

From false solutions to truly just transitions: Recommendations for MDB clean energy financing

Multilateral development banks (MDBs) are under growing scrutiny over how their energy finance shapes the energy systems of tomorrow, and whether it is helping, or hindering, just transition to sustainable energy. While MDBs claim alignment with the Paris Agreement and the Sustainable Development Goals, their recent energy investments (2022–2024) show a troubling pattern: Public finance continues to flow to large-scale, centralised, high-risk projects, with no consideration of social and environmental protections.¹ These kinds of projects — including large hydropower, industrial biofuels, nuclear, carbon capture and storage (CCUS), 'blue' and 'green' hydrogen for export, waste-to-energy, fossil gas, and carbon markets — are false solutions to the climate crisis. They distract and delay from real, people-centred solutions, while undermining equity, deepening debt, and sidelining women, youth and local communities.

This briefing sets out to expose the disconnect between MDB rhetoric and practice when it comes to investing in the energy transition, and make recommendations for the kind of real solutions that MDB finance should scale up. It builds on briefings² published in April 2025 about how and why MDBs must target renewable energy investments to benefit women and youth, as well as online workshops conducted in August 2025.³

We urgently need a just transition to clean energy systems, from national grids to decentralised technologies, which ensures gender and intergenerational equity along the way. The Banking on Renewables campaign⁴, supported by more than 50 organisations, sets out key criteria for the kind of MDB investments that we need:

- **Finance a transition towards a 100% renewable future:** Public investments must phase out fossil fuels, avoid false solutions, and prevent lock-in of carbon-intensive infrastructure.
- **Ensure a democratic energy system for all:** Renewable investments should prioritise benefits for women, Indigenous peoples, marginalised groups, youth, farmers, and local businesses, while promoting decentralised ownership.
- **Put people and nature at the heart of the transition:** Investments must centre civil society and communities in decision-making, uphold Indigenous peoples' right to Free, Prior and Informed Consent, and minimise harmful social, environmental and human rights impacts.

Contradictions in MDBs' energy finance investments

MDBs play an influential role in shaping national energy trajectories in low and middle-income countries. Their portfolios, however, remain skewed toward large-scale, centralised projects that undermine community agency and sustainability. For example, the Asian Development Bank (ADB) continues to back large hydropower in Pakistan, classifying it as renewable despite its destructive impacts on communities and ecosystems.⁵ At the same time, initiatives such as Mission 300, led by the World Bank Group (WBG) and African Development Bank (AfDB),⁶ demonstrate the potential for MDBs to support energy access for millions of people, but only if they shift away from false solutions and prioritise renewable energy models that deliver clear benefits, ownership and decision-making power for beneficiaries. These contradictions are reinforced at the regional level, where the African Union's Common Position on Energy Access and Just Energy Transition reflects the same bias as MDB portfolios by legitimising fossil gas and other large-scale projects, while sidelining approaches that put people at the centre of the transition.⁷

¹ Recourse (2025). Fact sheets: Assessing multilateral development bank progress on the just energy transition. <https://re-course.org/newsupdates/fact-sheets-multilateral-development-bank-progress-on-the-just-energy-transition/>

² Recourse (2025). Banking on Renewables briefings: Multilateral development banks must invest in renewable energy for women and youth. <https://re-course.org/newsupdates/renewable-energy-for-women-and-youth/>

³ Special thanks to the organisations that contributed via online workshops: Climate Clock DRC; Alliance for Empowering Rural Communities; Committee for Peace and Development Advocacy (COPDA, Inc.); International Accountability Project; We, The World Botswana; Southern Africa Region Climate Action Network; African Youth Alliance for Sustainability; Greenhut.

⁴ Recourse (2024). Banking on Renewables criteria report. <https://re-course.org/banking-on-renewables/>

⁵ NGO Forum on ADB. (2022, September 30). ADB continues to bring damage to communities and ecosystems. <https://www.forum-adb.org/post/adb-continues-to-bring-damage-to-communities-and-ecosystems>

⁶ World Bank Group (2025). Mission 300: Vision for impact <https://mission300africa.org/energysummit/wp-content/uploads/2024/12/mission300.pdf>

⁷ African Energy Council (2022): African Union puts forward common position with regards energy access and just transition for the African continent. <https://africanenergycouncil.org/african-union-puts-forward-common-position-with-regards-energy-access-and-just-transition-for-the-african-continent>

What are false solutions?

False solutions are any technologies or energy projects that are being presented as solutions to the climate crisis but don't solve the problem at all. They do not meet environmental and social standards, lack meaningful consultation with affected communities, including women, youth and Indigenous groups, and undermine human rights and land rights.⁸ These projects include nuclear energy, 'blue' and 'green' hydrogen for export and large-hydropower, which are often classified as 'clean energy' despite their significant socio-environmental consequences. For instance, as several other African countries move towards nuclear power, South Africa, the only African country currently operating a nuclear power plant, offers a cautionary example. A 2022 report by the International Atomic Energy Agency highlighted 14 safety issues at South Africa's Koeberg nuclear power plant, many of which remain unresolved.⁹



Counting false solutions as 'clean energy': a barrier to just transition

Assessments of MDB energy finance show that support for renewable energy remains insufficient in both scale and ambition. Our research found that false solutions featured in over a quarter of MDB energy investments (\$1.53bn) between 2022 and 2024, and overall accounted for roughly one-fifth of total spend.¹⁰ These included large hydropower, biofuels and hydrogen, which MDBs continue to present as 'renewable' despite their destructive impacts on communities and ecosystems. This reliance on false solutions dilutes MDB claims of Paris alignment and slows the scale-up of energy models that genuinely deliver ownership and benefits for communities.

A comparison of MDB portfolios shows differences in scale but a consistent reliance on false solutions. The AfDB allocated the largest share — more than a third of its 2024 energy portfolio (36.7%, around \$242m) — compared with just 17.7% in 2022.¹¹ The ADB devoted a smaller share overall but recorded the steepest rise, from only 1.1% in 2022 to 12.1% (\$1.01bn) in 2024.¹² For the World Bank, false solutions represented one-fifth of energy finance between 2022 and 2024, illustrating how MDBs collectively continue to undermine their renewable energy claims.¹³

⁸ Recourse (2024): *Banking on Renewables criteria report*. <https://re-course.org/banking-on-renewables/>

⁹ Oksana Pokalchuk & Peter Becker (2025). *Red flags over nuclear growth in Africa*. <https://www.businesslive.co.za/bd/opinion/2025-03-13-oksana-pokalchuk-and-peter-becker-red-flags-over-nuclear-growth-in-africa/>

¹⁰ Recourse (2025). *Fact sheets: Assessing multilateral development bank progress on the just energy transition*. <https://re-course.org/newsupdates/fact-sheets-multilateral-development-bank-progress-on-the-just-energy-transition/>

¹¹ Recourse dataset. (2025). *Banking on Renewables fact sheet dataset: African Development Bank*. <https://docs.google.com/spreadsheets/d/1w-oUrPkZA7dtp9bsvtYkrV3MoNQ7Hchih4l-Txo-joA/edit>

¹² *ibid.*

¹³ Recourse. (2025). *Fact sheet: Assessing the World Bank's progress on just energy transition*. <https://re-course.org/publications/fact-sheet-assessing-the-world-banks-progress-on-just-energy-transition/>

Rather than prioritising renewable energy systems that deliver social and community benefits at different scales — from decentralised solar mini-grids to medium-scale wind and hybrid systems, to larger grid-connected projects with strong safeguards — MDB portfolios continue to tilt heavily toward false solutions. This undermines energy access goals and erodes trust in MDB commitments to just transitions. Most MDBs have published climate action strategies: the World Bank’s Climate Change Action Plan (2021–2025), the ADB’s Climate Change Action Plan (2021–2030), and the AfDB’s Climate Change and Green Growth Strategic Framework (2021–2030) with its Action Plan (2021–2025). Each includes strong language on inclusivity, resilience, and low-carbon transitions. Yet none provides binding mechanisms to prevent loopholes or guarantee participation, gender responsiveness, or benefit-sharing. Without enforceable safeguards, these plans remain aspirational, leaving MDBs free to continue financing false solutions.

A significant share of MDB energy finance is also channelled through financial intermediaries (FIs) such as commercial banks and private equity funds. These channels are typically opaque, making it difficult to trace end-use or ensure compliance with safeguards. Because of fungibility, even when intermediaries are labelled as ‘financing renewables’, they may simultaneously support fossil fuel developers. Without strict ring-fencing and disclosure, MDB renewable energy finance through intermediaries risks being captured by the same fossil fuel actors MDBs claim to be moving away from.^{14, 15}

MDB policy loopholes enabling false solutions

MDB policy frameworks increasingly allow space for contested technologies. In June 2025, the World Bank lifted its longstanding moratorium on nuclear energy, a shift that raises alarm given the unresolved challenges of nuclear power, including radioactive waste management, extremely high capital costs, catastrophic safety risks, and long-term public health threats. Similarly, MDBs are opening the door to so-called ‘green’ hydrogen projects. These are often presented as innovative, but are criticised for intensive water and land use, limited local benefits, and high upstream emissions.¹⁶

Lessons from projects on the ground

To understand the rhetoric and practice of MDB energy finance investments, it is helpful to look at energy projects across Africa and Asia. Not all of these are MDB-funded, but they highlight the kinds of pathways MDBs are increasingly opening the door to — such as nuclear and other false solutions, as well as the alternatives they could prioritise. These examples raise red flags about harmful technologies that deepen injustice, while also pointing to the kinds of renewable approaches MDBs should champion if they are to play a constructive role in just transitions.

This briefing draws on four case studies from Africa and Asia to illustrate the stakes:

- **South Africa, Koeberg Nuclear:** Extending the life of Africa’s only nuclear plant diverts billions into unsafe, centralised infrastructure while excluding nearby communities from decision-making.
- **Namibia, Hyphen Green Hydrogen Project:** Promoted as a climate breakthrough, this mega-export venture risks biodiversity, water security, and Indigenous rights in one of the world’s driest regions.
- **Pakistan, Large Hydropower:** Mega-dams, presented as clean energy, have displaced communities, created debt burdens, and locked the country into environmentally and socially harmful models.
- **Kenya, Distributed Solar:** In contrast, small-scale, community-owned solar projects show the transformative potential of decentralised renewables, empowering women and youth while expanding affordable energy access.

Together, these examples show how MDB funded projects and their future energy investments into false solutions can either entrench exclusionary, extractive energy systems or foster inclusive, just transitions. They look at how issues around consultation, gender equity, debt, jobs, and accountability play out in real life, while highlighting practical sustainable renewables MDBs should be prioritising.

¹⁴ Recourse. (2020). *Paris-aligned? The International Finance Corporation’s financial intermediary investments, fossil fuels and the climate crisis*. <https://re-course.org/publications/paris-aligned-the-international-finance-corporations-financial-intermediary-investments-fossil-fuels-and-the-climate-crisis/>

¹⁵ Recourse. (2023). *Porous Paris alignment methodology won’t stop IFC finance leaking to coal, new report says*. <https://re-course.org/newsupdates/porous-paris-alignment-methodology-wont-stop-ifc-finance-leaking-to-coal-new-report-says/>

¹⁶ International Energy Agency. (2021). *Global Hydrogen Review 2021*. OECD/IEA. <https://www.iea.org/reports/global-hydrogen-review-2021>

The empty promises of nuclear energy in South Africa

By Power Shift Africa

Across Africa, nuclear and 'green' hydrogen energy projects are being sold as solutions to energy poverty and climate change, but behind these projects lies a repetition of old patterns of exclusion, extraction and exploitation.

The Koeberg Nuclear Power Station in South Africa is one such example. Although not MDB-financed, Koeberg offers an important lesson: nuclear energy should not be treated by MDBs as a viable pathway for climate or development finance, whether through extending the lifespan of ageing reactors or considering new nuclear projects. As the World Bank re-opens the door to nuclear power, Koeberg is a stark reminder of the safety, cost, and justice risks MDBs would take on. MDBs should instead prioritise investments that align with just transition principles and deliver genuine benefits for communities, particularly women, youth, and the most vulnerable.

Africa's only operational nuclear plant, Koeberg, sits on the windswept Atlantic coastline, 35km north of Cape Town. In mid-2024, South Africa's National Nuclear Regulator approved a 20-year extension for Unit 1 of this station, estimated to cost more than R21bn (approximately \$1.12m).¹⁷ The extension was approved despite objections from residents, civil society groups and international experts. The project is criticised for limited public participation and incomplete independent safety guarantees. Experts raise alarms about the safety of the plant and its faulty monitoring systems. Additionally, there is no sustainable waste disposal plan.

Safety, secrecy and sidelining the public

Despite its location in a densely populated area, Koeberg continues to operate with ageing infrastructure, which raises safety concerns. Residents fear nuclear incidents because components aren't replaced regularly, buildings show signs of ageing, and there are shortages of technical staff. Emergency evacuation plans remain outdated and unworkable, especially in low-income neighbourhoods like Atlantis and Joe Slovo Park, which fall within Koeberg's 16km exclusion zone.

Residents say they have little to no access to nuclear safety information, let alone in languages they understand. Local women's groups and civic organisations from Atlantis, Melkbosstrand and surrounding communities report being systematically excluded from meaningful public consultations and denied access to key documents concerning Koeberg's life extension.

An Atlantis community organiser formulates it as follows: "If something goes wrong, we'll be the first to suffer, but we're always the last to be consulted."

Women and youth are disproportionately affected by health and safety concerns. Women often bear the burden of caring for children and the sick during emergencies, and face heightened reproductive health risks from radiation exposure. Youth are more vulnerable to long-term health and livelihood disruptions.

¹⁷ The estimated cost dates back to 2010 (when the Rand was R7.50 to US\$1). Eskom has obscured the actual cost, but realistic estimates are closer to R60bn, which aligns with the pattern of being approximately three times over budget in other large-scale projects run by Eskom, such as Medupi.



Koeberg nuclear power plant, Cape Town, South Africa.
Photo by Paul Scott. CC BY-SA 2.0

The nuclear waste dilemma

Safety concerns extend to the treatment of radioactive waste from the station. Koeberg generates high-level radioactive waste, which is currently stored on-site. South Africa still lacks a national long-term disposal plan for this dangerous material, posing a serious and unresolved risk for both present and future generations.

Some of Koeberg's lower-level radioactive waste is trucked to the Vaalputs disposal site in the remote Northern Cape, a facility long opposed by Nama and San communities who say they were not adequately consulted or compensated. Leaders in Namaqualand and Springbok continue to resist the site's expansion, raising broader questions about consent, equity and environmental justice. It also appears inevitable that the high-level waste from Koeberg will be disposed of, or indefinitely stored, at Vaalputs, where communities do not have an option to refuse the dumping of waste in their community.

Nuclear is an ill-suited solution

Koeberg reflects a troubling pattern about nuclear energy in South Africa — one where massive public funds are diverted to benefit private interests under the pretext of national progress. The life-extension project follows a legacy of corruption in the sector, most notably the attempted R1tn nuclear deal with Russian state corporation Rosatom, which was struck down in court after public outcry.¹⁸

Despite the urgent need to invest in energy access, local infrastructure and community-owned renewables, the state continues to prioritise expensive, centralised projects that enrich foreign contractors and politically connected elites, while excluding the very communities most affected by these decisions.

¹⁸ West Coast Environmental Protection Association & Another v Minister of Mineral Resources & Others, ZAWCHC 50 (2017). South African Legal Information Institute. <https://www.saflii.org/za/cases/ZAWCHC/2017/50.pdf>



Undermining a just transition: MDBs and the myth of renewable large hydropower in Pakistan

By Indus Consortium

Indus Basin, River, and Delta: the lifeline of Pakistan

The Indus Basin covers 47% of Pakistan, and together with the Indus River and Delta, forms Pakistan's lifeline. The Basin collects water from rainfall, snow and glaciers, channelling it into the Indus River and its tributaries. The river, over 3,000km long, flows from Tibet through India into Pakistan, providing water for crops like wheat, rice, cotton, and sugarcane and supporting 90% of the country's population.^{19,20} Its mouth forms the world's fifth largest delta, a wetland that supports 200,000 people through fishing, farming and livestock grazing.^{21,22}

Water has hence played a vital role in the country's history, and Pakistan's dependence on hydropower traces back to the 1960 Indus Waters Treaty (IWT). The treaty, brokered by the World Bank, allocated the rivers between India and Pakistan. To offset lost irrigation from the eastern rivers, the Bank financed major canal and dam projects that, however, triggered interprovincial disputes and accelerated the ecological decline of the delta.²³

Decades later, the treaty itself has become contested: In April 2025, India suspended the IWT after tensions in Kashmir, raising alarm over Pakistan's water security, agriculture, and hydropower capacity. This episode underscores how fragile water-sharing agreements can come under geopolitical strain, with direct consequences for local communities, especially women and youth, and energy systems.

¹⁹ *Indus Basin* (2025). In Wikipedia. https://en.wikipedia.org/wiki/Indus_Basin

²⁰ Butt, N. (2024, July 19). Pakistan is the 5th most populous country with a population of 241.49m. *Business Recorder*. <https://www.brecorder.com/news/40313328>

²¹ *Mangroves*. (n.d.). Forest Department, Government of Sindh. Retrieved September 8, 2025, from <https://sindhforests.gov.pk/page-mangroves>

²² *Indus Delta*. (2011). Ramsar Site Information Service. <https://rsis.ramsar.org/ris/1284>

²³ Creyke, T.; Lieftinck, P.; Sadove, R. A. (1968). *Water and power resources of West Pakistan*, 1, 334. <http://documents.worldbank.org/curated/en/182331468758759382>



Indus river in Pakistan
Photo by Tariq Sulemani. CC BY-SA 4.0

How the World Bank has shaped hydropower development in Pakistan

Ever since the IWT, the World Bank's involvement has continued to shape Pakistan's energy sector. Through technical assistance (TA), policy influence and financial support, the Bank has kept large hydropower as part of Pakistan's energy mix (currently 24.4%).²⁴ For example, in 2021, the WB approved a \$400m development policy loan for the Pakistan Program for Affordable and Clean Energy (PACE), a programme that aims to reduce power generation costs and 'green' the energy mix. The conditions required Pakistan to develop a least-cost generation plan with 63% renewable energy (RE) in the mix by 2030.

However, the WB's Country Partnership Framework (CPF) for Pakistan classifies hydropower under 'renewables', unlike Pakistan's own policies. The proposed CPF 2026–2035 states that renewable energy, including hydropower, will be supported by the WB, IFC, and MIGA.²⁵ Specifically, MIGA will support both existing and new private investments in hydropower and transmission & distribution. Yet Pakistan's Alternative and Renewable Energy (ARE) Policy 2019²⁶ explicitly defines renewable energy as solar, wind, bagasse and other non-hydro technologies, and expressly excludes hydropower (both large and small) from the definition of renewables. As large hydropower development in Pakistan poses a barrier to achieving a truly renewable energy path and carries serious ecological and social risks, this approach does not align with a just energy transition or a climate-conscious strategy.

The human cost of large hydropower: lost livelihoods and dignity

A development solution which leaves people in misery is a false solution. In Pakistan, large hydropower has left vast populations in desolation. The Indus Basin, River, and Delta are interdependent and vulnerable: changes upstream directly impact ecosystems and livelihoods downstream. Reduced freshwater flow due to large-scale upstream hydro projects has imposed far-reaching damage to the Indus Delta. MDBs have played a role in this pattern by financing major hydro schemes such as Tarbela Dam (supported repeatedly by the World Bank since the 1960s), the planned Diamer-Bhasha Dam (with World Bank and ADB involvement in technical and preparatory support), and proposals such as Kalabagh Dam.²⁷ These projects illustrate how MDB financing for large hydropower has reinforced ecological harm and social displacement, rather than advancing a just energy transition.

"The coastal areas around the River Indus, especially the communities on the right bank, have been more severely affected. Water from the River Indus used to reach this area, and there were approximately 100 wetlands here that remained filled with freshwater. Due to climate change and the construction of dams, the flow of water has now reduced by up to 75%," says Iqbal Haider, a local community activist from Badin.

Reduced water flow directly impacts livelihoods in a region where agriculture, livestock grazing and fishing are the major sources of income.

"People here used to farm around the river, but that's decreased. Fodder for livestock is scarce because the forests on both sides of the river are gone," explains Gulaab Shah, a resident of Keti Bander.

In addition, the mangrove forests, a fertile breeding ground for fish and shrimps, have declined. This impacts livelihoods and increases the risk of floods and tsunamis in the delta. Women, the backbone of these families, are most deeply impacted.

"Fisherwomen were involved in everything from catching fish and shrimp to their cleaning, sorting, and packaging. Women also used to weave fishing nets and collect wood from the forests. Women were empowered — they used to make their own clothes, buy their own gold. But due to the decline in fish stock, they are now forced to work as labourers in homes and industries, where the income is lower, and whatever little they earn ends up going into household expenses," says Fatima Majeed, a local community woman from Ibrahim Hyderi.

²⁴ Yousafzai, F. (2025, June 10). Pakistan's renewable energy capacity nearly doubles amid shift toward greener power mix. *The Nation*. <https://www.nation.com.pk/10-Jun-2025/pakistan-s-renewable-energy-capacity-nearly-doubles-amid-shift-toward-greener-power-mix>

²⁵ Country Partnership Framework. (2025). World Bank Group. <https://documents1.worldbank.org/curated/en/099121324161568318/pdf/BOSIB-b41eaf79-84ac-40db-ba1c-85f902892917.pdf>

²⁶ Country Partnership Framework. (2025). World Bank Group. <https://documents1.worldbank.org/curated/en/099121324161568318/pdf/BOSIB-b41eaf79-84ac-40db-ba1c-85f902892917.pdf>

²⁷ World Bank. (2014). *Pakistan – Tarbela 4th Extension Hydropower Project*. World Bank Project Appraisal Document. <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/263221468288617518/pakistan-tarbela-4th-extension-hydropower-project>

Environmental decline leads to forced migration

Reduced freshwater flow has led to seawater intruding into the villages of the delta: 88.3% (11,540.4km²) of the surface is affected.²⁸ This has forced nearly 1.2 million people to migrate in the last few decades.²⁹

"Many people in Rehri Goth have migrated from the delta, including youth. They had to abandon their education. Here, they didn't get jobs. Mental health issues have increased, and many young people have fallen into drug addiction," explains Fatima Majeed from the community of Ibrahim Hyderi.

Besides migration, promises of land compensation and employment were not met.

"People were given low compensation for their land taken. There is no skill development in the area, especially for youth and women. No jobs given to locals," added Umer Javed.

MDBs' continued support for dam construction poses a serious threat to already distressed communities.

Economic costs, missed opportunities in solar energy

Large hydropower financing risks undermining Pakistan's potential for Variable Renewable Energy (VRE) — technologies such as solar and wind that can be integrated flexibly into the grid.³⁰ At the same time, large hydropower projects backed by MDBs also carry significant economic costs, raising questions about whether such investments truly serve a just and sustainable energy transition. Government-owned hydropower plants are set to receive \$1.58bn in capacity payments — an unjust financial burden that consumers are bearing.³¹ Pakistan's circular debt in the energy sector already exceeds \$9.8bn, and continuing large-scale hydro investments will deepen the economic crisis and burden the already distressed consumers.³² In addition, an estimated \$2bn loss per year to the delta has been documented in a report by the WB.³³

Meanwhile, solar energy is emerging as a credible alternative to large hydropower in Pakistan. In 2024, the country saw an estimated 16GW of solar panel imports and 4.9GW of net-metered connections installed.³⁴ This rapid, community-driven shift is already reducing reliance on the national grid and large hydropower. The trend is reinforced by economics: The levelised cost of electricity (LCOE) from utility-scale solar in Asia fell to around \$0.04 per kWh in 2021, compared with \$0.12–0.18 per kWh for new large hydropower projects.³⁵ For households, rooftop and net-metered solar systems are helping to cut electricity bills and buffer families from the spiralling costs of fossil fuel imports. Civil society organisations in Pakistan also report that decentralised solar has improved access for women-led households, particularly in rural areas, by reducing time spent collecting biomass or enduring load-shedding blackouts.^{36,37}

In this situation, MDBs' support for large hydro projects risks becoming obsolete. The WB itself notes that a fraction (0.071%) of Pakistan's land could meet total power needs through solar.³⁸ However, current policy contradictions on hydro classification make real RE solutions like solar and wind harder to achieve.

Political costs of hydro power fuelling resource sharing conflicts between communities

Resolving the debates around hydropower and moving swiftly towards promoting solar and wind energy isn't simple. The debate over hydropower has always remained a bone of contention among the provinces, and the MDBs' hydro

²⁸ Solangi, G. S., Siyal, A. A., & Siyal, P. (2023). *Indication of subsurface seawater intrusion into the Indus delta, Sindh, Pakistan*. Mehran University Research Journal of Engineering and Technology, 42(1), 9. <https://doi.org/10.22581/muet1982.2301.02>

²⁹ Siddiqui, Z. (2025, June). *Once a Thriving Ecosystem, Pakistan's Largest River Delta Is in Peril*. *New Lines Magazine*. <https://newlinesmag.com/essays/once-a-thriving-ecosystem-pakistans-largest-river-delta-is-in-peril/>

³⁰ International Renewable Energy Agency. (2022). *Renewable power generation costs in 2021*. <https://www.irena.org/Publications/2022/Jul/Renewable-Power-Generation-Costs-in-2021>

³¹ Power sector capacity payments surge to Rs2.14trn for FY25. (2024, October 1). *Profit*. <https://profit.pakistantoday.com.pk/2024/10/01/power-sector-capacity-payments-surge-to-rs2-14trn-for-fy25>

³² Anwar, A. (2025, July 11). *Circular debt of Pakistan: Understanding the crisis*. *The Express Tribune*. <https://tribune.com.pk/story/2555372/circular-debt-of-pakistan-understanding-the-crisis>

³³ Young, W., Anwar, A., Bhatti, T., Borgomeo, E., Davies, S. W., Garthwaite III, W. R., Gilmont, E. M., Leb, C., Lytton, L., Makin, I., & Saeed, B. A. (2019). *Pakistan: Getting More from Water*. World Bank Group. <http://documents.worldbank.org/curated/en/251191548275645649>

³⁴ Pakistan Bureau of Statistics. (2024). *Pakistan Energy Imports Data 2024*. Government of Pakistan.

³⁵ International Renewable Energy Agency. (2022). *Renewable power generation costs in 2021*. <https://www.irena.org/Publications/2022/Jul/Renewable-Power-Generation-Costs-in-2021>

³⁶ Alliance for Rural Electrification. (2023). *Women and the solar energy transition in South Asia*. <https://www.ruralelec.org>

³⁷ Solar surge reshapes Pakistan's power sector: report. (2025, May 11). *The News International*. <https://www.thenews.com.pk/print/1310356-solar-surge-reshapes-pakistan-s-power-sector-report>

³⁸ *Expanding Renewable Energy in Pakistan's Electricity Mix*. (2020). World Bank Group. <https://www.worldbank.org/en/news/feature/2020/11/09/a-renewable-energy-future-for-pakistans-power-system>

financing has only deepened this conflict. The core conflict revolves around resource sharing between the upper and lower riparian provinces. Despite the Water Apportionment Accord of 1991, concerns persist about the upstream dams reducing the flow of the delta.³⁹

Recent disputes over Net Hydel Profit payments⁴⁰ and hydropower asset control have further intensified the resource-sharing conflicts among the provinces and the federation).⁴¹

Recommendations for MDBs to prioritise people over profit in development projects:

1. MDBs should stop considering high-risk investments like large hydropower as part of renewable energy, especially when such projects are causing harm to communities. All forms of support for large hydropower projects should be halted.
2. The WB should prioritise and promote alternative renewable energy sources such as wind and solar in their Country Partnership Frameworks (CPF) which can bring clean and cheap electricity to remote and underserved areas.
3. MDBs should conduct comprehensive assessments of past projects, programmes and technical assistance. They should provide remedies to communities harmed by hydro projects. A special grant-based programme should be initiated to restore ecosystems, make a resettlement plan for displaced populations, and create job opportunities.
4. MDBs should ensure that all new programmes fully consider environmental and social factors as well as the political, social and cultural contexts. They must remain sensitive to existing conflicts between upper and lower riparian communities and provinces, avoiding interventions that could exacerbate these tensions.

The WB should conduct a comprehensive, cumulative study on the losses and damages suffered by the communities of the Indus Delta. This should include an assessment of mangrove degradation, loss of livelihoods, the extent of land degradation due to sea intrusion, the number of people displaced, and the damage caused to wetlands as a result of upstream dam construction.

³⁹ Anwar, A. (2016, July 28). Pakistan's provincial water disputes: a way forward. *Dawn*. <https://www.dawn.com/news/1273760>

⁴⁰ It is a compensation paid by the federal government to the province where a hydropower project is located, in return for using that province's natural water resources for electricity generation.

⁴¹ Kiani, K. (2025, July 25). Govt mulls delinking hydel profit from tariff. *Dawn*. <https://www.dawn.com/news/1924851/govt-mulls-delinking-hydel-profit-from-tariff>



Tarbela Dam in Khyber Pakhtunkhwa, Pakistan
Photo by USAID

Who is 'green' hydrogen for? The case of Hyphen Hydrogen Energy in Namibia

By Power Shift Africa

In the arid plains of Namibia's Tsau Iikhaeb National Park, a new frontier of energy development is unfolding, spearheaded by Hyphen Hydrogen Energy, a German-Namibian joint venture. Launched in 2021 and backed by German and European investors, the \$10bn Hyphen Green Hydrogen Project has positioned Namibia as Africa's green hydrogen pioneer. While it's promoted as a climate solution and economic turning point, this project is designed to produce vast quantities of 'green' hydrogen and ammonia for export, principally to Europe.

Although there is no confirmed MDB financing, Hyphen does have public sector support: the Namibian government holds a 24% stake, and the Development Bank of Southern Africa (DBSA) has committed to a Project Preparation Facility to support early-stage engineering, environmental, and socio-economic development work.⁴² As Hyphen advances, its scale and export orientation raise critical questions about whose interests are served and whether 'green' projects can replicate patterns of exclusion under the guise of climate solutions.

The project faces highly speculative market conditions and comes with important financial risks. There is currently no established international hydrogen market, no ships capable of transporting hydrogen at scale, and no publicly disclosed purchase agreements guaranteeing European demand. Production and shipping costs may render Namibian hydrogen or ammonia uncompetitive, a liability that would fall hardest on Namibia and its local communities.

For Namibians or Europeans?

The green hydrogen project in Namibia raises important questions about what constitutes a green project and who benefits from it. With just a 24% national stake and most of the hydrogen destined for export to Europe, Namibians have a lot to lose and little to win. This project should serve as a clear warning against financing large-scale ventures, as MDB support would risk legitimising development models that sacrifice biodiversity, community rights, and long-term sustainability for short-term commercial gain. MDBs should learn from this case and redirect resources toward people-centred renewable energy systems that protect nature, secure local livelihoods, and advance a truly just energy transition. A central lesson is the importance of Free, Prior and Informed Consent (FPIC): large, export-oriented projects like Hyphen risk sidelining affected communities in decision-making processes, creating conflict and undermining legitimacy. By embedding FPIC and meaningful consultation into all stages of project planning and financing, MDBs could avoid reproducing extractive dynamics and instead support energy pathways that strengthen community ownership and social licensing.^{43,44}

Behind the polished narrative lies a more complex reality, where large-scale, export-oriented energy development threatens Indigenous land rights, local livelihoods, and delicate ecosystems, while offering little to no benefit to affected communities. The question arises: Is the project built to benefit local communities, or meet Europe's needs?

A national park for corporate profits

Hyphen's megaproject is set to occupy 3,000–4,000km² within Namibia's Tsau Iikhaeb National Park, also known as Sperrgebiet National Park. It is one of the last intact arid ecosystems on Earth, a vital biodiversity and conservation hotspot and home to many endemic species. Environmentalists and the Namibian Chamber of Environment called the project "a massive gamble" that risks irreversible ecological damage to an already fragile ecosystem.⁴⁵

⁴² Development Bank of Southern Africa. (2025). *DBSA and Hyphen Hydrogen Energy partner to fund Sub-Saharan Africa's largest green hydrogen project (Project Preparation Facility)*. <https://www.dbsa.org/press-releases/development-bank-southern-africa-and-hyphen-hydrogen-energy-partner-fund-sub-saharan>

⁴³ United Nations. (2007). *United Nations Declaration on the Rights of Indigenous Peoples (UNDRIP)*. UN General Assembly. <https://www.un.org/development/desa/indigenouspeoples/declaration-on-the-rights-of-indigenous-peoples.html>

⁴⁴ African Commission on Human and Peoples' Rights. (2012). *Resolution 224 on a Human Rights-Based Approach to Natural Resource Governance*. <https://www.achpr.org/sessions/resolutions?id=274>

⁴⁵ How Germany is fueling Namibia's green hydrogen revolution. *FuelCellsWorks*. April 9, 2025. <https://fuelcellworks.com/2025/04/09/green-hydrogen/how-germany-is-fueling-namibia-s-green-hydrogen-revolution>

While environmental impact assessments are ongoing, early findings point to a troubling conflict between conservation and commercial ambition, raising urgent questions about whether a 'green hydrogen' project can truly be considered green if it threatens the ecosystems it claims to protect.

Indigenous land and exclusionary development

In addition to being a biodiversity hotspot, this remote desert landscape is also home to the Nama and other Indigenous communities, whose ancestral lands, indigenous medicines, cultural heritage, and spiritual and traditional ties to the land are at stake. Yet, the development has moved forward with minimal consultation, high levels of secrecy, and widespread criticism over non-transparent contract negotiations. Many Nama leaders say they were only informed after key decisions had already been made, learning about the project through the media rather than meaningful engagement.

This project echoes Namibia's painful history of colonial land dispossession and forced removals. While Hyphen promises thousands of jobs, local communities fear a repeat of familiar patterns, resource extraction that benefits foreign investors while leaving Indigenous people displaced, undercompensated, and marginalised.

Water scarcity and green extraction

Namibia is one of the driest countries in Africa, facing chronic water scarcity, with many rural communities still lacking reliable access to clean water. Despite this, Hyphen plans to use large quantities of water for electrolysis, relying on the construction of energy-intensive desalination plants along the Atlantic coast.

Desalination poses risks to fragile marine ecosystems through brine discharge and coastal disruption. What is more, prioritising water for export-oriented 'green hydrogen' production over basic human needs highlights the project's deeper inequities.



Tsaus mountains in Namibia Sperrgebiet
Photo by Olga Ernst & Hp.Baumeler. CC BY-SA 4.0

Centring women and youth in renewable energy: Kenya Off-grid Solar Access Project (KOSAP)

By Youth For Sustainable Energy (Y4SE)

KOSAP: background and project goals

Almost 13 million Kenyans don't have access to electricity. Even more, 38 million people lack access to clean cooking.⁴⁶ The access deficit in Kenya is huge, especially in rural areas, and the Kenya Off-grid Solar Access Project (KOSAP) is one of many initiatives the government and its partners have taken up to attain its targets on universal access to clean energy by 2030.

Financed by a WBG loan of \$150m approved in 2017,⁴⁷ KOSAP seeks to provide approximately 1.3 million people and 567 community facilities with new or improved electricity services. In addition, the project aims to facilitate the adoption of 60,000 energy-efficient cooking solutions by September 2026.

The project targets 14 underserved counties,⁴⁸ which are mostly remote and located on arid or semi-arid lands. Population density in the areas is low, infrastructure is poor, and the terrain is difficult. The areas require a decentralised energy system, and one of the

projects' core principles is an adaptable approach: it acknowledges that off-grid energy access needs tailored solutions that reflect the unique needs and challenges of different communities.

The project is structured into four components:

1. providing stand-alone solar systems and clean cooking solutions for households;
2. providing stand-alone solar systems and solar water pumps for community facilities;
3. capacity building;
4. building mini-grids for community facilities, enterprises, and households (to be completed in 2026).

The project uses several different financing models to reach its goals. Enterprises received grants to establish or expand operations. Solar service providers had two financing options: Results-based financing (RBF) for expansion costs and a debt facility for inventory and consumer financing. Clean cooking solution providers received three types of financial support: ex-ante RBF for market development and inventory, and ex-post incentives based on verified sales. This support helps companies expand into hard-to-reach areas.

Economic and business impact: more jobs and opportunities, especially for women

KOSAP has demonstrated significant job creation in management, supervisory, technical and sales roles. Through its capacity-building component, around 150 county energy and technical officers have received career progression training, broadening their capacity to deliver the project and also contributing to their personal growth.

The jobs created have had a particularly positive impact on youth and women. Most of the companies involved in the project have prioritised local employment, with more than 50% of their workforce being female. For example, Nyalore Impact Ltd has employed 70% women, mostly young people. Companies have also focused on skills development, thus building local capacity for repair and maintenance services and sales.

Additionally, solar systems have enabled new business opportunities, with beneficiaries reporting that their homes have since become business hubs serving the community. Households with solar home systems are now able to charge mobile phones for their neighbours at a fee.

⁴⁶ *Tracking SDG 7 Report*, The Energy Progress Report, 2025. IEA, IRENA, UN, World Bank, and WHO. <https://www.seforall.org/system/files/2024-06/Tracking%20SDG7%20-%20final%20report.pdf>

⁴⁷ Project Appraisal Document, 2017. Report No: PAD2008. World Bank Group. <http://documents.worldbank.org/curated/en/212451501293669530>

⁴⁸ 14 underserved KOSAP Counties: West Pokot, Turkana, Marsabit, Samburu, Isiolo, Mandera, Wajir, Garissa, Tana River, Lamu, Kilifi, Kwale, Taita Taveta, and Narok.

Solar systems have also helped existing businesses work more effectively. “I can now run my small grocery business until late,” Karema Kenga from Kiwapa in Kilifi County recounts with excitement. Before solar, Karema Kenga would close her business at around 6 p.m., but this changed after acquiring her solar home system. Now she runs the business up to 9 p.m. or 10 p.m. and has an increased income.

Socio-economic impact: access to education through electricity

The project has enabled energy service providers to create or expand their distribution channels in the 14 counties, increasing the availability of clean energy solutions. As of June 2025, the project had connected 800,000 people to electricity.⁴⁹ Also, households can install solar solutions more flexibly thanks to the payment plans and waivers.

In Kilifi, a village once engulfed in total darkness, solar lights now shine as beacons of transformation — bringing not just light, but a renewed sense of security and freedom. The installation of solar systems has improved safety, particularly for women. One beneficiary shared that she can now leave her home unattended with peace of mind, thanks to her solar lamp that stays on throughout the night.

Solar energy has increased access to information and provides entertainment. Some households can now sit together and watch their beloved TV shows, listen to music, and importantly, stay informed through news channels and educational programmes. The children can now study at night in a well-lit space without worrying about the candle or kerosene lamp going out.

The transition to clean energy solutions for both cooking and lighting has increased household savings by reducing energy costs and saving time required for household tasks. The saved time can now be spent on income-generating activities. Ms Esther Muriuki from Malindi sub-county confirmed that she has greatly benefited from the electric pressure cooker she got through the project. With the cooker, she is able to work until late and not worry about dinner plans, as it cooks faster with little effort, unlike the charcoal stove she was using previously.

Environmental impact: sustainable energy, improved health

KOSAP contributes significantly to environmental conservation by harnessing solar energy to provide sustainable and cost-effective solutions. The project contributes to a substantial reduction in carbon emissions. When this is combined with the transition to more efficient cooking methods, the cumulative environmental impact becomes even more significant. The transition to cleaner cooking solutions reduces overreliance on trees for fuel.

Furthermore, indoor air quality has improved in many households since the elimination of kerosene lamps, candles and inefficient stoves, with direct health benefits.

Environmental and community safeguarding

The project meets the safeguarding requirements, ensuring that Indigenous people, vulnerable people and the environment are protected. It incorporates Environmental and Social Safeguards Framework requirements, which means that there has to be meaningful participation, decent compensation, and inclusion of various stakeholders throughout the project processes.

The project, including the mini-grid sites, has undergone an Environmental Impact Assessment. The WB has assessed that the environmental impacts can be managed with a minimal budget.⁵⁰ For example, the clean cooking solutions are required to meet the minimum efficiency standards, their batteries should have a minimum of a 5-year warranty, and they should be disposed of in standard landfills. Communities were consulted during project design, targeted subsidies were introduced to reach low-income households, and provisions were made to ensure inclusion of women and marginalised groups. This shows that MDBs can apply their own safeguard systems in ways that protect rights and expand access. The broader lesson is that MDBs need to consistently uphold these standards — ensuring FPIC, compensation, and real participation across all projects — rather than treating safeguards as tick-box exercises.

In addition, the project is targeting counties where women are disproportionately more affected. Kenya ensured inclusivity through its Gender Policy, ensuring deliberate inclusion of women throughout the project.⁵¹

⁴⁹ KOSAP Quarterly Newsletter, June 2025

⁵⁰ KOSAP Project Appraisal Document, Report No: PAD2008, 2017

⁵¹ Gender Policy, Ministry of Energy and Petroleum, Kenya, 2019

Gaps and conclusions: what still needs to be addressed?

KOSAP demonstrates a successful model for inclusive energy access financed by a multilateral development bank and offers valuable lessons that can inform MDB policy reform to accelerate inclusive energy access across Africa. Its approach demonstrates the importance of inclusive design that prioritises underserved regions and leverages the private sector's participation.

Embedding community-centred approaches and ensuring flexibility in delivery models, KOSAP has shown how tailored solutions can succeed where one-size-fits-all models fail. Finally, it evidences the importance of youth and women's inclusion, not only as beneficiaries but also as leaders in driving the transition.

During the project, however, several effectiveness and sustainability gaps were identified. Firstly, the three-month ex-ante support period was observed to be too short, especially given the vastness and challenging terrain of most counties. At least six months should be given to ensure a meaningful market establishment.

In addition, the engagement period of service providers should be lengthened to allow sufficient time to build sustainable businesses and trust within communities. Robust operation and maintenance services should also be taken into account to build sustainable after-sales services and ensure long-term adoption of clean energy technologies. Lastly, while youth engagement is emerging through initiatives funded by the WB, such as the Nyota Project, KOSAP could develop more structured, youth-centric interventions.

Overall, the KOSAP model represents a successful framework for inclusive energy access that balances private sector engagement, consumer affordability, and comprehensive safeguarding. With refinements on the identified gaps, this model offers significant potential for replication across similar contexts globally.



Off-grid solar power system
Photo by KOSAP

Conclusion

Taken together, the evidence shows that MDBs are still directing most of their finance into large-scale, centralised projects that reproduce exclusion, debt, and ecological harm, while labelling them as climate-aligned. Safeguards, consultation, and gender responsiveness are inconsistently applied, and the promised benefits of jobs and livelihoods rarely materialise. At the same time, the persistence of false solutions outside MDB portfolios — such as nuclear expansion in South Africa and hydrogen exports in Namibia — shows the destructive impacts that communities face when harmful pathways are pursued. By contrast, positive experiences like Kenya's KOSAP demonstrate that it is possible to support renewable energy pathways that are inclusive, gender-responsive, and fiscally responsible.

The clear lesson is that MDBs must close loopholes, strengthen accountability, and redirect finance towards energy systems that uphold rights, protect nature, and deliver real benefits to communities.

Recommendations to realign MDB energy finance with a just and inclusive transition:

- 1. Increase the priority of funding decentralised and mixed small, medium, and large-scale renewable energy that delivers community ownership and benefits.** MDBs must reorient public finance toward renewable energy systems that directly serve people — from solar mini-grids and clean cooking solutions to medium-scale wind and solar projects, and larger renewable projects where strong safeguards and benefit-sharing mechanisms are in place. The priority should be on models that ensure community ownership, fair participation, and tangible social and economic benefits, especially for women, youth, and marginalised groups.
- 2. Reject false solutions.** MDBs should categorically exclude all false solutions in their renewable energy investments, including CCUS, blue hydrogen, green hydrogen for export, nuclear power, large hydropower, waste-to-energy and other unsustainable technologies. These pathways are costly, high-risk, and incompatible with inclusive energy access and just transition goals.
- 3. Reform climate finance frameworks.** MDBs must revise their energy taxonomies and climate and energy policy, strategies, action plans and implementation guidelines to fully align with the Paris Agreements 1.5 degrees Celsius goal, support the SDGs and reflect social and environmental safeguards. Only technologies that meet participatory, gender-responsive, and sustainable development standards should qualify for climate finance.
- 4. Ensure community participation and Free, Prior, and Informed Consent for Indigenous peoples.** FPIC should be a key requirement for Indigenous peoples affected by energy projects supported by MDBs. Communities must be actively engaged throughout the entire project cycle, from initial design to monitoring and evaluation. MDB policies and practices must institutionalise inclusive and participatory planning, which puts local communities at the heart of development, especially women and youth.
- 5. Strengthen safeguards, improve transparency, and ensure remedy for harms.**
 - MDBs should continually strengthen their safeguards to ensure that communities are protected and that projects align with international best practice and human rights standards. Safeguard review processes, such as the ongoing review of IFC and MIGA's Sustainability Framework, are a good opportunity to improve on existing standards.
 - MDBs should strengthen the mandate of grievance mechanisms, preserve their independence and ensure there is remedy when projects harm people and the planet.
 - Key project documents, including assessments of social, environmental, and financial risks, must be publicly available from the early stages of the project cycle. Reporting should feature disaggregated data to clearly reflect who is benefiting.
 - MDBs should strengthen the regulations on pollution, health impacts and labour impacts that come from MDB investments.



Banking on Renewables is a global civil society initiative advocating for public finance institutions to align energy investments with climate goals and just transition principles.

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