydrogen Factor, International Renewable Energy Agency, Abu Dhabi.

Joint Communiqué of Intent between the Government of the Republic of Namibia and the Federal Republic of Germany on Cooperation in the Field of Energy Resources

Issues, Challenges and Opportunities to Develop Green Hydrogen in Namibia, by Dr Detlof von Oertzen, Konrad Adenauer Stiftung, October 2021

Why shipping pure hydrogen around the world might already be dead in the water
Physics and cost mean that ammonia is a far more economic option for long-distance seaborne transportation. By Leigh Collins - 27 January 2022 9:20 GMT UPDATED 27 January 2022 9:20 GMT

Global Hydrogen Review 2021, IEA

Making the Hydrogen Economy Possible: Accelerating Clean Hydrogen in an Electrified Economy, Energy Transitions Commission, 27 April 2021

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About Democracy Report

Democracy Report is a project of the IPPR which analyses and disseminates information relating to the legislative agenda of Namibia's Parliament. The project aims to promote public participation in debates concerning the work of Parliament by publishing regular analyses of legislation and other issues before the National Assembly and the National Council. Democracy Report is funded by the Embassy of Finland. The contents of this briefing paper do not necessarily reflect the views of the Embassy of Finland.

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