Knowledge Production and the Global Energy Transition: A Critical Appraisal of the Influence of International Financial Institutions on African Multilateral Financial Institutions

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Abstract

Knowledge production, albeit not the primary mandate of international financial institutions (IFIs) such as the World Bank, has been instrumental to the influence of these institutions in shaping and framing the narratives and policies that inform global economic as well as domestic policy, especially in the global south. In the context of the global energy transition, reports written by the World Bank or platformed with the World Bank influence the direction of travel for the energy transition discourse. A case in point is seen with the impact of the two World Bank reports published in 2021, which appeared to discredit the reliance on liquified natural gas (LNG) as a transitional bunker fuel for the shipping industry while advocating for ammonia and hydrogen as the most promising zero-carbon bunker fuels for shipping. This raises an important question: How influential are reports and recommendations on energy transition from IFIs on the policy direction of AMFIs? Analysing the policy trends and messaging on LNG as a viable transitional fuel prior to and after the 2021 World Bank reports, this article critically evaluates the extent to which knowledge production by IFIs influences the AMFIs, such as the African Development Bank (AfDB), on its policy direction for energy transition funding in Africa.

1. Introduction

The climate emergency has precipitated the urgent need for a global transition from fossil fuels to greener alternatives. In these crucial discussions, international organisations (IOs) play a pivotal role in guiding nation-states and other stakeholders in deliberations that inform policy formulation and implementation on energy transitions.[1]

International financial institutions (IFIs) such as the World Bank are also important voices in the energy transition discussion.[2] The centrality of IFIs in the energy transition discourse stems from the fact that it requires significant financial investment in renewable energy infrastructure. To put this in context, the International Renewable Energy Agency (IRENA) estimates the investment costs for the transition to a scenario of 91% energy from renewables by 2050 at a staggering USD 35 trillion by 2030.[3] For African countries, which contribute to only 2-3% of global greenhouse (GHG) emissions, the situation is even more grim, with the African

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[1] The IMO policy on the decarbonisation of shipping by 2050 is a case in point. See IMO Revised GHG reduction strategy for global shipping, 07 July 2023 https://www.imo.org/en/MediaCentre/PressBriefings/Pages/Revised-GHG-reduction-strategy-for-global-shipping-adopted-.aspx

[2] The World Bank has devised strategies such as the "Scaling Up to Phase Down" framework to support large-scale interventions in renewable power sector infrastructure projects in low and middle-income countries. See The World Bank, 'Scaling Up to Phase Down: Financing Energy Transitions in the Power Sector' (2023) https://www.worldbank.org/en/topic/energy/publication/scaling-up-to-phase-down

[3] See IRENA https://www.irena.org/News/pressreleases/2023/Mar/Investment-Needs-of-USD-35-trillion-by-2030-for-Successful-Energy-Transition

Development Bank (AfDB) estimating in 2023 that Africa will need $100 billion annually by 2040 to meet its energy transition needs.[4] As such, IFIs lend their voice to this conversation in several ways, including the provision of concessional funding as well as policy guidance, especially for developing countries that the United Nations Conference on Trade and Development (UNCTAD) estimates would require $5.8 trillion annually from 2023 to 2030 to meet the energy transition targets.[5] Considering that some of these countries are already facing precarious financial situations, it is unsurprising that they are struggling to meet these commitments, which translate to an estimated 19% of their GDP.[6]

Often, in the energy transition discourse, the spotlight on IFIs centres on their mandate as lenders, as well as their lending practices and policy recommendations. It is, however, instructive to note that knowledge production by IFIs, albeit not the core focus of their mandate, plays a pivotal role in shaping and framing the narratives and policies that inform global, regional, and domestic policies on energy transition. As the World Bank has progressively expanded its remit from a 'loan bank' to a 'knowledge bank', the influence of reports authored by the World Bank on the direction of policy for the energy transition discussion has increased.[7] Despite the usual caveats included in such reports to the effect that authorship of reports platformed by the World Bank or the IMF does not represent the views of this institution, the weighting they carry goes a long way in influencing policy direction across the world. The influence of the World Bank as an important site of knowledge production is rooted in the historic power and dominance of the Bretton Woods institutions, introduced in the post-World War II (WWII) settlement. The hegemonic sponsors of the post-WWII economic governance order have leveraged their dominance of the system to curate and gatekeep the economic viewpoints and theories that have shaped the global economic order in the last 80 years. The influence of reports and recommendations by these institutions, like those from the World Bank, can thus be seen as extensions of the broader economic and political inequalities of the global world order.[8]

In light of this, this paper critically appraises the impact of knowledge production by the World Bank, specifically reports on the viability of Liquified Natural Gas (LNG) as a viable transitional fuel in the global energy transition. The paper explores the nexus between knowledge produced and platformed by the World Bank and the energy transition discourse in Africa, which has several major LNG-producing countries such as Mozambique and Nigeria. To this end, this paper sets out to answer two central research questions: 1. *Is there a correlation between the World Bank's reporting on LNG's suitability as a transitional fuel and the changing narrative and sentiments on the viable transition fuel? 2. What is the impact of the changing narrative and sentiments on LNG and the support of funding of LNG projects in Africa?*

The central argument of this paper is that the science of LNG's potential harm due to methane leakage contained in the World Bank reports in 2021, although controversial and not

[4] See Daniel Onyango, 'Africa's Energy Transition to Cost $100 Billion Annually, Says African Development Bank President' 6th of April, 2023 Infrastructure Development Africa https://www.infrastructuredevelopment.africa/africas-energy-transition-to-cost-100-billion-annually-says-african-development-bank-president/

[5] See UNCTAD https://unctad.org/sdg-costing/energy-transition

[6] Ibid.

[7] Jong-Il You, The Bretton Woods Institutions: Evolution, Reform and Change (Korea Dev. Inst., Sch. of Pub. Pol'y & Mgmt., Working Paper, Seoul, S. Kor.).

[8] Ineba Bob-Manuel, Tubobereni Tomi Ben & Charles N. Ohanyelu, Analyzing the Impact of Bretton Woods on Post-World War II International Economic Relations, 11 Int'l J. All Rsch. Educ. & Sci. Methods 341 (2023).

representing a position of consensus in the scientific community, contained far-reaching policy recommendations dissuading countries from investing in LNG projects. More worrisome is the fact that these reports are re-framing the discourse on funding and wider funding policy for LNG projects in Africa because the recommendations contained in these reports carry a weight that impacts the policy direction of AMFIs such as the AfDB. To buttress this point, this paper examines the change in the public narrative on the AfDB's approach to LNG projects prior to and after the release of the controversial World Bank reports. We contend that the change in the negative characterisation of LNGs in post-2021 reports from a transitional fuel to fossil fuel, as well as the mounting pressure on the AfDB to shift its focus from LNG projects to other renewables, exemplifies the far-reaching impact of knowledge production platformed by IFIs such as the World Bank on the energy transition discussion in Africa. Finally, the paper advocates for a co-production approach between IFIs and AMFIs of research and development on these issues before such reports are disseminated.

2. Methodology and Analytic Framework

Using the analytic frame of knowledge controversies and a sentiment analysis model utilising a BERT-based language model, [9] this paper analyses the policy trends and messaging prior to and after two 2021 World Bank reports on the role of Liquified Natural Gas (LNG) as a transition fuel in the shipping industry. The sentiment analysis was conducted using a predefined sentiment analysis pipeline, which allowed for efficient processing of the extracted titles. The model assigns sentiment labels based on the emotional tone conveyed in the text. Prior to analysis, the extracted titles were prepared for processing. This involved cleaning the data to remove any irrelevant characters or HTML tags that could interfere with sentiment detection. Additionally, the titles were formatted to ensure uniformity, facilitating accurate sentiment analysis.[10] For the purposes of this research, sentiment was categorised into three classes: Positive, Neutral, and Negative. The output from the BERT model, originally on a scale of 1 to 5, was mapped to three categories of sentiments:

1. **Positive**: 4 stars and 5 stars
2. **Neutral**: 3 stars
3. **Negative**: 1 star and 2 stars

Using a web scraping technique to implement the sentiment model, we extracted and analysed headlines of 165 reports on LNG-related topics on the World Bank Open Knowledge Repository (OKR) published from 1950 to 2024. The 2021 reports on the role of Liquified Natural Gas (LNG) as a transition fuel in the shipping industry were used as a benchmark to measure the difference in sentiments on LNG reporting on either side of these pivotal reports. Given the focus on the shipping industry in the 2021 World Bank reports, we also extracted and analysed headlines of 1,189 articles on LNG and shipping from the Lloyds Shipping Newsletter, published from 1950 to 2024. We also used 2021 as a benchmark to check for correlations (if any) between World Bank reports and the discourse on the role of LNG in the decarbonisation of the global shipping industry. Finally, we extracted and analysed narratives around the support for LNG projects by the AfDB in Africa prior to and after the 2021 World

[9] For a definition of knowledge controversies, see section 2, infra supra note 8. The data for the sentiment analysis was derived by web scraping publicly available data (i.e. extracting news titles from the World Bank and Lloyds websites) that report on LNG and shipping decarbonisation before 2021 and post-2021.
[10] Sindhu, S., Kumar, S. and Noliya, A. (2023). A Review on Sentiment Analysis using Machine Learning. [online] IEEE Xplore. doi:https://doi.org/10.1109/ICIDCA56705.2023.10099665.

Bank reports, with a view to identifying any thematic patterns in the narrative around the role of Liquified Natural Gas (LNG) as a transition fuel in the shipping industry.

3. Knowledge Controversies in Scientific Knowledge: An Overview

Given the controversial and far-reaching impact of emerging scientific knowledge on LNG's impact, it is important to understand the dynamics of knowledge controversies, especially as it relates to climate change. The concept of "knowledge controversies" has its roots in science and technology studies (STS).[11] According to Jacqueline Best, 'knowledge controversies are moments when relatively settled scientific ideas, techniques, and measurements become the subject of serious debate – either within the scientific community or more broadly among the public.'[12] Explored by scholars such as Latour,[13] Callon[14], and Jassanoff across a range of issues, such as nuclear power and climate change, knowledge controversies are a useful analytic frame for understanding how disputes and contestations around scientific knowledge on climate change and climate finance put the spotlight on IFIs, like the World Bank and other organisations, driving the global discourse on energy transition policy.

It is important to note that these controversies and contestations about knowledge are not just technical disputes but are often deeply political, challenging the legitimacy of scientific expertise on a particular subject matter or great significance nationally and internationally.[15] For example, Best, speaking in the context of monetary policy, illustrates how central banks in three major G7 countries faced significant knowledge controversies, particularly in the aftermath of the 2008 financial crisis. Best argues that Central banks, once revered for their technical expertise as it relates to monetary policy, were pulled into a terrain of uncertainty raised by questions over the limitations of their models and the attendant intense politicisation of their policy decisions. The idea that once-settled knowledge can become controversial is a theme that resonates beyond central banking, particularly in areas like climate change.

3.1.Knowledge Controversy and Climate Change

Undoubtedly, climate change is one of the most significant knowledge controversies of our time. This is because scientific consensus on climate change, though robust, has been hotly contested and challenged by various political, economic, and social actors.[16] This has led to a situation in which climate science is debated not only in academic circles but also in public and political forums.[17] The controversies around climate change are multifaceted, ranging from contestations over the validity of climate models, the economic impacts of climate policies,

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[11] *Latour, B., 1987. Science in action. Berkshire: Open University.*
[12] Jacqueline Best, 'Central banks' knowledge controversies', (2024) New Political Economy, 1–15. 4.
[13] Ibid.
[14] *Callon, M., Lascoumes, P., and Barthe, Y., 2009. Acting in an uncertain world: an essay on technical democracy. Cambridge,*
MA: MIT Press.
[15] Amelia Sharman, *The Impact of Controversy on the Production of Scientific Knowledge* (September 2015), Centre for Climate Change Economics and Policy, Working Paper No 233; Grantham Research Institute on Climate Change and the Environment, Working Paper No 207.
[16] Lewandowsky and others, Seepage: Climate change denial and its effect on the scientific community, (2015) Global environmental change 33, 1-13. See also Naomi Oreskes, The Scientific Consensus on Climate Change: How Do We Know We're Not Wrong? (2018) Climate Modelling, 66 – 99.
[17] Stuart Bryce Capstick, Nicholas Frank Pidgeon, 'What is climate change scepticism? Examination of the concept using a mixed methods study of the UK public,' (2014) Global Environmental Change, 24, 389-401.

and the moral imperatives of addressing climate change.[18] These disputes over scientific knowledge on these issues are further exacerbated by the fact that there are stakeholders with varying interests in either maintaining the status quo or taking ownership of the energy transition process. Developing countries which are tethered to the aprons of hegemons that dominate the current unequal global governance framework on climate finance are often caught in the cross-hairs of these conflicting interests and associated controversies over the science of climate change. One major area that amplifies the precarity of developing countries is the financing of climate mitigation and adaptation models proffered in global climate change discussions.

Climate finance, which refers to funding aimed at supporting mitigation and adaptation activities to address climate change, is another area rife with knowledge controversies.[19] IFIs like the World Bank play a crucial role in this domain, but their approaches and metrics are often contested. Notably, the World Bank and similar institutions have been criticized for their methods of calculating climate finance, which some argue overestimate the impact of their investments.[20] These controversies highlight the challenges of measuring and valuing the social and environmental outcomes of financial flows. The debates around climate finance also reflect deeper concerns about equity and justice, particularly in how funds are distributed and whose interests are prioritized.

In the next section, this paper focuses on the decarbonisation of shipping as an example to contextualise the extent of these controversies and demonstrate the impact of knowledge production by IFIs on the energy transition discourse in Africa and the wider global south.

4. Knowledge Controversies on LNG as a Transitional Fossil Fuel in the World Bank's 2021 Reports

The 2021 World Bank reports, *The Potential of Zero-Carbon Bunker Fuels in Developing Countries*[21] and *The Role of LNG in the Transition Toward Low- and Zero-Carbon Emission Shipping*,[22] are important publications that have stirred significant debate within the context of the global energy transition. These reports critically assess the role of Liquified Natural Gas (LNG) as a transitional fuel, particularly in the shipping industry, and present arguments that challenge the prevailing view of LNG as a viable long-term solution. The findings in these reports build on the previous controversial study by Howarth on the long-term impact of LNG on the environment.[23] The Report's critical stance on LNG is based on a combination of

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[18] Elaine Kamarck, The challenging politics of climate change, Brookings Institute, September 23, 2019 https://www.brookings.edu/articles/the-challenging-politics-of-climate-change/

[19] For detailed arguments, see James Thuo Gathii, Adebayo Majekolagbe and Nona Tamale, *Transforming Climate Finance in an Era of Sovereign Debt Distress* (Sheria Publishing, 2023).

[20] Annie Thériault, 'Doubts over accuracy and scale of World Bank climate finance may undermine trust ahead of crucial summit talks' Oxfam International, 3rd October 2022, https://www.oxfam.org/en/press-releases/doubts-over-accuracy-and-scale-world-bank-climate-finance-may-undermine-trust-ahead see also Oxfam International,' Unaccountable Accounting The World Bank's unreliable climate finance reporting' October 2022, Oxfam Briefing Papers https://policy-practice.oxfam.org/resources/unaccountable-accounting-the-world-banks-unreliable-climate-finance-reporting-621424/

[21] Dominik Englert et al, *The Potential of Zero-Carbon Bunker Fuels in Developing Countries* (Washington, DC: World Bank, 2021), online: World Bank http://hdl.handle.net/10986/35435.

[22] Dominik Englert et al, *The Role of LNG in the Transition Toward Low- and Zero-Carbon Shipping* (Washington, DC: World Bank, 2021), online: World Bank http://hdl.handle.net/10986/35437.

[23] Howarth, Robert. 2015. Methane Emissions and Climatic Warming Risk from Hydraulic Fracturing and Shale Gas Development: Implications for Policy. *Energy and Emission Control Technologies* 45. http://www.eeb.cornell.edu/howarth/publications/f_EECT-61539-

lifecycle analysis, projections of future fuel demand, and the evolving regulatory landscape shaped by the IMO and the Paris Agreement.

However, drawing on the framework of knowledge controversies discussed in the previous section, it is instructive to note the position in the World Bank reports on LNG, although well-researched and presented, does not represent a position of scientific consensus on the potential pitfalls of relying on LNG as a transitional fuel for shipping. Previous studies associated with such as Howarth, a leading proponent of this theory[24] on the methane leakage issues and the argument that LNG poses more danger than coal over the long term have been questioned by scholars such as Tanaka and Others[25] who argue in their study that the coal-to-gas shift is consistent with climate stabilization objectives for the next 50–100 years.[26]

Despite the report's attempts to present its findings objectively, its far-reaching policy recommendations have the potential to elevate the findings to a pedestal of consensus on the science behind the study. For example, the reports provide recommendations that extend beyond the scope of the initial analysis, suggesting strategic directions for policymakers. For instance, it calls for further work on cost competitiveness and national datasets, which implies a foundational level of confidence in the initial findings, potentially positioning these results as a basis for a policy without fully comprehensive backing.[27] Also, the report identifies green ammonia and hydrogen as the most promising zero-carbon fuels using a Red-Amber-Green (RAG) analysis, presenting this conclusion as a clear, consensus-based decision. This methodological approach and the broad recommendations to shift investments towards these fuels elevate the findings, potentially creating a perception of settled science around these specific fuels despite the inherent complexities and uncertainties in the broader energy transition landscape.[28] Furthermore, the report emphasizes the strategic importance of transitioning towards zero-carbon bunker fuels and suggests significant policy and industry shifts, including investment strategies and international cooperation. By doing so, it positions these findings as critical and urgent, potentially overshadowing alternative perspectives or uncertainties within the scientific community regarding these recommendations.[29]

These examples highlight how the report's policy recommendations might inadvertently suggest a broader consensus on the science than what may be fully substantiated by the current data and analysis, influencing global energy policy in the process. The next section discusses a few points and observations gleaned from the report to buttress this argument.

5. LNG as a Transitional Fuel: The Controversy

The World Bank's 2021 reports present a nuanced and critical perspective on the role of LNG as a bunker fuel. Historically, LNG has been considered a cleaner alternative to traditional oil-derived bunker fuels due to its lower emissions of sulfur oxides (SOx), nitrogen oxides (NOx), and particulate matter (PM). However, the World Bank reports emphasise that the potential

[24] ibid.
[25] Tanaka, K., Cavalett, O., Collins, W.J. *et al.* Asserting the climate benefits of the coal-to-gas shift across temporal and spatial scales. *Nat. Clim. Chang.* **9**, 389–396 (2019). See also Zeke Hausfather, 'Methane matters, but doesn't eliminate gains from emissions reductions' October 14, 2019, The Breakthrough Institute, https://thebreakthrough.org/issues/energy/howarth-natural-gas
[26] Tanaka note 23.
[27] Dominik Englert et al, note 21, 43-44.
[28] Ibid 26-29.
[29] Ibid.

benefits of LNG are undermined by significant uncertainties regarding its greenhouse gas (GHG) emissions, particularly methane leakage, which can negate the climate benefits associated with its use.[30]

The reports highlight that while LNG might offer short-term air quality improvements and marginal GHG reductions, its effectiveness as a transitional fuel is highly questionable.[31] This scepticism is rooted in the lifecycle analysis of LNG, which shows that methane, a potent GHG, can leak at various stages of LNG production, transportation, and combustion.[32] According to the report, such leakages could result in GHG emissions comparable to, or even exceeding, those of traditional fossil fuels, thus diminishing the argument for LNG as a transitional solution.[33] The reports suggest that instead of doubling down on LNG, the focus should shift to developing zero-carbon bunker fuels like hydrogen and ammonia, which are more aligned with long-term decarbonization goals.[34]

In addition to the controversy surrounding the science underpinning the research, there are also controversies surrounding the policy recommendations accompanying the analysis. For example, these reports dissuaded petrostates from focusing on LNG as a transitional fuel, arguing that such investments could lead to stranded assets and technology lock-in.[35] It suggests that investments in LNG infrastructure may be underutilised as LNG demand is expected to peak and then decline sharply from the mid-2030s onwards.[36] The report also highlights the possibility that LNG will be rapidly replaced by zero-carbon alternatives such as hydrogen and ammonia by 2030. On this premise, the reports advise against substantial long-term investments in LNG infrastructure, as these investments could become obsolete relatively quickly.[37] Connected to this latter point, the logic is that given the significant capital expenditures required for LNG infrastructure projects, the additional investment costs associated with LNG may not justify the temporary benefits, as the infrastructure will likely face financial risks due to the anticipated decline in LNG demand.[38]

6. Impact on Energy Transition Discourse in Petrostates

The knowledge controversies over LNG pose significant challenges for LNG-producing countries worldwide. For example, the USA, the largest producer of LNG, introduced a moratorium on the export of LNG to non-FTA countries in January 2024.[39] This has, however, not doused the US's overall policy towards expanding its production capacity for LNG,[40] with

[30] Ibid.
[31] Ibid.
[32] Ibid.
[33] Ibid. 47.
[34] Ibid.
[35] Ibid.
[36] Ibid.
[37] Ibid.
[38] Ibid.
[39] See White House Briefing, Biden-Harris Administration Announces Temporary Pause on Pending Approvals of Liquefied Natural Gas Exports, January 26 2024 https://www.whitehouse.gov/briefing-room/statements-releases/2024/01/26/fact-sheet-biden-harris-administration-announces-temporary-pause-on-pending-approvals-of-liquefied-natural-gas-exports/
[40] See `Nicole Pollack, 'The Biden admin has presided over a vast buildout of liquefied natural gas infrastructure that threatens its climate goals. Here's what could happen next.' Canary Media, 23 January 2024 https://www.canarymedia.com/articles/liquefied-natural-gas/the-big-battle-brewing-over-lng-exports

the USA still investing heavily in LNG infrastructure despite the emerging narrative that increasingly questions LNG's long-term viability as a key player in the energy transition.

However, this shift in discourse has profound implications for petrostates in Africa that remain net importers of capital for investments of this magnitude. Countries like Algeria, Nigeria, Mozambique, Egypt, Libya and Tanzania, which have substantial LNG reserves, could find their ability to attract investments at risk if global markets located in the global west pivot away from LNG more rapidly than anticipated.[41] Moreover, the World Bank reports imply that continued reliance on LNG could lock these countries into a fossil fuel-based infrastructure that might become obsolete as zero-carbon alternatives gain traction. This scenario could exacerbate existing economic vulnerabilities, particularly if the global demand for LNG declines before these African petrostates can fully capitalize on their resources. While the USA has the flexibility to continue to pursue its investment policy on LNG production, even if it contradicts its climate change commitments, African petrostates do not have such flexibility. However, by framing LNG as a potentially limited or even a temporary solution, the World Bank report effectively shifts the policy narrative, influencing both global and regional policy directions. The challenge is that this impact will be disproportionately felt by Petrostates in developing countries.

The knowledge production process can be seen as part of a broader strategy by IFIs to steer countries towards energy pathways that align with global decarbonization targets. However, this approach raises important questions about the extent to which AMFIs and national governments can or should rely on externally produced knowledge. The reports' conclusions suggest a need for a more localized and context-specific approach to energy transition in Africa, one that considers the continent's unique economic and developmental challenges.

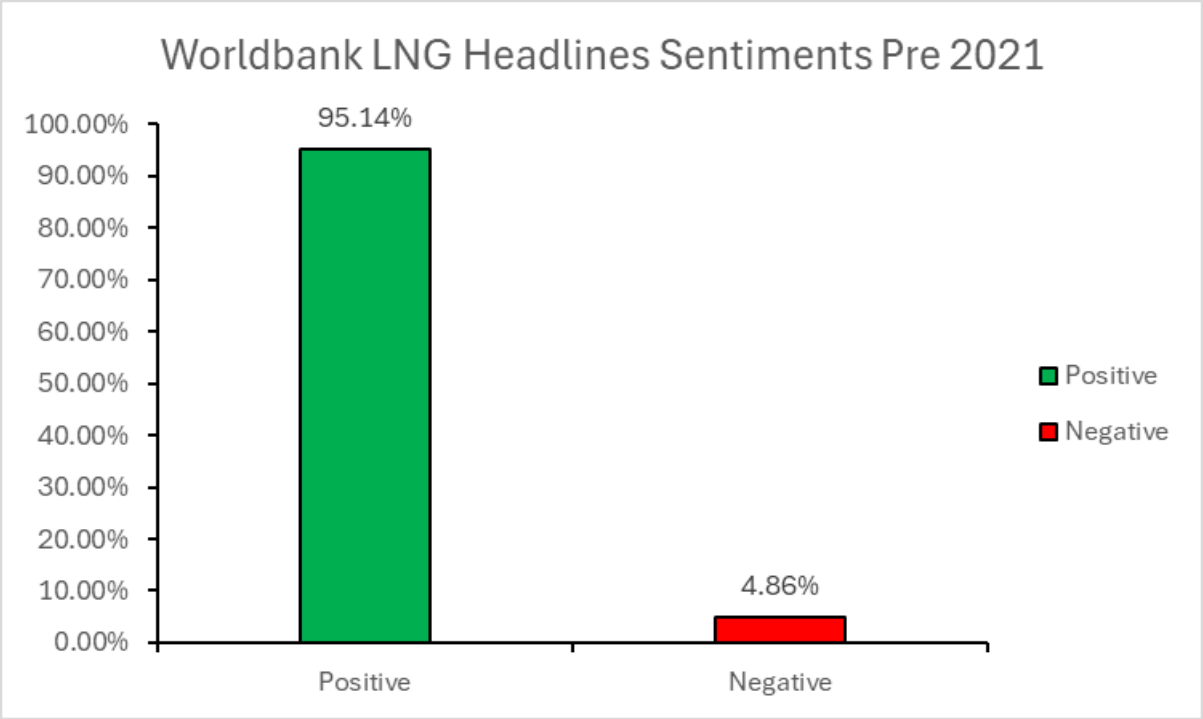
The knowledge controversies surrounding LNG, as highlighted in the World Bank's 2021 reports, underscore the complexities of the global energy transition. These reports present a critical juncture for African LNG-producing countries: they must either adapt to the shifting global discourse by diversifying their energy strategies or risk being left behind as the world moves towards zero-carbon fuels. The World Bank's influence in shaping these narratives illustrates the power of knowledge production by IFIs and its far-reaching implications for policy and economic development in the global south. As such, there is a pressing need for African nations to engage in indigenous knowledge production that reflects their specific needs and circumstances, ensuring that their energy transition strategies are both sustainable and equitable.

7. Is there a link between Knowledge Production by the World Bank and the Changing Narrative on LNG?

Prior to the 2021 World Bank reports, 157 articles related to LNG were published in the Open Knowledge Repository (OKR). After the reports, this number dropped sharply to just 8. Before 2021, sentiments towards LNG were overwhelmingly positive, with 95.14% of the articles expressing favourable views (see Chart 1). However, this shifted dramatically following the 2021 World Bank reports, with 71.43% of the post-2021 articles reflecting negative sentiments towards LNG (see Chart 2).

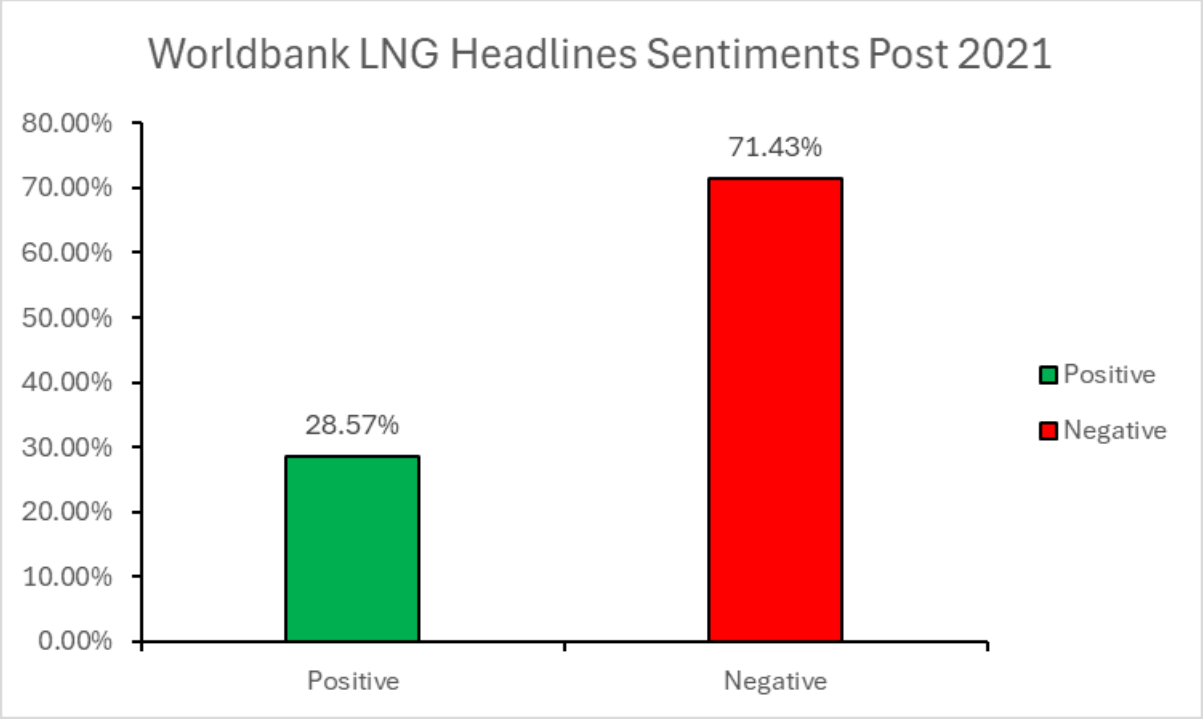
[41] Jessica Casey, "Africa: The Natural Gas Sleeping Giant" (13 September 2023), *LNG Industry*, online: https://www.lngindustry.com/special-reports/13092023/africa-the-natural-gas-sleeping-giant/.

Chart 1



Sources: The Authors

Chart 2

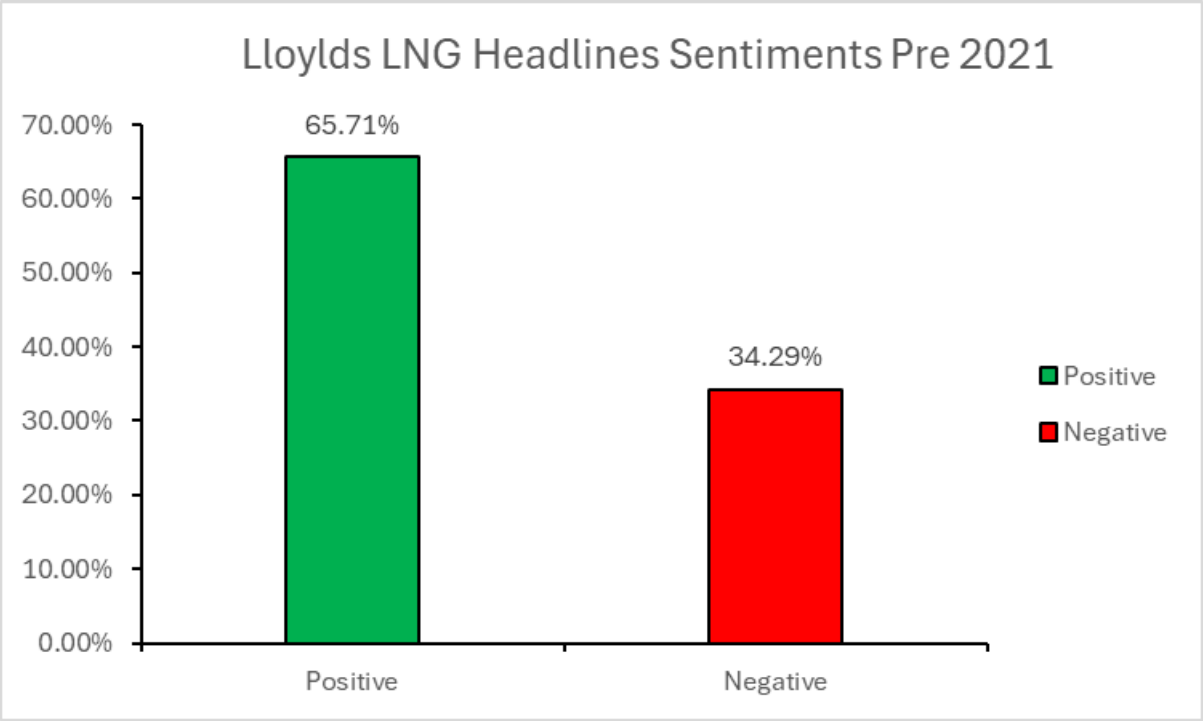


Sources: The Authors

Similarly, in the Lloyd's Shipping Newsletter, before 2021, 65.17% of the articles conveyed positive sentiments regarding LNG as a transitional fuel for maritime transport (see Chart 3). After the World Bank reports in 2021, sentiment in the shipping sector turned notably negative,

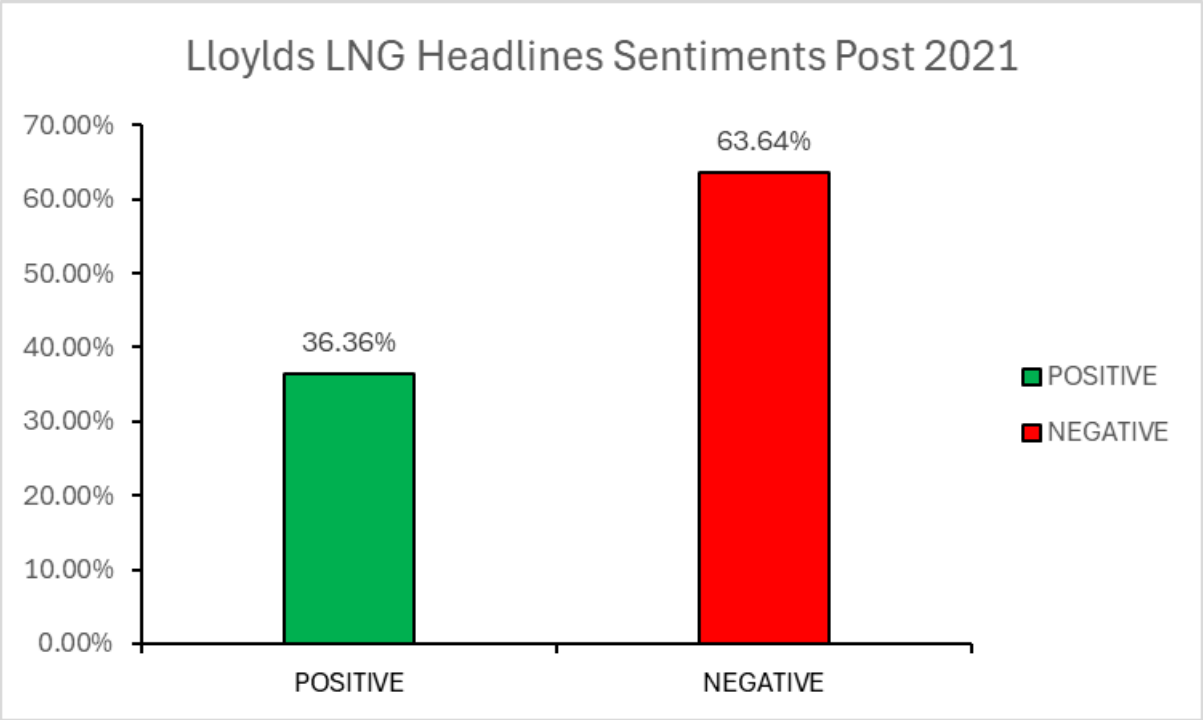
with 71.43% of articles expressing negative views on LNG and the percentage of positive articles dropping to 26.57% (see Chart 4).

Chart 3



Sources: The Authors

Chart 4



Sources: The Authors

8. Correlation Between Emerging Uncertainty in AfDB's Position on Support for Projects in Africa

The impact of these World Bank reports is seen in the noticeable change in the direction of travel taken by the African Development Bank (AfDB), Africa's premier regional development bank, on the LNG projects in Africa. The focus on the AfDB is instructive because it is a key source of financial support for the energy transition in Africa, and its policies can have a big impact on the pathways open to African countries.

The AfDB's involvement in the Mozambique LNG Area 1 Project illustrates this point. As of 2020, the narrative surrounding investment in this fossil fuel-based energy infrastructure was overwhelmingly positive.[42] The project, valued at over $24 billion, was celebrated as Africa's largest foreign direct investment, with the AfDB contributing a $400 million senior loan.[43] The project aimed to exploit Mozambique's extensive offshore natural gas reserves, positioning the country as one of the world's largest LNG exporters.[44]

However, by 2022, there was a noticeable shift or uncertainty in the narrative about the AfDB's stance on continuing its support for fossil fuel projects, including LNG projects. This emerging uncertainty can be closely correlated with the broader global discourse, particularly influenced by changing sentiments about LNG after the 2021 reports from the World Bank questioned the mid to long-term viability and environmental impact of LNG as a transitional fuel in the shipping industry.

To illustrate this point, we monitored a sample of reporting on AfDB's policy related to LNG projects in Africa from 2019 to 2024. This coincides with messaging on LNG prior to and in the immediate aftermath of the 2021 World Bank Reports. The table below presents key articles with annotations capturing key phrases and headlines associated with reports about the AfDB's approach to LNG funding before and after the World Bank report in 2021. A recurring and common theme linking the World Bank reports and the selected AfDB reports is the conceptualisation of "stranded assets." In 2019, the AfDB's report defined 'stranded assets from the perspective of Africa's vast natural resources that would be stranded in the transition to greener alternatives.

Table 1

Before World Bank Reports	After World Bank Reports
September 2019	**2023**

[42] Environmental agencies such as Friends of the Earth were particularly concerned with the excessive reliance being placed by IFIs such as the IMF on the Mozambican LNG projects for the country's economic transformation. See Friends of the Earth, "A Risky Bet: The IMF's Role in Mozambique's LNG Development" (29 February 2024), online: Friends of the Earth https://foe.org/blog/a-risky-bet-the-imfs-role-in-mozambiques-lng-development/.

[43] African Development Bank, "African Development Bank and Mozambique LNG Area 1 Project Win Multilateral Deal of the Year Award for $24 Billion Global Syndicated Finance" (11 February 2021), online: AfDB https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-and-mozambique-lng-area-1-project-win-multilateral-deal-year-award-24-billion-global-syndicated-finance-42120.

[44] Ibid.

"Can Africa Afford to 'Strand' its Fossil Fuels?"[45] *Annotation*: "Stranded assets" are natural resources, like minerals…" **July 2020** AfDB Investment in Mozambique LNG Project *Annotation*: "Largest foreign direct investment in Africa"; "Transform global energy markets"[46]	"Gas Investments Worth $245 Billion Across Africa in Risk of Becoming Stranded Assets"[47] *Annotations:* "Stranded Assets"; "Competing with Renewable Energy." "Shifting the Narrative: The AfDB Must Promote Clean, Sustainable Renewable Energy Access in Africa"[48] *Annotations:* "Stranded Assets"; "Call to stop funding LNG projects…"
February 2021 Global Multilateral Deal of the Year Award *Annotation*: "Diversifying global LNG supply"; "Boosting Mozambique's energy access"[49]	**May 2024** AfDB at a Crossroads[50] *Annotation*: "Leap-frogging fossil fuels"; "Transition to renewable energy"; "Increased scepticism about LNG" "Still Banking on Fossil Fuels: How the African Development Bank (AfDB) continues to invest in fossil fuels at a cost to all Africans"[51] *Annotation*: "Stranded Asset Risk"; "LNG as a False Solution"

[45] African Development Bank, "Can Africa Afford to 'Strand' its Fossil Fuels?" (23 September 2019), online: AfDB https://www.afdb.org/en/news-and-events/can-africa-afford-strand-its-fossil-fuels-30276.
[46] Reuters, "African Development Bank Agrees $400 Million Loan for Mozambique LNG" (21 July 2020), online: Reuters https://www.reuters.com/article/business/finance/african-development-bank-agrees-400-million-loan-for-mozambique-lng-idUSKCN24M1BP.
[47] Offshore Energy, "Gas Investments Worth $245 Billion Across Africa in Risk of Becoming Stranded Assets" (3 January 2023), online: Offshore Energy https://www.offshore-energy.biz/gas-investments-worth-245-billion-across-africa-in-risk-of-becoming-stranded-assets/#:~:text=This%20report%20outlines%20that%20planned,energy%20crisis%2C%20resulting%20from%20Russia's.
[48] The Big Shift Global, "Shifting the Narrative: The AfDB Must Promote Clean, Sustainable Renewable Energy Access in Africa" (2023), online: Big Shift Global https://bigshiftglobal.org/shifting-narrative-afdb-am-2023.
[49] African Development Bank, "African Development Bank and Mozambique LNG Area 1 Project Win Multilateral Deal of the Year Award for $24 Billion Global Syndicated Finance" (11 February 2021), online: AfDB https://www.afdb.org/en/news-and-events/press-releases/african-development-bank-and-mozambique-lng-area-1-project-win-multilateral-deal-year-award-24-billion-global-syndicated-finance-42120.
[50] Dean Bhekumuzi Bhebhe & Fran Witt, "The AfDB at a Crossroads: To Keep Funding Fossil Fuels or Not?" (22 May 2024), online: African Arguments https://africanarguments.org/2024/05/the-afdb-at-a-crossroads-to-keep-funding-fossil-fuels-or-not/.
[51] Power Shift Africa, "Still Banking on Fossil Fuels: How the African Development Bank (AfDB) Continues to Invest in Fossil Fuels at a Cost to All Africans" (2024), online: Re-Course https://re-course.org/wp-content/uploads/2024/05/StillBankingOnFossilFuels.pdf.

Source: The Authors.

The tone of the AfDB's 2019 article on the potential for Africa's large oil and gas reserves to become stranded assets was cautious, indicating that the bank was still unsure of its position on the trade-offs involved in the transition to low-carbon pathways.[52] The 2020 announcement by the AfDB of the investment in Mozambique's LNG project indicated a strong commitment to LNG projects at that time.

However, by 2022, the narrative shifted, with the AfDB facing mounting pressure to reconsider its investments in LNG fossil fuels.[53] Uncertainty regarding the long-term demand for LNG and the risks of stranded assets, a major finding from the 2021 World Bank report, has also become more pronounced and a recurring theme in the public narratives directed at the AfDB as of 2024.

It is unsurprising that this change in narrative comes at the same time period as the changing global narrative and sentiments towards LNG discussed in section 7 of this paper. This shift in narrative reflects how knowledge production by IFIs can shape the investment strategies of regional multilateral financial institutions like the AfDB. Based on the change in narrative and characterisation of LNGs, it is argued that the World Bank's report likely played a significant role.

9. Charting a way forward – Co-production of knowledge

To effectively navigate the complex and often contentious landscape of the global energy transition, International Financial Institutions (IFIs) and the African Development Bank (AfDB) must engage in a robust and collaborative knowledge co-production process. This approach should draw on the principles of co-production, particularly the concepts of "boundary agency" and the deliberate subversion of traditional boundaries between science, policy, and practice advocated by scholars like Howarth and others.[54]

To facilitate effective co-production, IFIs and the AfDB should create or designate boundary agencies—entities or individuals tasked with bridging the gaps between different knowledge communities. These boundary agencies would play a crucial role in translating diverse perspectives, ensuring that the scientific knowledge produced by IFIs is contextualized and relevant to the African context. By fostering dialogue between global experts, African policymakers, and local practitioners, boundary agencies can help tailor energy transition policies that are both scientifically sound and locally applicable.

Knowledge co-production must also be an inclusive and iterative process involving all relevant stakeholders from the outset. This includes IFIs and AfDB officials and representatives from African governments, local communities, NGOs, and private sector entities involved in the energy sector.[55] By engaging these stakeholders early and consistently, the co-production process can better capture the diverse needs, values, and priorities of those most affected by

[52] AfDB note 45.
[53] See post-2021 articles in table 1 above.
[54] C. Howarth, M. Lane, S. Morse-Jones, K. Brooks, D. Viner, The 'co' in co-production of climate action: Challenging boundaries within and between science, policy and practice, (2022) Global Environmental Change,72, 102445,
[55] Ibid.

energy transition policies. Regular feedback loops should be established to ensure the knowledge produced is continuously refined and relevant as the energy transition evolves.[56]

A key aspect of successful co-production is shared ownership of both the process and its outcomes. IFIs and the AfDB should work towards a model where all stakeholders have a meaningful say in the decision-making process, ensuring that the resulting policies are co-owned by all parties. This can be achieved through joint workshops, collaborative research projects, and co-authorship of key policy documents. Such an approach enhances the legitimacy and credibility of the knowledge produced and fosters greater buy-in and commitment to the implementation of agreed-upon strategies.

Finally, it is essential to build capacity for indigenous knowledge production within African institutions to address the power imbalances that often characterize knowledge production in the global south. IFIs should support the AfDB and other African multilateral financial institutions in developing the necessary skills, resources, and networks to generate and disseminate locally relevant knowledge. This could involve funding research initiatives, providing technical assistance, and facilitating knowledge exchange between African researchers and their global counterparts. By empowering African institutions to produce their own knowledge, the co-production process can become more balanced and reflective of Africa’s unique energy challenges and opportunities.

By adopting these recommendations, IFIs and the AfDB can move towards a more equitable and effective co-production model for knowledge on the energy transition. This model recognizes the importance of integrating global scientific insights with local realities and seeks to actively subvert traditional power dynamics that have historically marginalized African perspectives. Through boundary agencies, inclusive engagement, shared ownership, and capacity building, the co-production process can help ensure that Africa's energy transition is guided by knowledge that is both globally informed and locally relevant.

[56] Ibid.