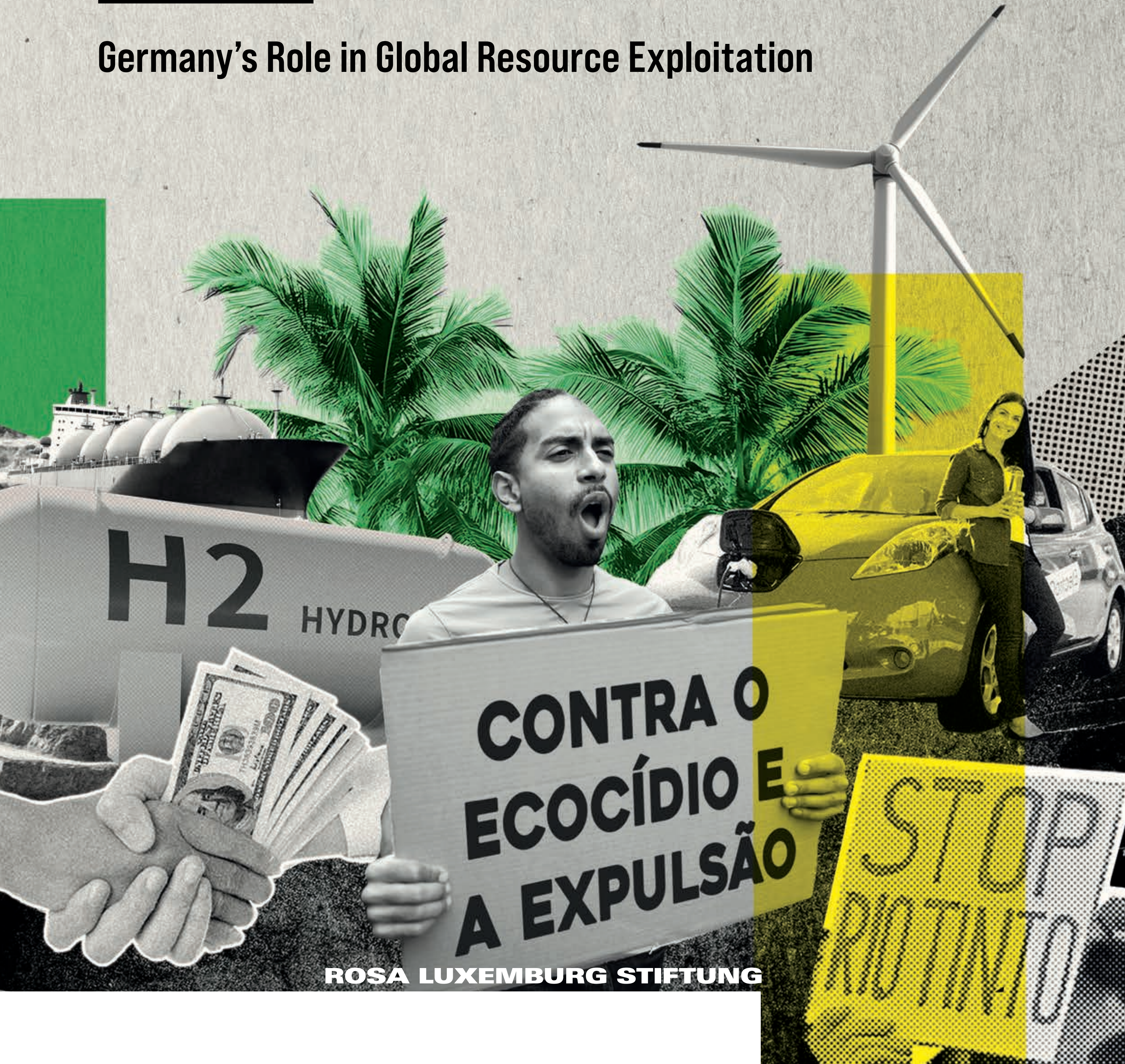
# GREEN AT HOME, HARM ABROAD

## Germany’s Role in Global Resource Exploitation




ROSA LUXEMBURG STIFTUNG


## GREEN HYDROGEN IN NAMIBIA

# Unequal Partners? Risks and Realities of German-Namibian Hydrogen Cooperation

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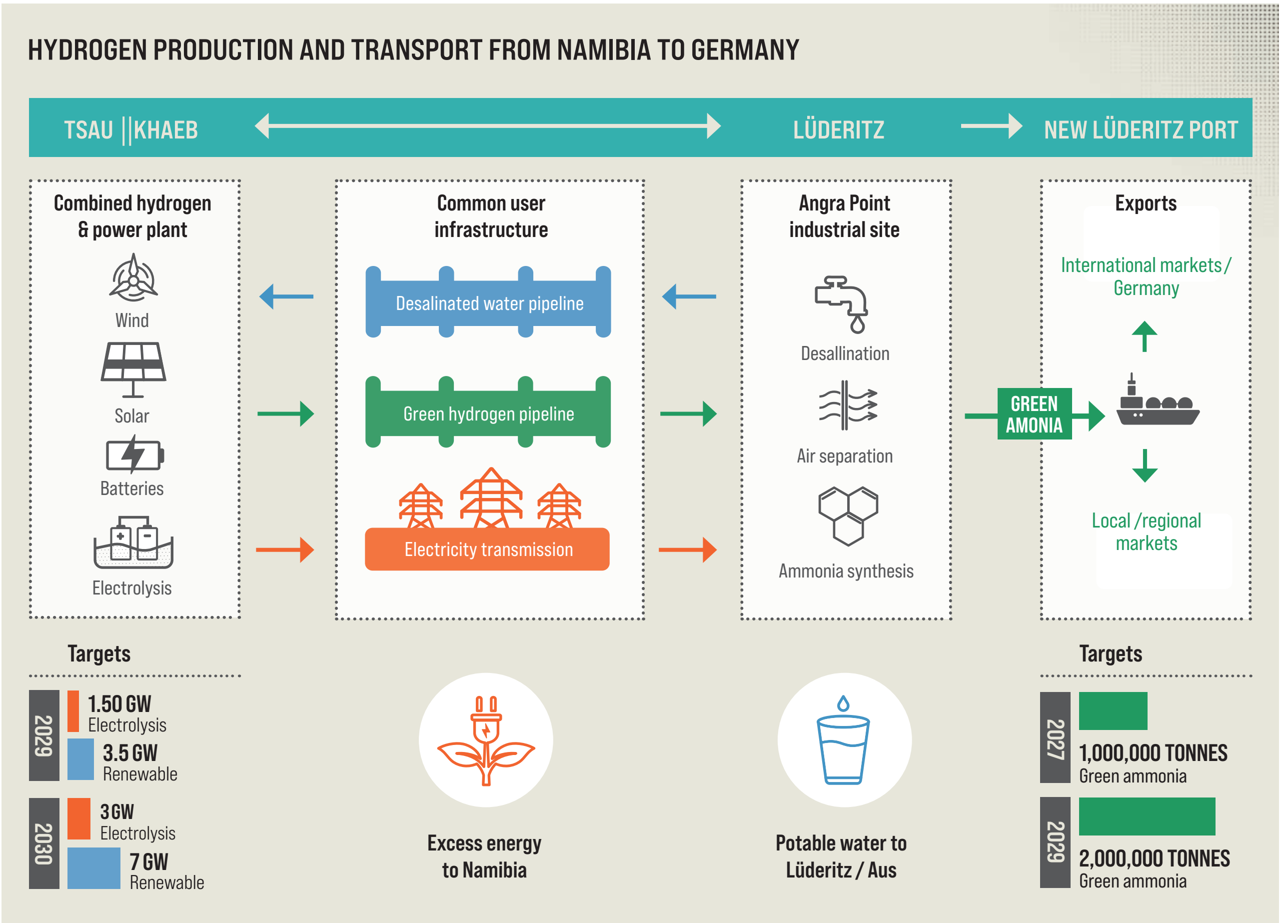
## INTRODUCTION

Starting in 2020, Germany's foreign energy policy led to a wave of planned investments in "green" hydrogen (H2) projects. Unlike other forms of production that rely on fossil fuels and release carbon emissions, green hydrogen is produced through water electrolysis, using renewable energy sources like wind or solar and emitting no greenhouse gases. This case study explores how the Hyphen project, a German-Namibian joint venture set in a national park, exemplifies the previous German Government's role as a global hydrogen super buyer. Analyzing how the German-led H2 policy influences international energy markets and bilateral cooperation with producers in the Global South, we examine Namibia's turn to hydrogen, which has led to large-scale governance changes and investments for the country. We show that projects like Hyphen, which claim to reduce inequality and energy insecurity in Namibia, risk perpetuating unequal power structures and causing irreversible environmental damage. Building on interviews, parliamentary inquiries (Die Linke im Bundestag 2024), and scholarship on energy democracy, we call for a range of legal and non-legal measures to work towards an environmentally and socially just hydrogen economy.

## 1. THE HYPHEN PROJECT: A Case Study in Green Colonialism?

In 2021, the Namibian government awarded Hyphen Hydrogen Energy (Hyphen) 4,000 km$^2$ of land for the construction of a US$9.4-billion green hydrogen project within the Tsau ||Khaeb National Park, a 26,000 km$^2$ traditionally Indigenous area with unique biodiversity (Ministry of Environment, Forestry and Tourism, Park Management Plan 2020). The joint venture between Enertrag SE, the South African arm of German Enertrag AG, and Nicholas Holdings, an offshore entity registered in the British Virgin Islands, plans to install 40 km$^2$ of solar panels and over 500 wind turbines. Spanning an area almost as large as Berlin, Germany, with investments equal to Namibia's 2020 GDP, Hyphen is set to become Africa's biggest green hydrogen project, mainly targeting exports to Asia and Europe. It anticipates producing 1 million tons of green ammonia annually by 2028, and 2 million tons by 2030. Due to high transportation costs and the lack of large-scale shipping infrastructure, hydrogen cannot currently be viably exported as a standalone product. Instead, it is liquified or combined with nitrogen to produce ammonia, which is more transportable and used both as an industrial chemical and as a hydrogen carrier. The largest offtake agreement to date, a memorandum of understanding (MoU) with German energy company RWE, signed in December 2022, outlines the sale of 300,000 tons of ammonia per year to a newly-built terminal in Brunsbüttel, Germany (RWE 2022).

Today, hydrogen made from renewable sources accounts for only 0.4 % of global hydrogen production, while the remaining 99.6 % — classified as grey or blue and derived from fossil fuels[1] — was responsible for over 900 million tons of $CO_2$ emissions in 2021 (IEA 2022, 71). Despite its clean image, green hydrogen comes with significant limitations and risks. The electrolysis process is highly energy-inefficient — about 30 % of the renewable electricity used is lost. Further losses occur when hydrogen is converted into ammonia, liquefied, or turned back into electricity (Eberhardt 2023, 11). In a context of scarce renewable capacity, prioritizing green hydrogen can lead to higher emissions if fossil fuels are used to fill the energy gap. Furthermore, investor and industry confidence has waned following the initial green hydrogen hype, as project delays, unclear political signals, falling corporate profits, uncertain global demand, and limited renewable capacity raise doubts, opening the door to a return to fossil fuel reliance and higher emissions (Handelsblatt 2025). Compounding this, hydrogen is a powerful indirect greenhouse gas: when leaked into the atmosphere, it reacts with other gases like methane, increasing their global warming potential, regardless of how the hydrogen was produced.




Source: Hyphen Hydrogen Energy, "The Hyphen Project", online: <https://hyphenafrica.com/the-hyphen-project/>.

The construction of Hyphen's solar, wind, and hydrogen transformation plants is set to begin in late 2026, following an Environmental and Social Impact Assessment (ESIA) projected to start in 2025 (Hyphen 2025). Local and international groups have raised concerns about the project, highlighting the potential for irreversible biodiversity damage and the lack of transparency in mitigation strategies. The planned infrastructure could threaten fragile habitats and species endemic to the semi-arid Tsau ||Khaeb National Park (Namibian Chamber of Environment 2024; Grobler 2023). Plans to expand the port of Lüderitz into a deep-water facility risk contaminating the nearby protected Namibian Islands Area (Alagu, Boumrifak and Lopéz-González 2024; Port of Rotterdam 2023). Coastal and marine environments, designated as "Important Bird and Biodiversity Areas", also face threats from desalination plants, as brine waste with high salt concentration and temperature could suffocate seafloor organisms. While these risks have been flagged by the consulting firm hired by Hyphen for its ESIA (SLR Consulting 2024), and Hyphen has vowed to avoid the areas of highest biodiversity importance, no detailed information has been publicly shared about its plans to reduce environmental harm (Hyphen 2023).

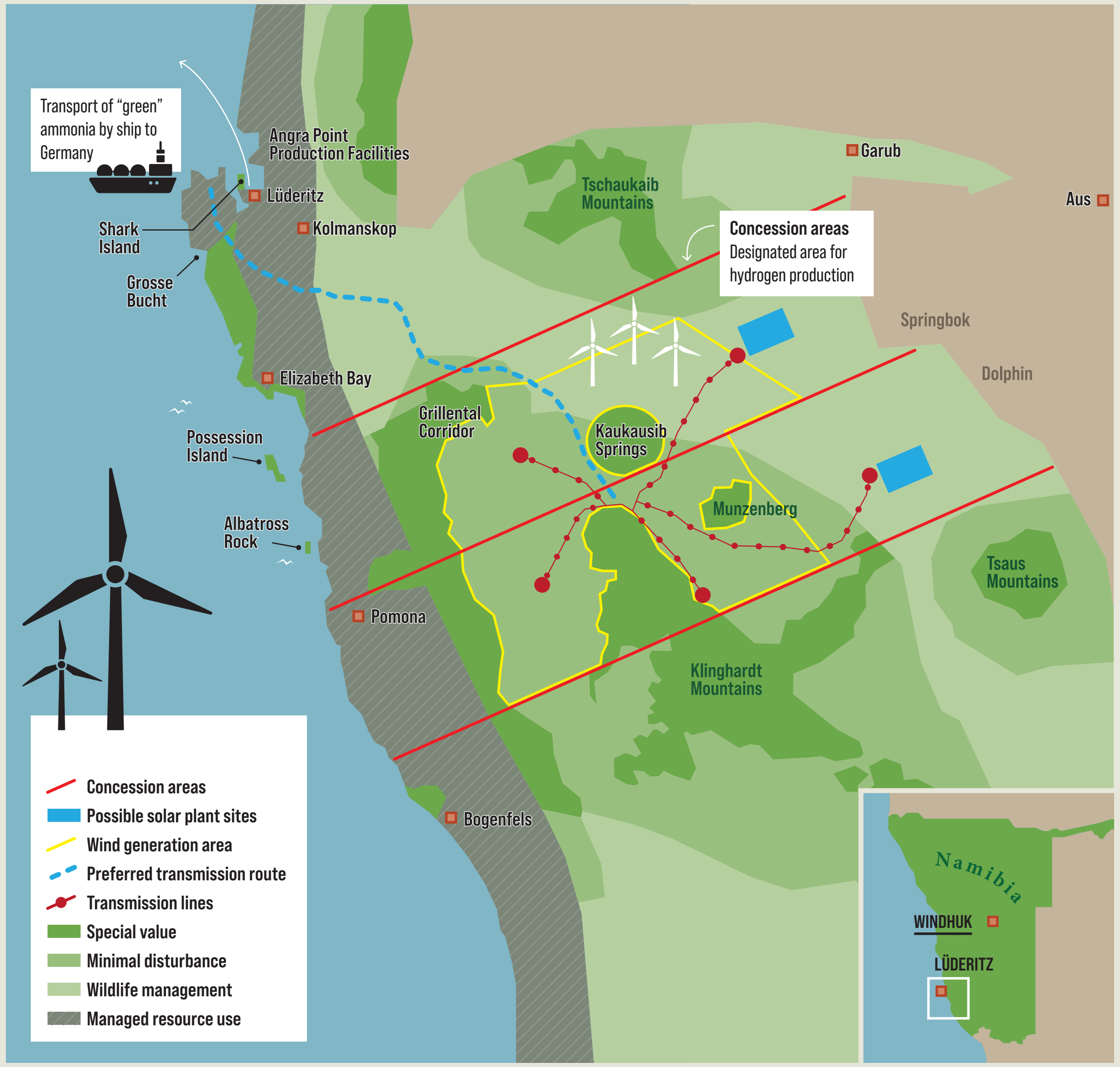
The project also faces criticism concerning the lack of consultation with local communities, undermining their ability to protect livelihoods and cultural heritage on ancestral lands (Angula 2024). Foreign investment and government involvement — particularly from Germany — have sparked criticism of "green colonialism", a term denouncing neocolonial dynamics disguised as sustainability (Tunn, Muller, Hennig et al. 2025). As environmental and social risks are placed onto post-colonial states, narratives of green transition for sustainable development conceal global inequalities. Local communities, NGOs, and scholars argue that historically marginalized groups bear the brunt of hydrogen production's social and environmental costs, while countries like Germany reap the economic and decarbonization benefits. Representatives of the Nama Traditional Leaders Association (NTLA) say their exclusion from decision-making over the use of ancestral land in Tsau ||Khaeb National Park echoes colonial patterns, as their rights become sidelined in favour of foreign investors and national elites.[2]

The planned expansion of Lüderitz Port has prompted fears of damage to sites linked to the 1904–1908 genocide of the Herero and Nama (Forensic Architecture 2024). While Hyphen refutes this criticism as "misinformation" undermining Namibia's green industrialization, the Tsau ||Khaeb National Park itself embodies the legacy of German colonial violence in Namibia. The land is still known as the *Sperrgebiet* (restricted area) due to a 1908–1914 diamond rush which led to the violence against the Nama and Herero populations, and their forced displacement. Privatized under German colonization, South African rule and later under Namibia's Namdeb Diamond Corp., it became a national park in 2008, allowing limited access for the first time since 1908. This echoes larger issues of land distribution in Namibia, which still reflect historical patterns of expropriation, with 70 % of arable land owned by white Namibians (Namibian Statistics Agency 2018). Amid concerns over land rights and colonial legacies, Germany has emerged as a key player in Namibia's hydrogen industry, presenting itself as a major investor in the name of a green transition.

## 2. GERMANY'S "GREEN" EXIT STRATEGY: H2-Bilateralism with the Global South

Faced with supply chain disruptions after the Russian invasion of Ukraine in February 2022, energy security has become a key issue in German economic and foreign policy. This spurred a push for renewables in Germany's energy-dependent car, steel, and agricultural sectors.[3] Hydrogen and its derivatives became central to the "National Hydrogen Strategy"

HYPHEN'S DEVELOPMENT PLAN IN THE TSAU ||KHAEB NATIONAL PARK




Source: TKNO Management Plan

(BMWK 2020, updated 2023), with €9-billion pledged, including €2-billion for international projects under the Import Strategy for Hydrogen and Derivatives (BMWK 2024a). While the original National Hydrogen Strategy made no mention of corporate accountability, subsequent documents pledged to uphold international guidelines such as the OECD Guidelines for Multinational Enterprises and UN principles on business and human rights (UNGPs). In fact, the new Import Strategy makes it a priority to define global H2 standards, including human rights, labour, and environmental protection as a product requirement for "green hydrogen", and tying public funding for hydrogen projects to environmental and sustainability certifications covering water scarcity, pollution, land competition, and human rights (BMWK 2025, 27). It goes as far as citing the German Supply Chain Due Diligence Act (LkSG) as an instrument for just transition, likened to a selling point for trade deals with Germany. It is still unclear how the prospective new German government will continue the current "green" hydrogen strategy.[4]

Much in line with its broader development policies, the Hydrogen Import Strategy relies on public-private partnerships and opportunities for the German economy, providing technical support and direct investments for the growth of H2 industries in the Global South. Germany's development agency Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) is tasked with implementing energy and hydrogen partnerships with African countries. These are described as an investment in the continent's sustainable development, helping countries achieve their national contributions under the Paris Agreement, and boasting local value creation, reliable and sustainable energy systems, and improvements in overall living conditions (BMWK 2024a, 8). This so-called "win-win" situation, the government asserts, "will always be done as part of a constructive dialogue and on an equal footing" (Deutsche Bundesregierung 2025, 18, 32).

Identifying Namibia as one of Germany's first partner countries, the "H2Atlas-Africa", conducted with funding from the Federal Ministry of Education and Research (BMBF), explored the country's potential as a green hydrogen "hot spot" (H2Atlas-Africa 2021). Mapping criteria such as local demand, electricity grids, port infrastructure, or political and financial stability, a main requisite was the availability of land and water resources. In a statement reminiscent of the colonial imaginary of plentiful, uninhabited lands, former Federal Research Minister A. Karliczek highlighted that "[Namibia] has a lot of vast unused space" (BMBF 2021). High wind speeds and solar power from over 3,500 hours of sunshine per year were among the other factors promising cost-efficient hydrogen production at prices between US$1.20–1.30 per kilogram by 2030 (Republic of Namibia 2022). Such projected costs are often subject to debate as they exclude transport to the EU and other costs such as liquefaction or transformation into derivatives like ammonia. Estimates, therefore, situate the levelized cost of end-use liquefied hydrogen at around US$8.55 per kilogram (Alagu et al. 2024, 13). Furthermore,

Tsau ||Khaeb National Park

current forecasts see competitiveness against grey hydrogen as unlikely before 2050 (Cheung 2025).

The conclusion of a green hydrogen partnership with Namibia in August 2020 was followed by a sequence of state visits, joint declarations, and a non-binding MoU, which allows for easier negotiation and adaptation. German officials seem well aware of the energy partnership's sensitivity, in a context where a formal agreement on the recognition and reparation of German colonial crimes in Namibia between 1884-1915 remains to be signed.[5] Reiterating that hydrogen cooperation is occurring on an "equal footing" and acknowledging errors of the past,[6] former Vice-Chancellor and Federal Minister for Economy and Climate Action Robert Habeck therefore underlined that "the last thing we can accept is a kind of new energy-imperialism" (Süddeutsche 2022). In this context, the appointment of former State Secretary Rainer Baake as "Special Commissioner for German-Namibian Climate and Energy Cooperation" in July 2022 was interpreted as an attempt to secure support for the partnership and back Hyphen (Radowitz 2022): the energy expert met with company representatives on at least eight occasions in Windhoek and Lüderitz (Deutscher Bundestag 2024, Annex 1). Despite the broad support coming from Germany, the official narrative highlights that the country's ambitious "green" hydrogen shift is an inherently national, and therefore "African" project (Deutscher Bundestag 2023).

## 3. THE NAMIBIAN ENERGY LANDSCAPE: The Way to "African Green Hydrogen"

Hyphen is just one of eight renewables-based hydrogen and ammonia projects in Namibia. The country has fully embraced the "green" hydrogen pathway, putting the export of solar and wind power at the heart of its 2021-2025 economic agenda (Republic of Namibia Harambe Prosperity Plan II 2021-2025). This commitment called for a completely new policy framework. The newly founded National Green Hydrogen Council, comprising representatives from key government institutions (Namibia Green Hydrogen Programme),[7] formally launched its "Green Hydrogen and Derivatives Strategy" at the United Nations Climate Change Conference (COP27) in November 2022 (Republic of Namibia 2022). The consultancy firm McKinsey & Company drafted the official document (The Brief Namibia 2022) following the Joint Communiqué of Intent with Germany, which was subsequently implemented by the German-funded Southern African Science Centre for Climate Change and Adaptive Land Management (BMWK 2024b). The German government also contributed technical support through advisory measures titled "Accelerating Namibia's Energy Transition" in cooperation with the EU, focusing on improving investment conditions, market and grid regulation, and the integration of renewables into the Namibian energy sector (Deutscher Bundestag 2024 nos. 5 and 16).

At its core, Namibia's new green hydrogen policies aim to attract private investments. The proposed "Synthetics Fuel Act" establishes production standards for hydrogen and its derivatives (Republic of Namibia 2022, 7, 38), much in line with Germany's push for uniform greenhouse gas limits and defining which exports can be labelled as "green" (Deutscher Bundestag 2024 nos. 6 and 15). Further legal adjustments look to set up a Special Economic Zone with a tailored tax regime, as well as a new "Implementation Authority Office" offering support to investors and overseeing the auctioning of state-owned land (Energy News 2023). The lack of transparency during the tendering process, leading to Hyphen's selection, sparked fears of corruption, raising questions about the private use of public land in the protected Tsau ||Khaeb National Park, as public access to project plans, agreements, and potential impacts was limited (IPPR 2022). While potentially increasing the country's competitiveness on global markets, measures like the Synthetic Fuels Act's tax incentives also reduce the public revenue necessary to address Namibia's development needs, showing how low-income countries can provide favourable investment terms at the expense of their own long-term fiscal stability (Gabor and Sylla 2023, 1169-1196).

With 45 % of its 2.6 million people without access to electricity (World Bank 2023), Namibia's energy landscape stands to substantially benefit from these investments. The country is still largely dependent on coal-based imports from neighbouring South Africa, prompting the opening of the state-owned electricity grid to private investments in 2018 (GIZ 2022). In line with the Paris Accords' "Nationally Determined Contributions" (NDCs), the Namibian government set itself the goal to provide power to remote populations, reduce long-term prices by increasing local production, and diversify electricity generation with a projected 60 % from renewable resources (Republic of Namibia 2023; ECB 2017). Despite Hyphen suggesting that excess energy from solar and wind parks will be directed to the national grid, it remains uncertain to what extent rural Namibians will benefit, as the promise of universal electrification appears unrealistic given the country's vast, sparsely populated terrain. Instead, Namibia's Green Hydrogen Strategy prioritizes infrastructure investments and foreign markets, with Hyphen requiring around 7,000 MW for electrolysis and ammonia production, over ten times Namibia's current peak consumption of just over 600 MW (Electricity Control Board 2022, 36).



The rapid industrialization tied to the project also risks exacerbating Namibia's already stark inequality, one of the highest in the world (World Bank 2023; Deutscher Bundestag 2024 no. 10). The planned infrastructure developments around project sites raise questions about whether investments will truly benefit local communities, even as initiatives like GIZ's support for urban planning and the modernization of local administration in Lüderitz seek to prepare for the anticipated influx of workers and investments (GIZ 2023). The recent discovery of oil reserves offshore Lüderitz and ensuing exploration by Shell, Qatar Energy and TotalEnergies, raises further questions about the Namibian government's commitment to green transition, as the government reportedly plans to fund its stake in hydrogen investments through the expected public revenue from parallel fossil fuel investments (Koorts 2023).

Beyond energy defossilization, the hopes for economic growth from green hydrogen are high: the industry could contribute up to US$6-billion to the GDP by 2030 (compared to a total of US$12.35-billion in 2023) and accelerate socio-economic development by reducing unemployment, which reached 37 % in 2023 (Reuters 2025). So-called „attractive immigration policies" and German-funded "Youth for Green Hydrogen scholarships" are envisioned to supply the necessary labour (Republic of Namibia 2022, 7, 38). While local representatives, such as the Hardap Regional Council, have signed a MoU with Hyphen for local skills development (Hyphen 2025), many opportunities will likely be temporary or low-skilled, providing little long-term prospects for Namibian workers. For example, Hyphen advertised 15,000 jobs for the initial building phase, but will only need 3,000 to run the facility long term (Hyphen 2023, 2). The company's commitment to filling 90 % of jobs with Namibians is mitigated by the hydrogen industry's reliance on specialized foreign technical expertise, meaning local workers could be unable to participate in all stages of the project, as the German Government admits (Deutscher Bundestag 2024 no. 10).

## 4. A JUST TRANSITION FOR WHOM? H2 Markets and Green Capitalism

Hyphen exemplifies how infrastructure projects can perpetuate extractivist practices within a post-colonial economic order, highlighting the contradictions in development efforts that reinforce the issues they seek to address. While Namibia is comparably less at risk than some other African countries, it is not immune to potential destabilization and rising debt pressures (Hashali 2020), rooted in entrenched economic structures and contemporary financial relations that favour wealthier nations and multinational corporations (Debt Justice 2022). Hyphen's funding structure shows a collaboration between private and public stakeholders enmeshed in a network of "green finance" agreements. It remains to be seen how well its joint owners —

### HYDROGEN JUSTICE RECOMMENDATIONS

**PROCEDURAL JUSTICE**

Local communities are included in transparent decision-making about H2 policies and tendering, relying on legal environmental and human-rights protections in energy partnerships and mandatory due diligence laws.

**DISTRIBUTIVE JUSTICE**

Global South economies are guaranteed a fair allocation of benefits from H2 development, favouring cooperative regional projects with high local-added value and equal access to affordable renewable energy.

**RECOGNITIONAL & RESTORATIVE JUSTICE**

Governments and H2 companies acknowledge the vulnerabilities of marginalized groups by collaboratively designing community-based projects and financing an African energy transition as a form of reparation for past colonial exploitation.

**RELATIONAL JUSTICE**

Recognizing that even "green" hydrogen relies on intensive resource use, standards guarantee H2 is made from 100 % additional renewable energy, avoiding negative impacts on human-nature/water relations.

**EPISTEMIC JUSTICE**

Just transition values diverse knowledge systems and avoids Eurocentric biases by reforming H2 markets, de-risking tools that increase sovereign debt, and preventing the capture of H2 governance by corporate interest.

mid-sized German Enertrag with an annual turnover of €250 million and Nicholas Holdings, registered in a tax haven and embroiled in lawsuits over past investments — will fare at the helm of this US$10-billion project (Climate Home News 2023). To date, the Namibian government has signed an option to acquire up to a 24 % equity stake, entitling it to future profits but exposing it to potential losses if the project fails to generate returns or requires additional capital (Matthys 2024). The exact cost to Namibia remains undisclosed, but its government initially invested €23 million through the SDG Namibia One fund, a US$1.1-billion blended finance initiative managed by Namibia's public Environmental Investment Fund (EIF) and two private investment firms based in the Netherlands (SDG Namibia One 2023). SDG Namibia One is key to Namibia's strategy to "de-risk" its green hydrogen sector, aiming to reduce investors' perceived risks through concessional loans, public guarantees, and insurance — ultimately shifting financial risks to state actors (Scholvin, Black, and Robbins 2025).

> As Germany and Namibia ramp up investments, they shape a global regulatory framework for "green" hydrogen and set standards for a fair climate transition.

This international financing, such as Germany's pledge to invest €40 million in the initial phases of bilateral cooperation, underscores Namibia's reliance on external capital. In 2023, the EU signed a partnership agreement to develop green hydrogen and critical mineral infrastructure in Namibia, including a €500 million loan from the European Investment Bank (EIB 2025). This global financial system is built upon a network of H2 lobbying, carried by an industry betting on "green" hydrogen to stay in business, including major fossil traders like RWE (Eberhardt 2023, 19). Business representatives and industry-linked experts dominate the German National Hydrogen Council and "H2Global". Similar to Namibia's de-risking framework, H2Global is an auction scheme covering the gap between high costs and the price companies like RWE are willing to pay with substantial public subsidies (Hintco 2022).

While there are no German taxpayer-funded financial loans for Hyphen yet, the government is considering support, with preliminary talks on funding criteria and the potential promotion as a "strategic foreign project" (Euler Hermes 2024; Deutscher Bundestag 2024 nos. 15, 17, and 18). Namibian communities are not necessarily opposed to green hydrogen investments, but many stress the need for transparency, warning that projects like Hyphen prioritize private investors and bypass public consultation. Maboss Ortmann of the NTLA warns that Hyphen repeats history, calling it a "neocolonial and neoliberal" project focused on resource extraction for Europe.[8]

## 5. LOCAL DEMANDS RE-CENTRED: A Call for Hydrogen Justice

Reinforcing calls for "hydrogen justice", local communities such as the Nama and Herero, represented by the NTLA and Ovaherero Traditional Authority, demand the equal distribution of risks and benefits from "green" hydrogen projects in Namibia (Müller, Tunn and Kalt 2022). In line with energy justice and democracy movements, we therefore argue that Hyphen and the German-Namibian H2 partnership must address the intersection between unequal energy distribution and colonial extractivism, taking into account economic injustices, environmental vulnerabilities, and racist or gender-based exploitation (RLS 2023).

Hydrogen justice emphasizes the importance of breaking colonial trade patterns that position Namibia as a mere exporter of raw materials and energy. Considering its reliance on energy imports, Namibia should avoid shifting this dependency to an economic one tied to investments and exports to the Global North. Access to universal, reliable and affordable energy is crucial for the realization of human rights, recognized as a public good under SDG 7 that cannot be subjected to the laws of the market. Instead of privatizing its energy landscape, Namibia could prioritize publicly owned renewable energy systems involving decentralized and cooperative practices, such as mini-grids powered by solar and wind energy, which improve access to electricity in underserved regions and foster economic self-determination (Grüne Bürgerenergie 2023). To generate employment, H2 cooperation should avoid offtake uncertainties and reduce carbon footprints from hydrogen transport to Europe by focusing on building sovereign net-zero industries. German-funded projects such as the Hy-Iron "green iron" pilot or the Daures Green Hydrogen Village for H2-based fertilizer, creating value-added products locally, may serve as examples (Hylron 2022). Presented as a climate adaptation measure, green hydrogen should never come at an unacceptable cost to biodiversity, particularly in protected areas (IUCN 2023). Building solar and wind plants in the Tsau ||Khaeb National Park has been labelled as producing "red hydrogen" by the Namibian Chamber of Environment (2024), as it is likely to increase threats to plant and animal species included on the IUCN Red List of Threatened Species (Namibian Chamber of Environment 2024, 3). This calls for heightened due diligence in Hyphen's ESIA, which should not only focus on the most visible "special value zones" but also consider construction phase disturbances and damages to "minimal disturbance" buffer zones that serve as migration corridors and help prevent habitat fragmentation (Namibian Chamber of Environment2024, 4). The German government's support for hydrogen development should include additional precautionary and accompanying measures that promote conservation and restoration in Tsau ||Khaeb National Park,[9] as both terrestrial and marine protected areas have been shown to contribute to climate mitigation through natural carbon capture (IUCN 2023, 2).

For companies like Hyphen, fostering accessible human rights mechanisms is important to secure a "social license to operate". Privatized consultations, such as Hyphen's "National Green Hydrogen Roadshow" (Hyphen 2023), are often shortsighted and lead to a commodification of local concerns, treating community consent as a necessary business cost (Hyphen 2023; Terwindt and Schliemann 2017, 100). This difficulty is illustrated by recent allegations that talks between Hyphen and the Hardap Regional Council in February 2025 are being misrepresented as securing support for the project from the Nama association NTLA (Confidente 2025). The Hardap Regional Council is a regional body that co-signed a public-private partnership covering local skills development and capacity building under its public mandate (Hyphen 2025). The NTLA was not present at the signing, and since reiterated its demands for the preservation of cultural heritage sites in Lüderitz. Extractive supply chains are often marked by democratic deficits, community violence, and bribery, and attempts to influence Indigenous communities are frequent (Terwindt and Schliemann 2017, 62, 74). The NTLA criticized corporate behaviour that it says legitimizes the "original illegal transfer" of Tsau ||Khaeb National Park, threatening the erasure of land ties and the prospect of the rightful owners' return to it (Nama Traditional Leaders Association 2025).

Integrating local knowledge and consideration for human-nature relations can help develop systemic alternatives for energy transition in vulnerable natural ecosystems. For example, degrowth frameworks challenge the growth-centric economic model and advocate for systems that prioritize wellbeing, ecological balance, and social equity (RLS 2023, 26). Integrating transitional justice into the "just transition" framework — acknowledging historical wrongs and implementing restorative actions can also address past traumas

### The German Supply Chain Due Diligence Act (LkSG) in Practice

Both German firms involved in or with Hyphen (Enertrag and RWE) fall under the scope of the LkSG. For the prominent energy company RWE, this is the case because of the law's "direct supply" under § 2 VII LkSG, which requires it to implement risk-management measures along the entire "green" hydrogen supply chain to prevent or address human rights and environmental violations. Under § 14 LkSG, locally affected communities could file a complaint to Germany's Federal Office for Economic Affairs and Export Control (BAFA), possibly prompting investigations and pre-emptive measures.

A plausible claim of violations or imminent risks caused by Hyphen's activities could entail coercive measures and fines for the responsible companies. For example, environmental harms that impact public health are prohibited under § 2 II No. 9 LkSG, including water, air, and soil pollution or excessive water use. The law bans forceful evictions and unlawful deprivations of land (§ 2 II No. 10 LkSG), and also imposes the right to "due consideration" of all parties directly affected by the economic activity of an enterprise (§ 4 IV LkSG).

The former provision, which forbids the taking of land that secures the "livelihood of a person", should be extended to the cultural "livelihood" of Nama and Herero minorities, an interpretation supporting self-determination in relation to the land from which they were historically displaced — a principle reflected in Namibia's Traditional Authorities Act 25, which protects cultural and remembrance sites.

Though mandatory human rights due diligence faces criticism for the laws' limited scope and Western-centric approach, its potential lies in access to justice and in the leveraging of investigative powers in intricate supply chains. In Namibia's post-colonial context, due diligence obligations should be expanded to address entrenched inequalities and social conflicts, incorporating perspectives from Third World Approaches to International Law (TWAIL) and acknowledging the crimes committed during, and after, German colonial rule.

and inequalities in Namibia. This goes hand in hand with centring enforceable socio-economic guarantees in North-South hydrogen cooperation to replace exploitative patterns still prevalent in Africa (RLS 2023, 15). As a principle, hydrogen institutions should comply with international anti-corruption and "good governance" standards, preventing undue H2 lobbying and influence both in Namibia and Germany.

As Germany and Namibia ramp up investments into Africa's H2 future, they shape a global regulatory framework for "green" hydrogen, setting standards for a fair H2 economy and climate transition (Klingen et al. 2024). A guiding source could be the principle of "Additionality 2.0" proposed by the Rosa-Luxemburg-Stiftung, which cautions that green hydrogen exports should benefit supplier countries (RLS 2022, 103). Investments should not only be about building renewable energy plants required for hydrogen electrolysis but also provide basic "do-no-harm" guarantees that avoid conflicts with the local population and biodiversity. There should be measures providing added value to communities, such as investments in renewable energy and public infrastructure. German development cooperation, including H2-financing tools, research projects or pilot studies, is itself bound by human rights legislation, which can be used to anchor these ambitious social and ecological criteria (Deutscher Bundestag 2024; DEval 2022). At the very least, the cited national hydrogen policies and funding instruments should include verifiable, legally binding sustainability and human rights targets dictating compliance requirements for companies across the hydrogen supply chain under current mandatory human rights due diligence laws (Klingen et al. 2024, 23).

Using tools like the LkSG, local stakeholders can demand inclusion in hydrogen project decision-making processes. Considering the impacts of "green" investments on Indigenous rights, the German government has been asked to clarify its commitment to the ILO Indigenous and Tribal Peoples Convention (No. 169) ratified in April 2021, which it reportedly deems not to carry any extraterritorial obligations.[10] To fully realize the LkSG as a just transition tool, the principle of "free, prior, and informed consent" included in this document should be incorporated in Germany's supply chain legislation, such as in the adoption of the EU Corporate Sustainability Due Diligence Directive (CSDDD).[11] A human rights approach to "green" hydrogen provides a legal framework for corporate accountability of H2 investments and supports community expectations for a just transition. For instance, while the German government states it is "not aware" of any risks for Indigenous groups resulting from hydrogen projects in Namibia (Deutscher Bundestag 2024, nos. 42–43), the NTLA and Ovaherero Traditional Authority submitted evidence to the contrary to the UN Human Rights Council (OHCHR 2024), exposing a lack of consultation in the expansion of Lüderitz harbour and nearby sites where graves from German colonial crimes have been discovered.

## Endnotes & References

[1] Blue hydrogen, like grey hydrogen, is produced from fossil fuels — typically natural gas — but it incorporates carbon capture and storage technology to reduce carbon emissions. See Institute for Energy Economics and Financial Analysis, "Blue Hydrogen's Carbon Capture Boondoggle". March 2025. https://ieefa.org/sites/default/files/2025-03/Blue%20Hydrogen%E2%80%99s%20Carbon%20Capture%20Boondoggle_March%202025.pdf

[2] Interview with Maboss Ortmann, Nama Traditional Leaders Association, 7 November 2024.

[3] The German government expects that 50-70 % of its hydrogen will be imported by 2030. See: Deutscher Bundestag, *Antwort der Bundesregierung auf die Kleine Anfrage der Gruppe Die Linke.* 2024, no. 12. See also Statista,"Green Ammonia Market Volume in Europe in 2021, with a Forecast for 2030, by Country ", June 2022. https://www.statista.com/statistics/1351600/green-ammonia-market-volume-by-country-europe/

[4] In January 2025, Chancellor candidate Friedrich Merz had to partly retract his statement that he "does not believe in a quick shift to green hydrogen steel" following industry criticism. See ZDF, "Kritik an Merz-Aussagen zu 'grünem' Stahl". January 2025. https://www.zdf.de/nachrichten/politik/deutschland/gruener-stahl-merz-habeck-100.html

[5] After the German-Namibian Joint Declaration failed to be ratified, Ovaherero and Nama representatives sued for reparation with the Namibian High Court in January 2023. See https://www.bundestag.de/resource/blob/994500/30ed8d4ad7889145ac3884b1c4aff588/WD-2-007-24-pdf.pdf

[6] Compare BMBF, Joint Communiqué of Intent, August 2021, 1.

[7] For information on the Namibia Green Hydrogen Programme, see https://gh2namibia.com/about/

[8] Interview with Maboss Ortmann, 7 November 2024.

[9] Germany already supports biodiversity management of Tsau ||Khaeb National Park with a €3 million grant. See KfW, "Integriertes Parkmanagement in Namibia III". https://www.kfw-entwicklungsbank.de/ipfz/Projektdatenbank/Integriertes-Parkmanagement-in-Namibia-III-41509.htm

[10] Reg. Begr., *Gesetzesentwurf zu dem Übereinkommen Nr. 169 der Internationalen Arbeitsorganisation vom 27. Juni 1989 über eingeborene und in Stämmen lebende Völker in unabhängigen Ländern* (BT-Drs. 19/26834). February 2021, 23; also see Deutscher Bundestag 2024, *Antwort der Bundesregierung no. 41. (2024)*

[11] Cf. ground 33 of the CSDDD referencing the UN Declaration on the Rights of Indigenous Peoples.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