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WHAT DOES ROVUMA GAS ACTUALLY BRING TO MOZAMBIQUE?

A fiscal analysis of the Coral Sul FLNG Project and the limits of the LNG Dependence Model

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LIST OF ACRONYMS AND ABBREVIATIONS

Technical and Industry Terms

Acronym	Full form and note
CAPEX	Capital Expenditure - Capital Expenditures for Investment
CCPP	Exploration, Production, Construction and Concession Contract
CGE	Computable General Equilibrium (economic model)
DCF	Discounted Cash Flow
EPCI	Engineering, Procurement, Construction and Installation - EPCI Contract
FID	Final Investment Decision
FLNG	Floating Liquefied Natural Gas - Floating Liquefied Natural Gas Unit
LNG	Liquefied Natural Gas
LIBOR	London Interbank Offered Rate (replaced by SOFR in 2023)
MMBtu	Million British Thermal Units (BTU) – a unit of energy used in the LNG trade
MTPA	Million Tonnes Per Annum - million tonnes per year (LNG production capacity)
SPA	Sales and Purchase Agreement - LNG Sales and Purchase Agreement

Tax and Financial Terms

Acronym	Full form and note
AT	Mozambique Tax Authority
FDI	Foreign Direct Investment
IRPC	Corporate Income Tax
PESOE	Economic and Social Plan and State Budget of Mozambique
GDP	Gross Domestic Product
RPCGE	Report and Opinion on the General State Account (annual publication of the Ministry of Economy and Finance)
WSF/FSM	Mozambique Sovereign Wealth Fund

Mozambican Institutions

Acronym	Full form and note
BdM	Bank of Mozambique
CDD	Centre for Democracy and Development (Mozambique)
CIP	Centre for Public Integrity (Mozambique)
EDM	Mozambique Electricity, E.P.
ENH	National Hydrocarbons Company, E.P.
IGEPE	Institute for the Management of State Holdings
INE	National Institute of Statistics of Mozambique
INP	National Petroleum Institute of Mozambique
MEF	Ministry of Economy and Finance of Mozambique
MIREME	Ministry of Mineral Resources and Energy of Mozambique

International Organisations and Others

Acronym	Full form and note
ALER	Lusophone Association for Renewable Energy
AMER	African Minerals and Energy Resources Association
BII	British International Investment - the UK's development bank
EITI	Extractive Industries Transparency Initiative
U.S.	United States of America
IMF	International Monetary Fund
IEA	International Energy Agency
IISD	International Institute for Sustainable Development
NBER	National Bureau of Economic Research (U.S.)
NRGI	Natural Resource Governance Institute
OIES	Oxford Institute for Energy Studies
UK	United Kingdom
WEO	World Energy Outlook (IEA annual publication)

EXECUTIVE SUMMARY

The Coral Sul FLNG project, the only LNG initiative in production in Mozambique until 2025, generated $253 million in tax revenue between 2022 and 2025. Although significant, this figure is set against a fragile macroeconomic context. Mozambique's GDP stands at around $22.4 billion. Sovereign debt exceeds $12.5 billion, and debt service accounts for an increasing share of tax revenue. The long-term projections in this study paint a more realistic view than the prevailing narrative regarding economic transformation through LNG.

Under the baseline scenario ($12/MMBtu), the Coral Sul project is expected to generate $4.028 billion in tax revenue over the course of the project's 27-year lifespan, which corresponds to an average of $149 million per year. In the stress scenario ($8/MMBtu, consistent with an accelerated energy transition trajectory), the total falls to $1.456 billion, with IRPC equal to zero throughout the project's entire lifetime. In the optimistic scenario ($16/MMBtu), the total comes to $11.355 billion. The range between scenarios is 7.8 times, which illustrates the extreme vulnerability of Mozambique's tax revenues to fluctuations in international LNG price, a factor over which Mozambique has no control.

The effective government take – that is, the share that the government actually retains – is 10.08% of the project's gross revenue in the base-case scenario, in contrast to the 49% figure frequently cited, which is calculated after costs. The difference reflects the structural weight of recoverable costs ($11.7 billion in CAPEX and $23 billion in cumulative OPEX), and not a contractual irregularity. The timing of revenue is heavily weighted towards the latter part of the project's lifespan: the IRPC, the tax instrument with the greatest impact on tax revenue, is zero for 11 consecutive years (2022–2032) and returns to zero in the final six years (2043–2048), with the bulk of revenue concentrated in 10 years of the project's lifespan. In three of the six scenarios analysed (Stress, Energy Transition-TE Stress, and TE Base), the total IRPC over 27 years is zero.

The analysis of the model also reveals an additional finding regarding contractual progressivity. Article 9.10 of the CCPP Area 4 establishes five tiers for the distribution of Profit Oil based on the R Factor (15%, 25%, 35%, 45%, and 55%). Throughout the project's entire lifecycle, the government's share never exceeds 25%, even in the best-case scenario. The R Factor reaches a maximum of 1.25, well below the thresholds required to trigger the 35%, 45%, or 55% brackets. The progressive tax structure negotiated in 2006, which in theory was intended to protect the government in scenarios of high profitability, has not materialised in practice.

State involvement entails liabilities that are not reflected in the public accounts. ENH's quasi-sovereign debt, amounting to approximately $1.356 billion in Coral Sul, plus an estimated $720 million in Coral Norte and $2.535 billion in Mozambique LNG (Area 1), totals $4.6 billion in contingent liabilities for the carried interest in the sector. ENH's net dividends to the government from Coral Sul will be zero through 2033. For eleven years, gross dividends have been entirely consumed by debt service. The total net tax benefit to the government, calculated as direct tax revenue plus net dividends from ENH minus interest paid, amounts to $5.268 billion over 27 years, or an average of $195 million per year.

The central argument of this study is that gas is a resource, not an end in itself. An analysis of foreign direct investment received by Mozambique between 2002 and 2025, based on primary data from the Bank of Mozambique, shows that 84.6% of FDI during the 2018–2025 period was absorbed by the extractive sector, compared with just 1.4% for agriculture and 2.5% for manufacturing. Alternative sectors such as local cashew processing (an additional $100–150 million in annual exports) or the processing of graphite into battery products (an additional $200 million) offer systematically more favourable timing in terms of revenue, job creation, and risk compared to offshore LNG. The World Bank model published in March 2026 (World Bank, 2026), which is independent of ours, reaches the same conclusions.

> **This study does not argue against LNG. It advocates for realistic expectations, fairer contracts, and a development model that does not sacrifice sectors with the greatest potential for job creation and economic diversification in favour of a single sector whose substantial revenues will not materialise until the 2030's.**

1 INTRODUCTION

In November 2022, a historic milestone for Mozambique, the LNG carrier[1] New Energy set sail from the ultra-deep waters of the Rovuma River carrying the first shipment of liquefied natural gas (LNG) produced by Coral Sul FLNG, ENI's floating liquefaction platform, which remains the only LNG project in production in Mozambique to date. It was a historic moment. After decades of promises and years of delays caused by the jihadist insurgency in Cabo Delgado, Mozambique was finally becoming an LNG exporter.

The narrative surrounding this moment was powerful. Natural gas from the Rovuma River would transform Mozambique. With estimated reserves of more than 5 trillion cubic metres, the country ranked among the world's top ten holders of natural gas reserves. The most optimistic projections estimated revenues of more than $77 billion over the projects' lifetimes. Government officials described LNG as the catalyst that would lift Mozambique out of poverty and pay off its sovereign debt. International investors were celebrating the dawn of a new era.

Three years after the first shipment, the situation is more complex. The gross domestic product of Mozambique declined by -0.52% in 2025. The International Monetary Fund programme collapsed in April 2025 after the government failed to meet the conditionality requirements. The political crisis triggered by the disputed elections of October 2024 led to prolonged protests, resulting in dozens of deaths, and disrupted economic activity for months. The insurgency in Cabo Delgado, where the largest LNG projects are located, has not been eradicated, despite military operations by Rwandan and Mozambican forces. And the only LNG project currently in production, the Coral Sul FLNG, generated total tax revenues of approximately $253 million between 2022 and 2025, averaging $63 million per year.

> **The gap between the narrative of transformation and verifiable fiscal flows is not a temporary anomaly, but rather the predictable result of a contractual framework that was negotiated in 2006, before the major discoveries in the Rovuma basin, and which structurally concentrates the benefits to the state in the second half of a 27-year project's productive life. The purpose of this study is to understand this architecture, quantify its effects, and identify alternatives.**

1.1 The Research Question and Its Relevance

This study begins with a fundamental question: *What are the actual tax revenues that the Coral Sul FLNG project will generate for the Mozambican government over its lifecycle, under different LNG price scenarios?* And here's a second follow-up question: *What are the financial costs, contingent liabilities, and opportunity costs associated with these revenues?*

Mozambique has incurred sovereign debt that is partly justified by expectations of future LNG revenues, including the eurobonds that triggered the hidden debt scandal of 2013–2016[2]. It is negotiating debt restructuring with creditors who view LNG cash flows as an implicit guarantee of payment and deciding whether to approve the Final Investment Decision (FID) for a second LNG project (Rovuma LNG, $30 billion) without renegotiating the contractual terms governing revenue sharing. And it is planning the

[1] A LNG carrier is a tanker designed to transport liquefied natural gas (LNG).
[2] In September 2013, Mozambique issued its first Eurobonds (foreign-currency-denominated sovereign debt securities), raising $500 million on the international market with a maturity date in 2023, based on expected natural gas revenues. The inability to repay this debt, exacerbated by the disclosure of hidden loans in 2016, triggered the 2017 sovereign default and the subsequent financial restructuring.

state budget with revenue projections that range, depending on the source consulted, from $4.7 billion to $24.5 billion for the same project.

This wide range of projections, spanning a ratio of 5 to 1 for the same asset, is not merely an academic issue, but rather a matter of fiscal governance. Economic policy decisions with consequences that will last for decades are being made based on revenue projections that lack a publicly available and verifiable methodological basis. This study aims to provide that foundation.

1.2 Empirical Contribution

A discounted cash flow (DCF) model for the Coral Sul FLNG project was developed based on the terms of the Area 4 Exploration and Production Concession Agreement (CCPP, 2006), which is publicly available and adjusted using historical data on actual tax revenues published by the Mozambican government in the Report and Opinion on the General State Account (RPCGE) for the fiscal years 2022 to 2025, as well as on the official website of the Mozambique Sovereign Fund (FSM).

Historical adjustment is the methodological element that distinguishes this study from previous projections. The model replicates historical fiscal flows with a variance of less than 2%, meaning that its projections for 2026–2048 are based on empirical data that can be examined, replicated, and challenged. To the best of the authors' knowledge, this is not a feature of any other public revenue projection for Coral Sul FLNG available as of March 2026.

The model operates under three LNG price scenarios: stress ($8/MMBtu), baseline ($12/MMBtu), and optimistic ($16/MMBtu), representing a range of market conditions consistent with the International Energy Agency's projections for the 2025–2048 horizon. The adjustment data are derived entirely from public sources: the FSM, the RPCGE, reports from the Institute for the Management of State Holdings (IGEPE), data from the National Statistics Institute (INE) and the Bank of Mozambique (BdM), and public contractual documents from CCPP Area 4.

There are at least three previous public revenue projections for Coral Sul FLNG, with substantially differing results. Hubert (2019), in a study conducted for Oxfam based on the contractual terms of the CCPP Area 4, projected total revenues of approximately $11.5 billion over the project's lifetime, the most accurate independent projection available prior to the start of production. The Mozambican government cited estimates of $16 billion in public communications (ENI, prior to the FID) and figures exceeding $24 billion in ministerial statements. Deloitte (2024) estimated the total value of the Rovuma Basin at $100 billion, a figure that aggregates projects at different stages of development as if they were all in immediate, simultaneous production.

This study differs from those projections in two respects: first, it is the only one that calibrates the model using verified historical data, the actual revenues received by the government between 2022 and 2025, as published in the RPCGE and the FSM, achieving a variance of less than 2% compared to the observed data. This characteristic is not shared by any previously identified public projections; secondly, it breaks down revenues by tax instrument and by year, allowing for an analysis not only of the cumulative total but also of its distribution over time, which, as the results show, is the most analytically relevant aspect for the management of Mozambique's public finances.

The context in which this study is published, a post-election crisis, a debate over the development model, and pressure on the extractive sector, calls for interpretations that must be guarded against. The study does not argue that Mozambique should have left the gas in the ground, nor that Coral Sul was a mistake. The project exists, is operational, and generates actual revenue for the government. The argument is

more precise: the contractual terms under which production takes place and the expectations that have been built around these revenues do not reflect the verifiable fiscal reality. Adjusting them, even without renegotiating existing contracts, is both possible and necessary. Alternative sectors do not replace LNG, but they deserve the same institutional attention that has been systematically directed toward LNG, while cashews, graphite, and renewables have remained underinvested. The findings of this study apply regardless of which party is in power. The timing of revenue collection does not change with elections, and ENH's debt does not disappear with a change in government.

1.3 Structure of the Study

The study is divided into nine sections. Section 2 presents the theoretical framework, the literature on the resource curse, extractive tax regimes, sovereign debt, and the energy transition. Section 3 describes the context of Mozambique's LNG projects and the fiscal framework of the Area 4 EPCC (Exploration and Production Concession Contract). Section 4 details the methodology of the tax model and its assumptions. Section 5 presents the empirical results of revenue projections under three price scenarios, including an analysis of the impact on GDP and exchange rate risk. Section 6 examines ENH's debt and the contingent liabilities of the LNG portfolio. Section 7 examines the opportunity cost of the LNG dependence model for alternative sectors. Section 8 contextualises the findings within the political economy of Mozambican extractivism and identifies opportunities for reform. Section 9 presents the conclusions and operational recommendations, organised by recipient and urgency.

2 THEORETICAL FRAMEWORK

The study of natural resource revenues in developing countries is not a neutral field. It is caught between perspectives that view hydrocarbons as drivers of development and those that see them as sources of fiscal instability, institutional fragility, and obstacles to economic diversification. This section presents the theoretical framework that underpins the empirical analysis in the following sections, situating the case of Mozambique within a broader body of literature without reducing it to a passive case of structural determinism.

The framework draws on four complementary theoretical frameworks: (i) the literature on the resource curse and its mechanisms; (ii) the political economy of extractive fiscal regimes; (iii) the link between sovereign debt and hydrocarbon revenue expectations; and (iv) the implications of the global energy transition for new LNG exporters in Africa.

2.1 The Resource Curse Revisited

The proposition that an abundance of natural resources tends to lead to negative economic and political outcomes, commonly referred to as the "resource curse" or the "abundance paradox", has been one of the most fruitful and hotly debated topics in development economics over the past three decades. Its seminal formulation by Sachs and Warner (1995) identified a negative correlation between resource dependence and economic growth across a broad sample of countries, attributing this effect primarily to the so-called Dutch disease: the appreciation of the real exchange rate associated with resource exports, which erodes the competitiveness of the manufacturing sector and other internationally tradable goods.

Van der Ploeg (2011), in a comprehensive review of the empirical literature, consolidated and expanded upon this argument. His analysis identifies multiple channels through which an abundance of resources can undermine development: *i)* currency appreciation and deindustrialisation; *ii)* the intensification of rent-seeking and civil conflict in contexts of fragile institutions; *iii)* the induction of short-sighted policies in presidential democracies; and *iv)* the structural inability to convert exhaustible resources into other productive assets. Crucially, van der Ploeg (2011) emphasises that none of these outcomes is deterministic; what countries do with their resources and the quality of the institutions that manage that wealth, decisively shape the results.

> **The resource curse is not an inevitable fate. Rather, it is a description of a set of mechanisms that tend to produce negative outcomes in the absence of robust institutions, fiscal transparency and long-term planning. Mozambique is not doomed, but it faces precisely the conditions that the literature identifies as high-risk: institutions still in the process of consolidation, high sovereign debt and contracts negotiated under conditions of information asymmetry.**

A key contribution of this literature is the distinction between resource abundance (measured by reserves or per capita underground wealth) and resource dependence (measured by the share of resources in exports or tax revenues). Empirical evidence suggests that it is dependence, rather than abundance itself, that is the most robust risk factor (Van der Ploeg, 2011; Collier & Venables, 2011). This distinction has direct implications for Mozambique. The question is not whether the country has natural gas, but rather to what extent the development model adopted creates a dependence on LNG

revenues before those revenues materialise in any significant way, and what happens to the government and public finances during that interim period.

The most recent literature introduces additional nuances. Research based on natural quasi-experiments (oil and gas discoveries as exogenous events) has found heterogeneous effects. In countries with strong pre-existing institutions, these findings tend to improve development indicators, but in countries with weak institutions, the effects are predominantly negative or nil (van der Ploeg & Poelhekke, 2017). This heterogeneity does not invalidate the analytical concerns of this study; rather, it reinforces them by emphasising that the results depend on the institutional and fiscal framework that creates a balance between resources and citizens.

2.2 The Political Economy of Rent-Sharing

The fiscal regime of an extractive project, the coordinated set of instruments that determine how gross revenues are distributed among the host state, concessionaires and other stakeholders, is the central mechanism through which a natural resource may or may not translate into public benefit. The literature on extractive economics identifies a set of principles that characterise the most effective tax regimes from the point of view of the government: progressivity (capturing an increasing share of economic income as profitability rises), neutrality (no distortion of investment and production decisions), and resilience to price volatility (a steady revenue stream even in low-price scenarios).

These three principles are often at odds with one another. Progressivity, which is desirable for the government, requires mechanisms such as the R-factor or Profit Oil sharing brackets indexed to the project's profitability, which, by definition, defer maximum tax revenues to the later stages of the project's life cycle. Resilience to volatility, which is equally important, suggests instruments with a broad and predictable tax base (such as royalties), which are regressive by nature. There is no one-size-fits-all solution to this tension; it reflects negotiations between the host country and investors regarding the allocation of risk and returns over time.

2.2.1 The Problem of Negotiation under Conditions of Asymmetry

Collier (2010), in an analysis that remains relevant, argues that the negotiation of extractive contracts in developing countries faces a structural asymmetry. Multinational companies have a much better understanding of the true value of resources than host governments, and contracts are often signed before discoveries reveal their actual scale. The result tends to be contracts that are rational from the government's perspective at the time of signing, given the exploration risks and capital costs, but which gradually prove to be unfavourable as uncertainties are resolved.

This mechanism lies at the heart of the problem that this study examines in the case of Coral Sul FLNG. The Area 4 CCPP was negotiated in 2006, prior to the major discoveries in the Rovuma region. Its terms reflect the exploratory uncertainty of 2006, not the production reality of 2022. This does not imply bad faith on the part of either party, but it does mean that the Mozambican government must now manage revenue expectations based on projections derived from a tax regime designed for circumstances that no longer exist.

2.2.2 Rear-Loading and the Timing Problem

A central concept in the analysis of extractive tax regimes is that of the "rear-loaded structure" (Hubert, 2019; Daniel, Keen & McPherson, 2010), the tendency for the most substantial tax revenues to accumulate in the second half of a project's productive life, after the investor has recouped capital costs. This feature is common to production-sharing agreements, such as the Coral Sul agreement, where the instruments with the greatest fiscal impact, Profit Oil and the IRPC, depend directly on the investor's taxable profit, which only materialises after the investment has been amortised.

For a country like Mozambique, whose financing needs are immediate and whose sovereign debt was partly incurred based on expectations of future LNG revenues, the rear-loaded nature of the tax regime creates a temporal imbalance between present obligations (debt service) and future cash flows (substantial tax revenues). This mismatch is not merely an accounting issue; it is a potential source of macroeconomic vulnerability, well documented in the literature on sovereign debt crises in resource-dependent economies (Mihalyi & Omatsola, 2019).

2.3 Sovereign Debt and Expectations of Hydrocarbon Revenues

The relationship between the discovery of natural resources and sovereign debt trends is a growing area of research. The theoretical logic is seemingly simple. The discovery of hydrocarbons is expected to increase the state's wealth, which should reduce sovereign risk and increase its borrowing capacity. In practice, this approach has led to problematic outcomes in many African contexts.

Mihalyi and Omatsola (2019), in an analysis of eleven African oil- and gas-producing countries, document a recurring pattern. The discovery of new resources leads to substantial increases in sovereign debt, often based on optimistic revenue projections that do not materialise at the expected time. The result is an increase in sovereign risk precisely at a time when tax revenues should be justifying the debt incurred, but are still tied up in the investors' cost recovery period. The authors refer to this phenomenon as the "income anticipation trap." Countries go into debt based on future revenues that arrive late, in smaller amounts than projected, or simply do not materialise at all.

The case of Mozambique exhibits characteristics that make it a prime example of this trap. The Eurobonds issued from 2013 onwards, including those linked to the infamous hidden debt scandal, were partly justified by the expectation of LNG revenues. The restructuring of Mozambique's sovereign debt in 2019–2023 took place at a time when the only project in operation, Coral Sul FLNG, was generating tax revenues of less than $100 million per year – a very small fraction of the amounts needed to service the debt. This situation is not an exception to the norm; it is exactly what the literature predicts for countries with rear-loaded tax systems and revenue expectations that are not aligned with the actual timing of cash flows.

> **The theoretical trap identified by Mihalyi and Omatsola (2019) is clearly evident in the case of Mozambique: between 2022 and 2026, the Coral Sul FLNG project generated total tax revenues of approximately $253 million, about 5.4% of Mozambique's stock of domestic and external public debt in 2023 (IMF, 2024). The promise of LNG as a fiscal anchor has materialised, but it has come too late, in smaller volumes, and with a cost structure that reduces the net benefits to the state.**

2.4 Energy Transition and Stranded Assets

A relatively recent development in the literature that is becoming increasingly relevant to the analysis of the Mozambican case is the issue of stranded assets, associated with the global energy transition. The stranded assets hypothesis, as articulated by Caldecott et al. (2013) and further developed by numerous subsequent authors, posits that the decarbonisation of the global economy, if pursued on a trajectory consistent with the goals of the Paris Agreement, will result in the premature depreciation of a significant portion of existing fossil fuel assets, including natural gas reserves that will never be extracted and infrastructure that will not recoup its investment.

The International Energy Agency (IEA, 2024a), in its most recent *World Energy Outlook* (2024), projects that global LNG export capacity will increase by about 50% by 2030, driven primarily by projects in the United States and Qatar. This expansion of supply, combined with slowing gas demand in the major importing markets (Europe and China, both of which are accelerating the transition to renewable energy), points to a structural surplus of LNG capacity starting in the mid-2020s.

The International Institute for Sustainable Development (IISD, 2024) specifically analyses the implications for African producers, concluding that new entrants, such as Mozambique, with relatively high operating costs, face an increased risk of failing to recoup their investment in low-price scenarios, precisely the stress scenario of $8/MMBtu that this model considers.

2.4.1 LNG as a Transition Fuel

The narrative that justifies new LNG projects in Africa as "transition fuels", necessary to support the decarbonisation of developing countries and replace coal in electricity generation, has been actively promoted by oil companies and some exporting governments. Its empirical validity is, however, increasingly being questioned.

The IEA (2024a) is explicit. In scenarios that limit warming to 1.5°C (NZE)[3] and 1.7°C (APS)[4], existing and under-construction LNG capacity is sufficient until 2040, and no new projects are needed. Even under the scenario based on announced policies (STEPS, consistent with 2.4°C of warming)[5], there is no need for new LNG capacity until at least 2040. The narrative of LNG as a transition fuel is therefore compatible only with global warming trajectories that undermine the goals of the Paris Agreement, creating a fundamental tension between the rhetoric of a just transition and the investment logic of projects currently under development.

For Mozambique, this tension has direct implications. The argument put forward in this study is not that the Coral Sul FLNG project is immediately a stranded asset. The project is up and running, and its long-term sales contracts provide some protection against spot price volatility[6]. The argument is more precise: projects not yet in production (Rovuma LNG, future expansions) face a growing risk of stranded

[3]NZE – Net Zero Emissions by 2050, the most ambitious scenario. It outlines the trajectory needed to limit global warming to 1.5°C, with net-zero emissions by 2050. It would entail a very sharp drop in demand for fossil fuels, including natural gas.
[4]APS – Announced Pledges Scenario, intermediate scenario. It assumes that all climate commitments announced by governments (including targets for carbon neutrality) are fully and timely met. Compatible with 1.7°C of global warming. More realistic than the NZE but still more ambitious than the policies currently in place.
[5]STEPS – Stated Policies Scenario – the most conservative of the three scenarios. It reflects only the energy and climate policies that have already been formally adopted and are currently being implemented; it does not include future commitments or stated targets, but only those currently in effect. Consistent with a 2.4°C of global warming, and therefore above the Paris Agreement limit.
[6]The spot price refers to the current market price for the immediate purchase or sale of a commodity, with physical delivery within a short period of time (usually 48 to 72 hours). This contrasts with forward or futures contracts, which set prices for future deliveries. In the LNG market, spot prices are particularly volatile, responding to immediate fluctuations in supply and demand, geopolitical events, or extreme weather conditions, unlike long-term contracts, which typically index LNG to the price of oil or gas at European or Asian hubs.

assets, and the continued reliance on the LNG model as a development strategy jeopardises the window of opportunity for economic diversification, while tax revenues remain modest.

2.5 Political Economy, Fiscal Legitimacy, and Extractivism

One aspect that is often overlooked in technical analyses of extractive tax regimes is the political economy that gives rise to and sustains them. The relevant question is not merely "how much the government receives," but also "what interests shape the narrative regarding what the government can expect to receive" and "what are the political consequences of a tax structure that systematically benefits investors during the first half of a project's productive life."

Prichard (2015), in the most systematic analysis available on the association between taxation and political accountability in sub-Saharan Africa, develops the concept of the "fiscal contract" as the basis for the relationship between the state and its citizens. When citizens pay taxes, they have an incentive to hold the government accountable. When the state does not rely on taxes from its citizens, because it finances its budget through extractive revenues, the incentive for political accountability weakens. This logic, articulated in classical terms by Tilly (1990), has direct relevance to the Mozambican case. To the extent that LNG revenues replace domestic taxation as a source of public funding, the mechanisms underpinning the fiscal contract between the state and its citizens are potentially undermined.

The issue of the political legitimacy of extractivism is particularly relevant in Cabo Delgado, the province where the LNG projects are located. The insurgency that broke out in 2017, leading to the suspension of onshore projects, has complex roots that extend beyond the extractive sector. However, available research (Human Rights Watch, 2021; Morier-Genoud, 2020) documents that the perception that local communities are being excluded from the benefits of LNG projects fuels narratives of resentment that create conditions conducive to recruitment by armed groups. The tax regime, which concentrates benefits in the second half of the project's operational life and, as this study demonstrates, generates modest revenues for the government even under the baseline scenario, does not provide sufficient resources to address these local development needs in a timely manner.

2.6 The Four Theoretical Propositions Guiding the Analysis

The theoretical framework presented in the preceding sections supports four analytical propositions that guide the empirical research in the following sections:

Proposal 1 - Temporal disparity: The rear-loaded structure of the CCPP tax regime, Area 4, creates an imbalance between the Mozambican government's current debt obligations and Coral Sul FLNG's future tax revenues. This discrepancy is measurable, and its magnitude is politically significant.

Proposal 2 - Contingent liability: ENH's participation in the Area 4 consortium, structured as carried interest with debt of $1.356 billion, turns the government's stake in the project into a quasi-sovereign liability that will consume potential dividends until at least 2033, thereby reducing the government's actual net benefit.

Proposal 3 - Risk of stranded assets: The projected structural excess LNG capacity for the second half of the 2020s (IEA, 2024a) poses a growing price risk for projects not yet in production, undermining the long-term revenue projections that justify the Mozambican government's fiscal exposure.

Proposal 4 - Opportunity cost: The continued reliance on the LNG model as a development strategy entails quantifiable opportunity costs in alternative sectors – renewable energy, agro-industry and critical minerals – which the literature on economic diversification identifies as being more compatible with sustainable development trajectories and less vulnerable to the volatility of global commodity prices.

> **These four propositions are not assertions about the inevitability of negative outcomes; they are analytical hypotheses that can be verified using the available data. The empirical contribution of this study lies precisely in quantifying the magnitude of each of them, basing the arguments on evidence that can be examined, replicated and challenged.**

3 CONTEXT AND TAX REGIME OF LNG IN MOZAMBIQUE

3.1 LNG Projects in Rovuma

The Rovuma Basin, in the far north of Mozambique, is home to some of the world's largest natural gas discoveries of the past decade. With estimated reserves of over 5 trillion cubic metres, the Rovuma field has positioned Mozambique among the countries with the greatest gas potential worldwide. However, the public narrative that characterise these resources as a guarantee of economic transformation rarely distinguishes the radically different nature of the projects that will exploit them.

There are currently four LNG projects at various stages of development in Rovuma, each with distinct technical, financial and fiscal characteristics. This distinction is not merely technical; it has direct implications for the timing, scale and predictability of the tax revenues the Mozambican government can expect.

Table 3-1: The Four Rovuma LNG Projects: Current Status (March 2026)

Project	Area	Operator	Type	Current Status (March 2026)
Coral Sul FLNG	Area 4	ENI / MRV	Offshore FLNG (approx. (2,000 m)	OPERATING since Oct. 2022. Capacity: 3.4 MTPA. The only project currently generating tax revenue. Expansion (Coral Norte) with FID approved in October 2025.
Coral Norte FLNG	Area 4	ENI / MRV	Offshore FLNG (expansion)	FID approved in October, 2025. Investment: $7.2 billion. EPCI contract signed (TechnipFMC). First LNG expected: Second quarter of 2028. Source: ENI (2025).
Rovuma LNG	Area 4 (*onshore*)	ExxonMobil / MRV	*Onshore* - Afungi	Force majeure lifted in November 2025. FID scheduled for 2026 – not yet made. First exports are projected for 2030. Note: This is the third postponement of the FID in five years.
Mozambique LNG	Area 1	TotalEnergies (26.5%)	*Onshore* - Afungi	Force majeure lifted on 7 Nov. 2025. Formal restart announced on Jan. 29 2026 (Afungi, with Pres. Chapo). Current progress: 40%. First LNG: 2029. FID base cost: $20 billion. Costs claimed during force majeure: $4.5 billion – subject to an independent audit as required by Resolution No. 42/2025 of the Council of Ministers.

Sources: ENI (2022, 2024, 2025); TotalEnergies, Press Release (January 29, 2026); Resolution No. 42/2025 of the Council of Ministers of Mozambique (November 19, 2025); TechnipFMC (2025).

> **The Coral Sul FLNG project is the only project currently in production and, therefore, the only source of tax revenue from the LNG sector for the Mozambican government. This study focuses exclusively on this project. The resumption of the onshore projects – Mozambique LNG and Rovuma LNG – is a recent and positive development, but their tax contribution to the Mozambican government remains uncertain in terms of amount and is deferred over time, for the reasons analysed in detail below.**

This distinction is essential for two reasons. Firstly, the optimistic revenue projections circulating in the public domain; for example, Deloitte (2024) estimates $100 billion in revenue over the lifetime of the Rovuma Basin projects[7]. The government, for its part, claims that gas from Coral Sul will generate "more than $16 billion"[8], Mozambique LNG "more than $35 billion"[9] , and Coral Norte "more than $23

[7]Club of Mozambique. (April 11, 2025). The Mozambican government expects to collect $23 billion from a new gas platform. Available at: https://clubofmozambique.com/news/mozambique-government-expects-to-collect-23b-from-new-gas-platform/. Accessed on March 6, 2026.
[8]MZNews. (July 10, 2025). Coral Sul: Mozambique could generate $16 million in tax revenue over 30 years. Available at: https://mznews.co.mz/coral-sul-mocambique-podera-encaixar-16-mm-em-receitas-fiscais-em-30-anos/. Accessed on March 6, 2026.
[9]Mozambique News Agency (AIM). (January 29, 2026). Mozambique could generate more than $35 billion from the Mozambique LNG project. Available at: https://aimnews.org/2026/01/29/mocambique-podera-arrecadar-mais-de-35-bilioes-de-dolares-com-o-mozambique-lng/. Accessed on March 6, 2026.

billion"[10]over the lifetime of the projects. These estimates aggregate all projects as if they were in simultaneous and immediate production. Secondly, the distinction between offshore and onshore projects is operationally relevant. The insurgency in Cabo Delgado, which led to the declaration of force majeure at Mozambique LNG in 2021 and continues to affect the security environment surrounding the onshore projects, does not affect Coral Sul FLNG and Coral Norte FLNG, whose infrastructure is exclusively offshore and operationally isolated. Confusing these projects, as frequently occurs in media coverage and advocacy documents, undermines analytical credibility.

3.1.1 Mozambique LNG and the Issue of Force Majeure Costs

The restart of Mozambique LNG operations deserves specific analysis due to its fiscal implications, which go beyond the mere return to production activities. The project was designed with a development cost of $20 billion at the time of the final investment decision (FID). During the force majeure period (2021–2025), TotalEnergies and the consortium incurred additional costs of $4.5 billion, which they claim as recoverable costs under the terms of the Area 1 Production Sharing Agreement (PSA).

The Council of Ministers issued Resolution No. 42/2025, dated November 19, 2025, in response, which determines an independent audit of these costs prior to their approval. Article 4 of this Resolution is particularly significant. It stipulates that the validation of costs must reflect "the revenue levels for both parties" and "safeguard the national interest", a formulation that signals the government's intention to challenge, at least in part, the recoverability of these costs.

> **If the $4.5 billion in costs claimed during the force majeure period are deemed fully recoverable, the total cost of Mozambique LNG will amount to $24.5 billion, an increase of 22.5% compared to the original FID cost. Under a production-sharing arrangement with a 75% cost recovery limit, this increase could potentially push the timeline for substantial Profit Oil and IRPC payments to the State beyond 2040. The outcome of the audit mandated by Resolution 42/2025 is therefore one of the most significant fiscal variables for the medium-term prospects of Mozambique's public finances, and the fact that it remains unresolved is, in itself, an indicator of the fiscal risk that this study seeks to document.**

3.2 The Fiscal Structure of the Area 4 Contract

The tax regime governing the Coral Sul FLNG project is established by the Area 4 Exploration and Production Concession Agreement (CCPP), signed in December 2006 between the Mozambican government, represented by the Ministry of Mineral Resources (MIREME), ENI East Africa S.p.A. and the National Hydrocarbons Company (ENH). This contract was signed prior to the major gas discoveries in the Rovuma region, which took place between 2011 and 2014; this means that its terms were negotiated at a time of high exploratory uncertainty and, consequently, reflect a risk allocation that favours the investor.

The contract is public and available on the official websites of MIREME and INP. Supplementary Agreements to CCPP I and II were subsequently negotiated, but, according to the analysis conducted, they did not alter the core tax terms. The tax regime of the CCPP Area 4 is structured around six main

[10]Club of Mozambique. (April 11, 2025). The Mozambican government expects to collect $23 billion from a new gas platform. Available at: https://clubofmozambique.com/news/mozambique-government-expects-to-collect-23b-from-new-gas-platform/. Accessed on March 6, 2026.

instruments, the combined operation of which determines the actual distribution of revenues between the State and investors.

Table 3-2- CCPP Area 4 Tax Instruments and Their Impact on State Revenues

Fiscal Instrument	Rate / Limit	Legal Basis	Nature	Fiscal Impact
IPP (Royalty)	2% of gross production	CCPP Area 4, Art. 9.3; reduced to waters > 500 m	Retroactive; charged prior to cost recovery	The only tool that generates immediate and guaranteed revenue. Between 2022 and 2025: $91 million (source: WSF, 2026). Guaranteed cash flow regardless of costs.
Cost Recovery	Limit of 75% of available revenue after royalties	CCPP Section 4, Art. 9.5	Protects investors; postpones Profit Oil	Until the costs are recovered (approx. ($11 billion), 75% of the available revenue goes to the investor. From 2022 to 2026, the state received less than 6% of the gross value of production.
Factor R and Profit Oil	Five categories (R<1 to R≥4): The state receives between 15% and 55% of Profit Oil, depending on the ratio of revenue to investment	CCPP Section 4, Art. 9.10	Progressive; aligned with the project's profitability	A technically sound mechanism, but one that will only generate substantial revenue after the investor's payback (around 2027–2030). The R-factor in 2026 is approximately 0.18; the government receives only 15% of Profit Oil.
IRPC (Income Tax)	24% in the first 8 years of production; 32% thereafter	Mozambique Tax Law and Area 4 Contract	Reduced rate as an incentive; then standard rate	The investor's accumulated tax loss prevents taxation until around 2027. The adjusted model projects IRPC = $0 for 2022–2026. After 2027, it will generate the largest individual cash flow (about 43% of total projected tax revenue).
Production Bonus	A total of $7 million (at the start and at production milestones)	CCPP Section 4, Art. 12	Fixed; not indexed to production or price	Irrelevant given the scale of the project ($9.5 billion in CAPEX). A symbolic figure that should not be included in the article's main arguments.
ENH Share (10%)	Carried interest; debt of $1.356 billion at LIBOR + 1% (6%)	CCPP Area 4, Art. 9.13 and IGEPE 2023	Deferred and indebted State participation	ENH receives 10% of Profit Oil from the investor as dividends, but uses those dividends to pay down its debt of $1.356 billion. Net dividends to the government: zero until around 2033. See Section 6.

The sequential logic of these instruments is fundamental to understanding the core fiscal problem. The structure of CCPP Area 4 was designed to attract investment in a context of high exploratory risk, ensuring that investors fully recover their costs before the government receives substantial tax revenues. This approach, technically referred to as a "rear-loaded revenue structure" in the literature on extractive economics, has a defensible economic rationale at the time the contract is signed, but produces effects that warrant scrutiny when analysed in retrospect.

3.3 ENH's Carried Interest Structure

The National Hydrocarbons Company (ENH), a state-owned enterprise that represents the Mozambican government in the extractive sector, holds a 10% stake in the Area 4 consortium. At first glance, this share represents a mechanism through which the government directly benefits from the project's profits, serving as a supplement to conventional tax revenues.

The debt generated by this mechanism has a scale and repayment structure that makes it a quasi-sovereign liability of macroeconomic significance. Its breakdown between operating debt and development debt, the applicable interest rate, and the total amount reported by IGEPE are presented in

Section 5.6, which also projects the repayment schedule and expected net dividends for the three LNG price scenarios.

The repayment mechanism for this debt is entirely dependent on the dividends that ENH receives as the holder of a 10% stake in Profit Oil from investors; these dividends, in turn, are only paid out after the R Factor exceeds the threshold of 1 and all accumulated debt has been repaid. A quantitative analysis of this mechanism and the projected trajectory of net dividends are presented in Section 5.6, based on the tax model adjusted using observed historical data.

In structural terms, ENH's 10% stake is both an asset (entitling it to future dividends and a say in the consortium) and a liability (a carried interest debt that takes precedence over any net return). The ratio between these two sides of the balance sheet, and the period during which liabilities exceed assets, depends on the LNG price, the production curve and the amortisation terms set forth in the Joint Operations Agreement. Section 5.6 quantifies this proportion for three price scenarios.

3.4 The Concept of Government Take: Two Metrics, One Discrepancy

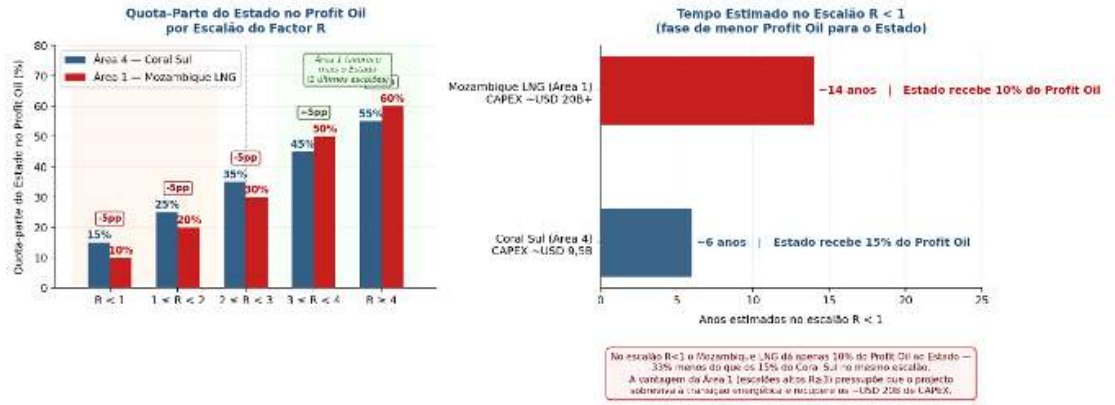
The concept of government take, the proportion of an extractive project's gross revenues that flows to the state, including taxes, royalties and state equity, is the standard metric in the literature on extractive economics for assessing the equity of a fiscal regime.

In the case of the Coral Sul project, the contractual structure establishes a state share through ENH and tax revenues, which, at first glance, suggests a balanced distribution of gains. The revenue-sharing arrangement set forth in the concession agreement, combined with corporate taxes and other levies, points to an apparently reasonable arrangement.

What the quantitative analysis reveals, developed in Section 5.5 based on the fiscal model adjusted with historical data from the FSM and RPCGE for 2022-2025, is that the actual government take, calculated on the project's total gross revenues over its life cycle, is substantially lower than the declared take. This difference has direct implications for the debate over the adequacy of the tax regime and the need for contractual renegotiation.

This discrepancy is not contradictory; it reflects the difference between the government take calculated on revenue after costs (an industry metric that favours investors) and the government take calculated on gross revenue (a more relevant metric for assessing the macroeconomic benefit to the country). The preference for the gross revenue metric is based on the theory of economic rent, according to which the State, as the owner of the natural resource, is entitled to the entire value generated by its exploitation, regardless of the investor's operating costs (Boadway & Keen, 2010; Daniel et al., 2010). In addition, empirical analyses demonstrate that the government take calculated on a net basis tends to overestimate the effective rent capture by the State, as it fails to account for international tax planning structures and information asymmetries in cost accounting (Commonwealth Secretariat, 2021). A comparison with similar countries makes this difference even more evident.

Figure 3-1: R-factor: Comparison: CCPP Area 4 (South Coral) vs. CCPP Area 1 (Mozambique LNG)



Source: CCPP Area 4 (2006), Art. 9.10; CCPP Area 1 (2006), Art. 9.10

The effective government take, as calculated in this model, is based on gross revenue rather than revenue after costs. The difference between the two metrics reflects the weight of recoverable costs. In a capital-intensive project such as the Coral Sul FLNG, with a CAPEX of $9.5 billion, cost recovery accounts for a significant portion of revenues during the first years of production. Section 5.5 quantifies the precise impact of this difference and presents a comparison with international benchmarks.

This distinction has direct implications for the policy debate: when citing a high government take for the Coral Sul FLNG, it is necessary to ask on what basis it is calculated. The response substantially alters the context and implications for contract renegotiation and for comparisons with other producing countries. Section 5.5 develops this analysis with data.

3.5 The Evolution of Contracts: Three Generations of Contracts, Three Moments of Negotiating Power

A comparative analysis of the fiscal parameters between the three distinct contractual phases in Mozambique's hydrocarbons sector: the Sasol/Area A contract (2005, onshore), the Area 1 and 4 contracts (2006, deep offshore), and the contracts from the 6th Licensing Round (2024), provides direct evidence of the evolution of the State's negotiating power over nearly two decades (INP, 2024).

The comparison of royalties (IPP) requires a preliminary methodological clarification. The contracts for Areas 1 and 4 (2006) were entered into pursuant to Decree No. 19/04 of June 2 (Regulation on the Tax on Oil Production)[11], which established different rates based on depth: 5% (onshore gas), 4% (gas <100 m), 3% (gas 100–500 m), and 2% (gas ≥500 m). Coral Sul field is at a depth of about 2,000 metres, which justifies the 2% rate as a risk premium for ultra-deep waters, rather than an arbitrary concession.

The Sasol/Area A contract (2005, onshore) applies a 6% rate for natural gas, under the same legislation, reflecting the much lower risk profile of onshore gas, already proven in the Rovuma Basin. Law No. 27/2014, of September 23 (Legal Framework for the Taxation and Tax Benefits Regime for Petroleum Operations), which governs the contracts of the 6th, established in Article 10 a uniform rate of 6% for natural gas and 10% for crude oil, eliminating the differentiation by depth as an incentive mechanism and standardising the royalty regardless of the geological risk profile. In comparative terms, Coral Sul

[11]Revoked by Law No. 27/2014 of September 23, which establishes the legal framework for taxation and tax incentives for petroleum operations.

would currently pay a 6% royalty instead of 2%, a difference of three times that, over 27 years under the baseline scenario, would represent approximately an additional $2.419 billion in immediate revenue for the state.

The cost recovery limit is the second parameter with the greatest structural impact. The Sasol/Area A contract (2005) is the most favourable to the state, at just 50%, which means that at least half of the gross revenues go toward profit oil in any given year of production. The contracts for Areas 1 and 4 (2006) set the rates at 75% and 65%, respectively; in a project with $11 billion in recoverable costs (RPCGE 2024, Table V.13), these figures imply that up to three-quarters of gross revenues can be absorbed before any sharing of profit oil. Law No. 27/2014 set the rate at 60% for the 2024 contracts, a modest improvement compared to Areas 1 and 4, but still above the onshore limit in the Sasol contract. The difference between the 75% threshold in Area 4 and the 50% threshold at Sasol clearly illustrates how geological risk and the type of resource continue to dictate the terms, even after two decades of accumulated institutional experience.

Factor R reveals the most complex pattern. The Sasol/Area A contract (2005) is the most favourable to the state in every respect: 20% for $R < 1$, rising to 80% for $R \geq 3$. This is proven onshore gas with minimal geological risk, which explains, though does not fully justify, the higher state share. The contracts for Areas 1 and 4 (2006) are the least favourable in the initial brackets: only 15% and 10%, respectively, for $R<1$, with maximums of 55% and 60% for $R\geq4$. Law No. 27/2014 (Art. 32) introduced improvements to the intermediate brackets: 50% for R between 2 and 2.5, and 60% for $R \geq 2.5$, reaching the maximum tier sooner than in the 2006 contracts. However, the initial rate remains at 15% for $R<1$, identical to Area 4, which is critical because the R-factor for the Southern Coral remained below 1 during the first years of production, a period in which the state's profit oil revenue was structurally minimal.

ENH's performance has improved significantly, though not uniformly. The Sasol/Area A contract provides for a 30% working interest for ENH under a production-sharing arrangement. Under the 2006 contracts, ENH holds a 10% stake (Area 4) and a 15% stake (Area 1) under a carried interest arrangement financed by the concessionaires. In the 2024 contracts, the equity stake ranges from 22.5% (A6D, A6E, and S6B, CNOOC) to 40% (A6C, ENI), with financing at a rate of SOFR+1% instead of LIBOR+1%. The nominal increase is clear, but its translation into actual revenue for the government will depend, as in the case of Coral Sul, on the dynamics of the R-factor, the total recoverable cost, and the timing of the amortisation of the carried interest debt, which will be proportionally higher.

Production bonuses provide a more direct illustration of the progress of negotiations. The production start-up bonus for Area 4 is $1 million; the Sasol contract provides for $1 million under the same conditions. In the A6D and S6B contracts (CNOOC, 2024), this bonus was increased to $20 million, a twenty-fold increase. The estimated total bonuses over the project's lifetime have risen from $7 million (Area 4) to $35 million or more in the most recent contracts. Although bonuses account for only a marginal portion of total lifetime revenue, their size highlights the difference in negotiating power between the three historical periods.

Interpreting this development requires a significant analytical approach. The differences between contract generations reflect both the government's greater negotiating and institutional maturity and actual differences in the risk profile of the resources. Sasol's onshore gas project in 2005 had residual geological risk. The 2006 offshore contracts were negotiated before the major discoveries in the Rovuma Basin, without any institutional experience in ultra-deep water LNG. The 2024 contracts refer to the areas with distinct risk profiles and potential, within a very different market and institutional context. What this comparison clearly shows is not that the government was taken advantage in the 2006

negotiations, but rather that the contracts signed at that historic moment will remain unchanged until 2047–2052, with no provisions for periodic review that would allow the government to capture a growing share of the revenues as project risk decreases and institutional experience increases. The politically relevant issue is precisely this lack of adjustment mechanisms, not the contractual history itself.

Table 3-3: Comparison of Fiscal Indicators: Three Generations of Hydrocarbon Contracts in Mozambique (2005–2024)

Parameter	Area A / Sasol (2005 Onshore)	Area 4 / MRV (2006 - Offshore ≥500 m)	Area 1 / Total (2006 - Offshore)	6th Round of the A6C ENI (2024)	6th Round A6D/S6B CNOOC (2024)	Legal Basis
Royalty IPP - Gas	6% (onshore)	2% (≥500 m)	2% (≥500 m)	6% (flat rate)	6% (flat rate)	Decree 19/04; Art. 10 of Law 27/2014
Royalty IPP - Crude Oil	8% (onshore)	3% (≥500 m)	3% (≥500 m)	10% (flat rate)	10% (flat rate)	Decree April 19; Art. 10 of Law 27/2014
Cost Recovery Limit	50%	75%	65%	60%	60%	Contracts; Art. 31 of Law 27/2014
CAPEX Amortisation (max.)	25% per year	25% per year	25% per year	25% per year	25% per year	Contracts; Art. 23 of Law 27/2014
Profit Oil R<1 (State share)	20%	15%	10%	15%	15%	Contracts; Art. 32 of Law 27/2014
Profit Oil R ≥ 2.5–3 (state share)	60–80%	35–45%	30–50%	60% (R ≥ 2.5)	60% (R ≥ 2.5)	Contracts; Art. 32 of Law 27/2014
ENH Participation	30% Option (PSA)	10% (carried)	15% (carried)	40% (carried)	22,5% (carried)	Contracts; ENH (2024)
IRPC	32%	32% (24% in the first 8 years)	32% (24% in the first 8 years)	32%	32%	Law 27/2014; Contracts
Deferral losses	5 years	7 years	7 years	5 years	5 years	Contracts; Code IRPC
Production Start Bonus	$1 million	$1 million	$5 million	$2 million	$20 million	Contracts (Art. 12, Section 4)
Fiscal stability	Contractual	Contractual	Contractual	Section 40 of Law 27/2014	Section 40 of Law 27/2014	Law 27/2014; Contracts

Sources: CCPPs in Areas 1, 4, and A (INP, inp.gov.mz); CCPPs A6C, A6D, A6E, S6B (INP, 2024); Law No. 27/2014, Art. 10, 23, 31, 32 (Official Gazette, Series I, No. 76, Sept. 23) (2014); Decree No. 19/04, of June 2 (previous royalty regime). Drafted by the author based on the original contracts.

Table 3-3, presented based on an analysis of the contracts available at the INP (INP, 2024), summarises this comparison among the three generations of contracts. The terms of the Coral Sul contract are the result of a specific historical moment that the 2014 reform and accumulated experience made it possible to overcome in subsequent contracts; however, due to their contractual irreversibility, this improvement is analytically relevant only for new projects, notably the Rovuma LNG project, for which the FID has yet to be made.

4 METHODOLOGY

The study combines a literature review of primary sources, quantitative fiscal projections, and a comparative analysis of international benchmarks. Methodological transparency is a central principle of this work. All sources, assumptions and limitations are explicitly documented to enable replication of the analysis and a reasoned challenge of the results.

4.1 General Approach

The study employs a mixed-methods approach that combines three complementary components. The first step is a documentary analysis of primary sources, concession agreements, official reports, tax legislation and public documents from the companies, which provide the contractual and institutional basis for the analysis. The second is quantitative financial projection based on discounted cash flow (DCF), which is described in detail in the following sections. The third is the international comparative analysis and assessment of the opportunity cost of the LNG dependence model, presented in sections 7 and 8.

Methodological priority is given to quantitative evidence derived from verifiable primary sources. The qualitative projections and political economy arguments in Sections 7 and 8 are treated as a complementary analysis, grounded in the quantitative results, rather than as a substitute for them.

It is important to clarify the epistemological nature of the exercise. The fiscal model developed in this study is a contractual simulation, not a forecast. The distinction is substantial. A contractual simulation answers the question: given the terms of the CCPP Area 4 agreement and an assumed price and production trajectory, how much should the government receive each year? A forecast would answer the question: How much will the state receive? The first can be verified by referring to the contract and the observed data, while the second would depend on information about the future that no model can possess. The model presented in this study falls into the first category, and its analytical credibility stems from the accuracy of its replication of historical data (see subsection 4.5) and the transparency of the assumed future parameters (see subsection 4.4).

4.2 Justification of the Analytical Tool (The DCF Model)

Several analytical tools can be used to model tax revenues from extractive projects, each with its own specific advantages and limitations. There are three main types: computable general equilibrium (CGE) models, econometric time-series models, and discounted cash flow (DCF) models. The choice between them is not insignificant; it determines the types of questions the model can answer and the conditions under which its conclusions are valid.

CGE models capture the second-order macroeconomic effects of extractive revenues, including impacts on the exchange rate, sectoral employment, inflation, and income distribution. They are powerful tools for analysing the mechanisms of the Dutch disease and the crowding-out effects of megaprojects on alternative sectors. Their weakness in this context is twofold: they require data from social accounting matrices that are not available with the necessary level of detail for Mozambique, and they do not allow for the disaggregation of tax revenues by specific contractual instrument, which is precisely what this study requires.

Time-series econometric models estimate historical relationships between variables and extrapolate them into the future. They are useful when there is a long and stable time series. In the case of the Coral Sul FLNG project, with only three full years of production data (2022–2024) and a tax structure that changes fundamentally over the project's lifecycle, with the sequential activation of the Oil Production Tax (IPP), Profit Oil, the Corporate Income Tax (IRPC), and ENH dividends, the econometric extrapolation would produce projections without a verifiable contractual basis.

The DCF model, as applied to the extractive economy, is the standard tool in the specialised literature (Daniel, Keen & McPherson, 2010; Boadway & Keen, 2010; Commonwealth Secretariat, 2021) precisely because it replicates the contractual logic of the project, year by year, based on the terms of the CCPP, determining how gross revenues are allocated among cost recovery, profit oil, taxes and state participation. This direct correspondence between the model and the contract is its main analytical advantage, and it is what allows the model to be adjusted using verified historical data and its assumptions to be publicly challenged.

The weaknesses of the DCF in this context are equally well known. First, it assumes that the contractual terms are fixed, which is reasonable given that CCPP Area 4 does not provide for periodic review mechanisms, but this leaves the model unable to account for future renegotiations. Second, it uses fixed-price scenarios, a simplification that, as explained in Section 4.3, is deliberate and serves to isolate the effect of price on revenue without introducing arbitrary price paths. Third, it does not capture second-order macroeconomic effects; the impacts on the exchange rate, inflation and alternative sectors are analysed qualitatively in Section 7, not through the DCF model.

The application of the DCF method to the financial analysis of LNG projects in Africa has relevant direct precedents. Hubert (2019) applied this approach to the Southern Coral Reef in an analysis commissioned by Oxfam, arriving at a projection of $11.5 billion. The Natural Resource Governance Institute (NRGI) uses DCF models as a standard tool in its assessments of extractive sector tax regimes in developing countries, including Ghana (Jubilee Field), Tanzania and Uganda. The IMF uses variations of the DCF in its Fiscal Affairs Department Technical Assistance Reports on tax regimes for the extractive industries. The methodological distinction of this study compared to these previous studies is its adjustment using actual historical data, with a variance of less than 2%, as explained in Section 4.5.

4.3 Architecture and Logic of the Fiscal Simulation Model

The analytical core of this study is a fiscal simulation model developed in Microsoft Excel, based on the contractual terms of the CCPP for Area 4 (2006) and adjusted using historical tax revenue data published by the Report and Opinion on the General State Account (RPCGE) and revenue figures published on the website of the Sovereign Fund of Mozambique (FSM) for the years 2022 to 2025. The model follows the standard architecture of discounted cash flow models applied to the extractive economy (Daniel, Keen & McPherson, 2010), adapted to the specific characteristics of Mozambique's production-sharing regime.

4.3.1 OPEX Forecast

One of the recurring points of confusion in tax analyses of extractive projects is the treatment of OPEX. At CCPP Area 4, OPEX is not a strictly technical cost (as understood in corporate accounting) but a contractually defined fiscal figure. This distinction is central to the model's replicability and technical validity.

Annex C of the CCPP (Accounting Procedure), Article 2.3, defines "Recoverable Operating Cost" as including: (a) operation, maintenance and repair of wells and facilities; (b) planning, production, control, measurement, collection, processing, and transportation of oil from the reservoir to the delivery point; (c) balance of General and Administrative (G&A) expenses and costs for services not allocated to the exploration phase; (d) contributions to the Decommissioning Fund pursuant to Art. 2.6.

Since the CCPP establishes ring-fencing at the Area 4 level, with joint recovery of upstream costs (gas production from the reservoir) and midstream (liquefaction at the FLNG unit), the RPCGE consolidates the midstream toll rate within the recoverable upstream operating costs. This is the figure relevant for tax purposes in the tax analysis, and it is the figure reported in Table V.18 of the RPCGE 2024 as "Coral South Project Operating Cost" ($638 million in 2024). The model uses these observed values as an empirical anchor for 2022-2024 and projects 2025-2048 based on a breakdown into a fixed component (62% of OPEX, $395.56 million/year in 2024 real terms) and a variable component (38% of OPEX, $72.80/MT of production in 2024 real terms), anchored to Wood Mackenzie (2020) and OpenOil (2021).

The parameters are adjusted by scenario: the fixed component remains constant (it is a structural cost independent of price), and the variable component is adjusted by ±15% (Stress) and ±10% (Optimistic) to reflect inefficiencies in adverse conditions or efficiencies in favourable conditions.

The methodological implication is that a direct comparison of Coral Sul's OPEX with international FLNG benchmarks in other jurisdictions should be made with caution because different contractual arrangements consolidate upstream and midstream costs differently. The OPEX reported in the RPCGE includes recoverable midstream tolls, which makes it structurally higher than the pure OPEX of an FLNG under a different tax regime. This is also the OPEX used by the INP itself and by the Tax Authority in their cost recovery audits.

4.3.2 Cost Recovery and Tax Depreciation

The model implements two parallel and independent cost-accounting systems, as required by CCPP Area 4. This distinction is technically crucial because it is here that tax models for extractive projects often fall short, conflating cost recovery (a revenue-sharing mechanism) with tax depreciation (the IRPC tax base). The two systems coexist in the contract but operate on different principles.

System 1: Cost Recovery (Section 9.5 and Annex C). All costs incurred in oil operations (exploration, development and operational) are fully recoverable in the year they are incurred, subject only to a limit of 75% of available revenue. When eligible inventory costs exceed 75% of Available Revenue, the difference is carried forward to the following year (deferral), with no time limit. This system is based on the project's cash flows and determines how much of the revenue goes back to the investor to recoup the investment. Implemented in columns I to N of Tab 3 of the form.

System 2: Tax Depreciation (Art. 11.4.a)(ii)(aa)). This applies to the calculation of the IRPC. For tax purposes, these expenses are amortised at specific rates: 100% for operations in the current year; 25% per year for 4 years for development (4 fixed instalments); 100% for operating expenses in the current year. Depreciation begins in the year in which commercial production starts or in the year in which the expense was incurred, whichever is later. Accumulated tax losses (negative taxable income) may be carried forward for up to six years (Art. 11.4.vii). Implemented in column U of Tab 3 of the template.

The key distinction is that the two systems are not to be confused and operate simultaneously. The same amount spent on pre-FID development can be 100% recovered through cost recovery in the first year (if it falls within the 75% limit), but only 25% of it is deductible for IRPC purposes in that same year.

It's not worth it. The tax system recognises only what the depreciation rule allows, regardless of what was actually recovered in cash.

This independence has observable consequences in the model. Between 2022 and 2032, even though the investor is receiving significant cost recovery payments (cost recovery), the IRPC is zero in every year. The reason is that taxable income (Investor Profit + Oil Cost - Tax Depreciation + Carried-Forward Losses) is negative or zero throughout the entire period. Only in 2033, after the cumulative amortisation of pre-FID costs has offset the accumulated taxable income and exhausted the carried-forward losses, will the IRPC begin to generate substantial revenue for the state.

Mathematical confirmation of this consistency lies in the fact that the total accumulated tax depreciation over the 27-year period ($34.64 billion) is exactly equal to the total gross recoverable costs ($34.64 billion). No costs are lost in the tax system; all are eventually recovered, but they are spread out over time in a different way than cash recovery.

4.3.3 Formal Definition of the R Factor

The R Factor is the contractual mechanism that introduces a progressive structure to the sharing of Profit Oil between the State and the investor. Article 9.10 of the CCPP, Section 4, establishes five tiers of state participation based on the value of the R Factor calculated annually: 15% when $R < 1$; 25% when $1 \leq R < 2$; 35% when $2 \leq R < 3$; 45% when $3 \leq R < 4$; and 55% when $R \geq 4$. The formal definition is that the R-factor is the ratio of the investor's cumulative net cash inflows to their cumulative investment, calculated at the end of each year: R(t) = Cumulative Net Inflows to the Investor through year t / Cumulative Investment by the Investor through year t where the components are operationally defined as:

- Investor's Accumulated Net Income = the cumulative sum, year by year, of (Crude Oil Cost + Investor's Profit Oil - IRPC - OPEX paid by the investor). This represents the actual net cash flow received by the investor after all tax obligations for the year have been met.
- Investor's Cumulative Investment = the cumulative sum, year by year, of all capital expenditures (CAPEX) incurred up to year t. Does not include OPEX, which is included in the numerator as a deduction from the inflows.

This definition corresponds exactly to the implementation in columns P (Accumulated Investor Cash Inflows) and Q (R Factor) in Tab 3 of the model. Each cell Q(t) calculates R(t) based on the values accumulated up to the previous cell, using the IF function with the brackets specified in Article 9.10 to determine the government's share for that year.

Contractual nature of the definition

CCPP Area 4 explicitly states that the R Factor is calculated based on the investor's cash inflows, not on the project's gross revenue or accounting profits. This distinction has important analytical implications. Even when the project is generating substantial gross revenue, the R-factor may remain low if recoverable costs (oil costs) have not yet been fully recouped because the investor is still recovering their initial investment. In practical terms, the R-factor is always a lagging indicator relative to physical production. A project may be at the production plateau and still in the initial 15% tier.

Implication observed in the model

The model projects that the R-factor for Coral Sul, under the baseline scenario, will reach a value of 1 for the first time only in 2034, 12 years after the start of commercial production. Over the past 12 years, the state's share has remained at 15%. Starting in 2035, the R Factor rises gradually until it reaches a historic peak of 1.25 in 2043, but never exceeds 2. Consequently, the state remains in the 25% bracket between 2035 and 2048. The top tax brackets of 35%, 45%, and 55% are never applied over the course of the project's 27-year duration. This observation is central to the analysis and is discussed in detail in Section 5 (Results).

The delay in the progressive application of the R Factor is directly linked to the delay observed in the collection of the IRPC. Both are a result of the scale of recoverable costs and pre-FID tax amortisation, which delay the generation of taxable income and substantial net cash inflows. The R Factor and the IRPC are, in this sense, two complementary expressions of the same structural phenomenon: *the* rear-loading of CCPP Area 4.

> **The R-factor is calculated based on the investor's cash inflows – not on the project's gross revenue. This distinction implies that, even when the project is generating substantial gross revenue, the R-factor may remain low if the recoverable costs have not yet been amortised.**

4.3.4 Treatment of the Audit Fee for Recoverable Costs

The model incorporates an audit cost acceptance rate of 99.8%, based on documented audit practices for comparable LNG projects (Commonwealth Secretariat, 2021). This rate reflects the fact that, in practice, oil companies submit detailed documentation of their costs, and regulators rarely reject more than a small fraction of the costs submitted, particularly in jurisdictions with limited technical capacity for independent auditing.

This choice places the model in a conservative framework from the government's perspective. This means that if the Tax Authority and the INP were to reject a larger proportion of the costs submitted by the investor, the Cost Oil would be lower and the Profit Oil (shared with the State) would be higher, thereby increasing actual tax revenues. The opposite is also true: a higher acceptance rate (close to 100%) would marginally reduce government revenue. The figure of 99.8% places the projections at the conservative end of that range, assuming that the government accepts nearly all of the costs submitted. The projected tax revenues therefore represent a reasonable lower bound of what the government could collect under stricter audit assumptions.

The literature shows that in jurisdictions with rigorous auditing (Norway, the United Kingdom), cost rejection rates can reach 2–5%. In contexts where fiscal capacity is limited, they are typically less than 1%. The figure of 99.8% reflects a realistic assessment of Mozambique's current audit capacity, as documented in the Administrative Court of Mozambique (2022–2024) for the RPCGE reports. Institutional reforms that enhance effective auditing capacity, as recommended in Section 9 of this study, could substantially increase the government's tax revenue without any contractual changes.

4.3.5 Calculation Sequence

The model replicates the contractual revenue distribution sequence established in CCPP Area 4, processing the following 14-step flow on a year-by-year basis for each price scenario. Each step corresponds to a column or group of columns in Tab 3 (Cost Recovery and Profit Oil) and Tab 4 (Tax Revenues) of the Excel template.

Step 1 – Annual physical output. Production in millions of tons (MT) year-over-year, with observed figures for 2022–2025 (PESOE and INP) and a projection for the period after 2025, based on a plateau of 3.37 MT between 2026 and 2033, with a decline rate of 8% per year starting in 2034.

Step 2 – Gross Revenue. Gross Revenue = Production (MT) × Conversion Factor (52 MMBtu/ton) × Price (USD/MMBtu). The conversion factor reflects the calorific value of LNG. The price varies by scenario (Stress: $8, Base: $12, Optimistic: $16, or a declining price path in the Energy Transition (ET) scenario).

Step 3 – Royalty (IPP). IPP = 2% × Gross Revenue. An immediate tax levy, applied in accordance with Art. 11.5 of the CCPP (reduced rate for depths ≥ 500 metres). Paid annually in USD to the Tax Authority.

Step 4 – Revenue Available for Cost Recovery. Available Revenue = Gross Revenue − IPP. This is the contractual basis on which the cost recovery mechanism applies (Art. 9.5 of the CCPP).

Step 5 – Recoverable Costs for the Year. Recoverable Costs = Exploration + Development + OPEX. In accordance with Annex C of the CCPP (Articles 2.2 and 2.3), all costs incurred in connection with Petroleum Operations are recoverable, regardless of type.

Step 6 – Post-Audit Costs. Eligible Costs = Recoverable Costs × 99.8%. It reflects the acceptance rate of costs submitted for audit (see subsection 4.3.4).

Step 7 – Stock Eligible for Recovery. Eligible Stock = Unrecovered Balance from the Previous Year + Eligible Costs for the Current Year. Inventory includes costs not recovered in previous years due to the 75% cap (Art. 9.5 of the CCPP).

Step 8 – Effective Cost Oil. Oil Cost = MIN (Eligible Stock; 75% × Available Revenue). The 75% cap is a contractual restriction that limits the rate at which the investor can recoup costs. When Eligible Stock exceeds 75% of Available Revenue, the difference is carried over to the following year.

Step 9 – Total Profit Oil. Total Profit from Oil = Available Revenue - Cost of Oil. This is the amount available to be shared between the government and the investor.

Step 10 – Calculating the R Factor. R Factor = Investor's Cumulative Cash Inflows / Cumulative Investment. Determines the applicable bracket for the distribution of Profit Oil, in accordance with Article 9.10 of the CCPP. See subsection 4.3.3 for a detailed operational definition.

Step 11 – Profit Oil Distribution. State Profit Oil = Total Profit Oil × State Rate (a function of Factor R: 15% if R < 1; 25% if 1≤R < 2; 35% if 2≤R < 3; 45% if 3≤R<4; 55% if R≥4). Profit Oil Investor = Total Profit Oil × (1 − State Bracket).

Step 12 – Tax Depreciation for the Year (Art. 11.4.a)ii)aa)). A system that is separate and independent from cost recovery. For each expense incurred, the following applies: 100% per

year for operations; 25% per year for 4 years for development; 100% per year for OPEX. Depreciation begins in the year in which commercial production begins or in the year the expense is incurred, whichever is later. See subsection 4.3.2 for a detailed discussion.

Step 13 – Taxable Income and Tax Loss. Taxable Income for the Year = Profit + Cost of Goods Sold – Tax Depreciation for the Year + Tax Loss Carried Forward from the Previous Year. If positive, it forms the basis for the IRPC. If negative, it constitutes a tax loss to be carried forward to the following year, subject to the six-year limit established by Article 11.4.vii) of the CCPP.

Step 14 – IRPC. IRPC = Applicable Rate × MAX (0, Taxable Income). The rate is 24% for the first 8 years of commercial production (a 25% tax credit pursuant to Article 11.4.a)(i) of the CCPP) and 32% for subsequent years. The MAX (0,...) function ensures that the IRPC is never negative – losses are carried forward, not retroactively offset.

Steps 10, 12, 13, and 14 are performed in parallel with steps 5 and 9 because cost recovery and IRPC taxation are independent accounting systems within the CCPP. Subsection 4.3.2 clarifies this parallelism. Steps 3, 11, and 14 are then aggregated in Tab 4 of the model to calculate the state's total tax revenue (Royalty + State Profit Oil + IRPC + Bonus). The model generates this sequence for the 27-year production period (2022–2048), enabling analysis of time series and cumulative totals.

4.4 Data Sources

The model incorporates three categories of sources, ranked by priority and verifiability: contract (CCPP Area 4 and Annex C), observed production data, costs and tax revenues for Coral Sul (PESOE, RPCGE, FSM, IGEPE), and technical parameters derived from specialised literature (OpenOil, Wood Mackenzie, Commonwealth Secretariat, IEA). Table 4-1 summarises the sources used for each parameter of the model.

The force majeure costs claimed by TotalEnergies in the Mozambique LNG (Area 1) project are not included in any calculations in the Coral Sul model. Coral Sul operates in Area 4 of the Rovuma Basin, which is a contractually separate project governed by its own Production Sharing Agreement (PSA) and subject to ring-fencing at the Area 4 Concessionaire level. The discussion of Area 1 costs is deferred to Section 6 (Public Debt and Contingent Liabilities of the GNL), which serves to demonstrate that the Rovuma Basin as a whole faces contingent fiscal uncertainties that must be taken into account in fiscal risk analyses of the sector, even when they do not directly affect specific projects.

Table 4-1: Data Sources for the Fiscal Model

Category	Parameter	Source	Note
Contract	Royalty (2%), Cost Recovery (capped at 75%), R Factor (5 tiers), IRPC (24% for the first 8 years, 32% thereafter), tax depreciation (100% for operations and OPEX, 25%/year in 4 instalments for development), tax loss deferral (6 years), ENH carried interest 10%, Bonus ($2M + 5M)	CCPP Area 4 (2006), Articles 9.3, 9.5, 9.10, 9.13, 11.4, 11.5, 12; Annex C (Accounting Procedure), Articles 2.2, 2.3, 2.6	Primary source. Public contract. Supplementary Agreements I and II
Historical production	Production 2022–2026 (13.01 MT cumulative)	PESOE 2025 and PESOE 2026 (INP)	Official data from the National Petroleum Institute.
Historical recoverable costs	Cumulative CAPEX through December 31, 2024: $11.669 billion (exploration $2.172 billion + development $9.497 billion); OPEX recovered 2022–2024: $1.536 billion	RPCGE 2024, Table V.13, lines 1.29, 1.30, and 1.31 (Coral South Project)	Report and Opinion on the State General Account
Historical tax revenues	IPP, State Profit Tax, IRPC, Bonus (2022–2025): Cumulative total of $252.8 million	FSM 2022–2025; RPCGE 2022, 2023, 2024; PESOE 2025 and 2026	It allows for the adjustment and validation of the model using actual observed data.
ENH debt (carried interest)	Total debt at the beginning of 2024: $1.356 billion (production: $551 million + development: $805 million); interest rate: LIBOR + 1% = 6% per annum	IGEPE, Table IX.24 (December 31, 2023)	Institute for the Management of State Holdings
LNG Price	Three fixed-price scenarios: Low: $8/MMBtu; Base: $12/MMBtu; High: $16/MMBtu. TE Scenario: declining trend from 2026 to 2048.	Historical prices for 2022–2025: calculated based on FSM and INP production. Scenarios: IEA WEO 2024, OpenOil 2021, Oxfam/Hubert 2019, World Bank Commodity Price Data	See subsection 4.5 for a detailed explanation.
Production decline rate	8% per year starting in 2034	OpenOil (2021); benchmarks for deep-water offshore gas fields with similar characteristics	Standard technical specification.
Audit fee for recoverable costs	99.8% acceptance rate for costs submitted by the investor	Practice documented in audits of comparable LNG projects (Commonwealth Secretariat, 2021)	A conservative parameter from the government's perspective (see subsection 4.3.4).
Inflation rates	IMF WEO October 2024 for Mozambique; applied to OPEX year-on-year in 2024 real terms	IMF World Economic Outlook Database (October 2024)	Official projections from the International Monetary Fund.

PESOE: Economic and Social Plan: State Budget. INP: National Petroleum Institute. IGEPE: Institute for the Management of State Holdings. RPCGE: Report and Opinion on the State General Account.

4.5 LNG Price Scenarios: Justification and Limits

The price of LNG is the factor with the greatest impact on projected tax revenues and, at the same time, the one subject to the greatest uncertainty. The model employs three fixed-price scenarios over the projection period (2027–2048), following the *ceteris paribus* approach, which allows for isolating the effect of each scenario on tax revenues without introducing the additional complexity of variable price trajectories over time.

The use of a fixed price is a deliberate simplification of the methodology. Its objective is not to forecast future LNG prices, a task that goes beyond the scope of this study and that no model can accurately perform for a 20-year horizon. The objective is to quantify the sensitivity of tax revenues to different price environments, providing readers and policymakers with a range of plausible outcomes. The historical average of realised prices (2022-2025) serves as an adjustment anchor for the model, not as a projection scenario.

Table 4-2: LNG Price Scenarios and Rationale

Scenario	Price (USD/MMBtu)	Source	Background	Critical observation
Stress	$8	IEA WEO, 2024 (NZE scenario)	Consistent with the 1.5°C decarbonisation pathway. Reflects the projected structural oversupply of LNG in the second half of the 2020s.	The most likely scenario in the context of an accelerated energy transition. The realised prices (calculated based on revenue and production) in 2022 ($4.24) and 2024 ($9.52) are below or close to this figure.
Base	$12	OpenOil, 2021	Technical estimate prior to the European energy crisis. Compatible with long-term contracts indexed to Brent at $80 per barrel.	Known limitation: The indexation formula used in Coral Sul's Sales and Purchase Agreements (SPAs) with BP remains confidential. The price of $12 is a reasonable estimate, but it is not derived directly from the sales contracts.
Optimistic	$16	Oxfam/Hubert, 2019 (high-impact scenario)	This reflects a scenario of persistently high demand and constrained supply. Consistent with JKM spot prices observed in 2022-2023 during the European energy crisis.	Unlikely on a long-term basis (20 years). Useful for setting an upper limit on the range of possible tax revenues.

JKM: Japan Korea Marker (spot price benchmark for LNG in Asia). SPA: Sales and Purchase Agreement. The historical prices, calculated based on revenue and production, reported by Coral Sul were: 2022 = $4.24/MMBtu; 2023 = $9.05/MMBtu; 2024 = $9.52/MMBtu; 2025 = $8.73/MMBtu (source: FSM/PESOE/INP).

In addition to the three constant-price scenarios, the model (Excel) includes a fourth scenario, called the "Energy Transition Scenario," based on an annual set of decreasing prices for the period 2026-2048. This approach reflects the growing consensus in the energy economics literature that LNG prices will face structural downward pressure in the second half of a project's operational life, driven by the massive expansion of global export capacity and the slowdown in demand in major import markets.

The price path in this scenario is based on three empirical sources. The IEA (2024a), in its its World Energy Outlook 2024, projects that global LNG export capacity will grow by approximately 50% by 2030, driven primarily by projects in the United States and Qatar, creating a structural supply surplus from the

mid-2020s onwards. Fattouh and Imsirovic (2021), in an analysis by the Oxford Institute for Energy Studies on the transformation of the global LNG market, document the gradual shift from long-term contracts indexed to oil prices to spot prices and shorter-term contracts, which increases the impact of market volatility to the prices realised by African exporters. Mihalyi and Omatsola (2019) note that countries with LNG projects that have a long development cycle, exactly the profile of Coral Sul, are systematically exposed to the risk that revenues during the plateau and decline phases, which are projected based on market prices during the negotiation years, may materialise under substantially less favourable market conditions.

In the Energy Transition scenario, the price starts at $10.8/MMBtu in 2026 and converges to $8.8/MMBtu starting in 2040, reflecting the framework from the World Bank Commodity Price Data. The results of this scenario do not replace the constant-price baseline scenario, which remains at $12/MMBtu, as the central reference for the study, in order to ensure comparability with previously available projections (Hubert, 2019; OpenOil, 2021); rather, they are presented as a sensitivity analysis that reinforces the argument regarding the risk of stranded assets, as documented in Section 3.

4.6 Model Validation Using Historical Data

The analytical credibility of the model rests primarily on its ability to reproduce observed historical data. The model was adjusted and validated using the actual tax revenue data received by the Mozambican government from Coral Sul FLNG, as published in the RPCGE for the years 2022-2024 and estimated by the PESOE for 2025 and 2026. Table 4-3 presents the year-by-year validation, comparing the model without the Production Bonus (the methodologically correct comparison, given that the Bonus is recorded under a separate line item by the tax authorities) and, for transparency, the model with the Bonus included.

The accuracy of the historical adjustment is exceptional. Three of the four years show a variance of less than 2.1%, and the year with the largest residual deviation (2024, +3.65%) has an identifiable technical explanation. The royalty (IPP) is reproduced with near-perfect accuracy (deviations of less than 0.12%) because it is calculated based on directly observable gross revenue. The small residual variance is concentrated in the State's profit oil and is structurally attributable to the difference between the actual price realised by the project and the price in the model's base scenario: in 2024, the actual price ($9.52/MMBtu) was below the base price ($12/MMBtu), generating a proportional divergence in the projected profit oil; in 2025, the actual price approaches the base-case scenario, and the variance decreases to 2.02%.

The IRPC is zero in the model for all historical years, matching the observed data exactly. This result is structurally necessary given the effect of the tax deferral of pre-FID expenses, which generates accumulated tax losses that will not be utilised until 2032.

The historical adjustment of the model does not guarantee the accuracy of future projections; no model can guarantee that. This ensures that the contractual terms and production parameters used are consistent with the actual conditions of the project. Future discrepancies will stem from variables external to the model (prices, geopolitics, force majeure events) and not from errors in the implementation of the CCPP's fiscal structure. The direction of the observed error is slightly optimistic in most years; that is, the model projects slightly higher revenues than those observed in three of the four historical years (after adjusting for the Bonus). This means that the model's long-term projections

may be slightly overestimated. If there is any systematic bias, it leans toward the conservative side of the study's critical narrative.

Table 4-3: Model Validation: Historical Tax Revenues vs. Model (in millions of USD)

Year	RPCGE (actual data)	Model (projection including bonuses)	Model (projection excluding bonuses)	Difference (%)	Difference WITHOUT Bonus (%)
2022	$0.797	$0.796	$0.796 million	-0,12%	-0,12%
2023	$73,368	$75,170	$73.173 million	+2,46%	-0,27%
2024	$90,520	$98,820	$93.821 million	+9,17%	+3,65%
2025	$88,130	$89,910	$89.911 million	+2,02%	+2,02%

Source of actual data: WSF (2026)

The Production Bonus is a one-time payment provided for in Article 12 of the CCPP Area 4 ($2 million in 2023, $5 million in 2024, for a total of $7 million). When the model includes IPP + State Profit Oil + IRPC + Bonus to compare with the observed value, we are adding a one-time component to the model that creates an apparent variance. When applying the comparison (model without bonuses vs. observed data), the deviations drop sharply and the historical adjustment becomes even more robust.
The variance of +3.65% in 2024 (the largest of the residual deviations) is structurally attributable to Profit Oil Estado, specifically to the difference between the actual price realised by the project in 2024 ($9.52/MMBtu) and the price in the model's base scenario ($12/MMBtu). In years when the actual price deviates more from the scenario price, the Profit Oil projection shows proportionally larger deviations. The IPP (2% royalty) is reproduced with near-perfect accuracy (deviations of less than 0.12%) because it is calculated based on gross revenue, which is directly observable. In 2025, the actual price approaches the base-case scenario, and the variance returns to 2.02%.

> **The model's historical adjustment does not guarantee the accuracy of future projections – no model can guarantee that. This ensures that the contractual terms and production parameters used are consistent with the actual conditions of the project. Future discrepancies will stem from exogenous variables (LNG prices, operational decisions, legislative changes), not from errors in the model's architecture.**

4.7 International Comparative Analysis

To put the results of the Mozambican model into context, the study employs a comparative analysis of the actual government take in LNG and hydrocarbon projects in selected developing countries. The cases were selected based on three criteria: *i)* the availability of sufficient public data to allow for a rigorous comparison; *ii)* project characteristics that are comparable in terms of type (offshore, shared production) or context (sub-Saharan developing country); and *iii)* relevance to the article's advocacy argument.

The selected comparison countries are Ghana (Jubilee Field, Area 1), Angola (Block 15/06, deep offshore), Tanzania (offshore blocks, post-2013 regime), and Mongolia (Oyu Tolgoi, mining – included as a reference for contract renegotiation with comparable logic regarding state-owned carried interest and sovereign debt). The comparative data were obtained from academic literature and technical reports published by the IMF, the World Bank, and the Natural Resource Governance Institute (NRGI).

4.8 Explicit Limitations of the Methodology

Transparency regarding the limitations of the methodology is a requirement of intellectual integrity and a way to anticipate technical criticism. Table 4-4 identifies the model's main limitations, categorised into three levels: structural (inherent to the DCF methodology and the contract itself), data-related (absence or inaccuracy of available sources), and not modelled (phenomena recognised as important but outside the quantitative scope of this study). Hierarchical organisation makes the discussion of limitations more rigorous and allows the reader to quickly assess the extent and impact of each limitation on the results.

Structural limitations (E1 to E3 in Table 4-4) stem from the nature of the DCF modelling applied to a long-term contract. These include the assumed stability of the contractual terms, the exogeneity of the LNG price, and the strict interpretation of contractual ring-fencing. These are acknowledged limitations in the fiscal modelling of extractive projects, and the study addresses each one with explicit mitigation strategies (anchoring in the contract text, adoption of four price scenarios and documentation of the uncertainty surrounding ring-fencing).

Data limitations (D1 through D5 in Table 4-4) result from missing data or inaccuracies in available sources. These include projected OPEX, a conservative audit rate, a confidential price indexation formula, the refusal by operators and regulators to grant access to primary data and the inability to break down sovereign debt by sector. The refusal by the entities contacted, telecom operators, the INP, and the Ministry of Economy and Finance, to grant access to primary data, citing commercial confidentiality, is in itself a significant finding for the argument regarding fiscal transparency in this study. In a sector that has generated substantial tax revenue for decades, the lack of transparency in primary data is a structural weakness of the tax system, not a limitation of the current model.

Not modelled constraints (N1 through N4 in Table 4-4) correspond to phenomena that are recognised as important but whose rigorous quantitative treatment would require complementary methodologies. These include the Demobilisation Fund (Annex C, Art. 2.6), operational downsizing during the decline phase, and second-order macroeconomic effects, such as Dutch disease. An indicative estimate was prepared for the Demobilisation Fund (a 15% impact on tax revenues in the baseline scenario), which is documented in Sheet 10 of the Excel model and quantified in this section.

It is important to note the partial trade-off between constraints N1 and N2: the Demobilisation Fund would reduce tax revenues (because it increases recoverable OPEX), while the declining operational reduction would increase them (because it reduces actual OPEX in recent years). The net effect of the two constraints is therefore moderate and is partially reflected in the range of variation across scenarios (Stress, Base, Optimistic). This adjustment is documented in the Appendix to subsection 4.8.

Table 4-4: Methodological Limitations and Mitigation Strategies

Level	No.	Limitation	Potential Impact	Mitigation Strategy
Structural	E1	Contractual terms that have remained unchanged for 27 years	The model does not account for any future contract renegotiations that might occur and that could alter tax rates, amortisation rules, or Factor R brackets.	The CCPP Area 4 does not provide for periodic review mechanisms (Article 9.6 allows for a review of the Development Plan only under specific circumstances). Analysis based on the current text of the contract. Sensitivity to contractual changes is a conscious and acknowledged limitation.
Structural	E2	The price of LNG is exogenous to the model and treated as a parameter in four scenarios	Tax revenues vary by a factor of 7.8 between the Stress and Optimistic scenarios ($1,456 million to $11,355 million). Price uncertainty is the primary source of variation in results.	Adoption of four scenarios based on recognised data sources (IEA, OpenOil, Oxfam/Hubert, World Bank); an energy transition scenario with a declining annual growth rate; explicit sensitivity analysis presented throughout the results section.
Structural	E3	Interpretation of contractual ring-fencing as limited to Area 4 Coral Sul	If the INP allows for cross-subsidisation of costs between Coral Sul and Coral Norte or Rovuma LNG, Coral Sul's tax revenues would be lower than projected in the model.	Analysis based on a strict reading of the CCPP Area 4, Art. 9.5, and Annex C (cost recovery at the concessionaire level). The ambiguity will be resolved once the Coral Norte FID is implemented. Documented as a key uncertainty in Section 4.3.4.
Data	D1	Projected future OPEX based on a fixed component (62%) and a variable component (38%) derived from OpenOil (2021)	Actual costs may differ from the projection, affecting Profit Oil and IRPC on a year-over-year basis.	Anchoring of the fixed and variable components in the RPCGE 2024 (Table V.18: $638 million in operating expenses (2024). The figures for 2022–2024 are actual data, not projections. Cumulative inflation calculated using IMF WEO rates.
Data	D2	The cost acceptance rate in audits (99.8%) is a conservative benchmark for the state	A higher tax rate would increase tax revenue; a lower tax rate (closer to 100%) would reduce it marginally.	A policy that is explicitly conservative on the part of the government. It reflects established auditing practices in the sector. See the detailed discussion in subsection 4.3.4.
Data	D3	Confidential price indexation formula for Sales and Purchase Agreements (SPAs)	Actual prices for Coral Sul may differ from the JKM scenarios used as a proxy.	Use of actual observed prices (2022–2025) for adjustment, and three scenarios based on different sources for projection. Historical validation confirms the method's reliability.
Data	D4	Primary data denied by the entities contacted (telecom operators, INP, MEF) on the grounds of confidentiality	Inability to directly cross-check internal production and cost data.	Use of official secondary sources (RPCGE, PESOE, FSM, IGEPE). The denial of access is in itself a significant finding of the study on fiscal transparency in the sector.
Data	D5	Mozambique's sovereign debt is not broken down by sector	It is impossible to directly quantify the portion of sovereign debt specifically	Analysis focused on ENH debt (which can be accurately quantified via IGEPE). Qualitative

Level	No.	Limitation	Potential Impact	Mitigation Strategy
		to analyse the portion related to LNG	attributable to anticipated LNG revenues.	analysis of sovereign debt within the macroeconomic context.
Not modelled	N1	Demobilisation Fund (Annex C, Art. 2.6) not incorporated	The inclusion of the fund, estimated at between 5% and 10% of total CAPEX, would reduce tax revenues by approximately 15% in the Base scenario (an additional $1.33 billion in recoverable OPEX from 2033 to 2048).	Explicitly documented limitation. Preliminary estimate presented in section 4.8 and in Tab 10 of the template. Non-consolidation is conservative in the opposite sense – it overestimates tax revenues by about 15%.
Not modelled	N2	Operational reduction during the decline phase not modelled	Actual operators can reduce fixed operating expenses when production falls below a certain threshold, which would have increased tax revenues in recent years.	It works in the opposite direction to N1, partially offsetting the effect of the Demobilisation Fund. The net effect of constraints N1 and N2 is therefore moderate.
Not modelled	N3	Mozambique LNG's force majeure costs ($4.5 billion, TotalEnergies) claimed for Area 1	Does not apply to Coral Sul. The costs for Area 1 are not included in the calculation of Coral Sul's revenues due to contractual ring-fencing. These are discussed in Section 6 as contingent liabilities.	Strict methodological separation: Coral Sul is modelled exclusively based on the costs of Area 4. The reference to Area 1 costs is intended solely for analytical and contextual purposes.
Not modelled	N4	Second-order macroeconomic effects (Dutch disease, exchange rate pressures, sectoral competition)	These effects may reduce aggregate tax revenues in other sectors of the economy, thereby increasing the opportunity cost of the LNG model.	Discussed in detail in Box 5.1 and Section 7 (Opportunity Cost). A general equilibrium (CGE) model would be required for a rigorous quantification, which is beyond the methodological scope of this study.
Structural	E1	Contractual terms that have remained unchanged for 27 years	The model does not account for any future contract renegotiations that might occur and that could alter tax rates, amortisation rules, or Factor R brackets.	The CCPP Area 4 does not provide for periodic review mechanisms (Article 9.6 allows for a review of the Development Plan only under specific circumstances). Analysis based on the current text of the contract. Sensitivity to contractual changes is a conscious and acknowledged limitation.

The refusal by the entities contacted – telecom operators, the INP and the Ministry of Economy and Finance – to grant access to primary data on grounds of commercial confidentiality is, in itself, a significant finding for the argument regarding fiscal transparency in this study. In a sector that generates public revenues of around $90 billion annually, the lack of transparency in the underlying data is inconsistent with the principles of extractive industry governance that Mozambique has committed to through its participation in the Extractive Industries Transparency Initiative (EITI), for which it has already published 13 reports.

4.9 Opportunity Cost Assessment Methodology

Section 7 of the report analyses the opportunity cost of Mozambique's reliance on LNG. Opportunity cost analysis involves comparing the observed or projected outcomes of a policy choice (in this case, the concentration of capital, institutional capacity, and political attention on LNG) with the outcomes that would have been achieved under alternative choices (investment in agriculture, processing of critical minerals, renewable energy, etc.). The counterfactual nature of this analysis requires an explicit methodology regarding what is comparable, how comparisons are made and what limitations are acknowledged.

General approach

The opportunity cost analysis conducted in this study does not use computable general equilibrium (CGE) models, which would be the preferred tool for rigorously quantifying second-order effects on employment, exchange rates, inflation and income. Its development goes beyond the methodological scope of this study. The approach adopted is, rather, a structured comparative analysis with three components: a comparison of intensity indicators (CAPEX per job, tax revenue per CAPEX), a comparison of observed sectoral trajectories (FDI by sector over 2002-2025) and a qualitative analysis supported by verifiable empirical benchmarks.

Dimensions of analysis

Opportunity cost is broken down into three complementary dimensions: the opportunity cost of capital (where it was invested, versus where it could have been invested more effectively in terms of employment and value added); the opportunity cost of institutional capacity (where the state's technical capacity was allocated, absorbing decades of specialised contract negotiation); and the exchange rate opportunity cost (effects of the Dutch disease on the non-extractive export sector). Each dimension is discussed in Section 7, supported by specific empirical evidence.

Empirical sources

The analysis is based on three primary datasets: firstly, microdata from the Bank of Mozambique on annual Foreign Direct Investment flows by sector of activity, 2002-2025, which allow us to trace the sectoral trajectory of FDI in Mozambique over a 24-year period; secondly, data from the Ministry of Labour (Bulletins 2024 and 2025) on employment generated by sector and wage structure; and, thirdly, data from APIEX on investment-to-job ratios for projects approved in 2024. These three sources are combined to create a structured comparison based on verifiable data.

Structured comparison

The comparison between the extractive sector (LNG) and alternative sectors (agriculture/agro-industry, manufacturing, tourism, renewable energy, critical minerals) is based on common indicators: CAPEX per direct job created, tax revenue per $ of CAPEX invested, social security coverage rate, potential for cross-sectoral linkages and historical FDI growth trajectory. This selection of indicators is informed by the literature on development economics (Van der Ploeg, 2011; Commonwealth Secretariat, 2021; IEA, 2024) and allows for comparisons that are empirically sound, even though it does not replace a CGE model.

Recognised limitations

This approach has three limitations that the study explicitly acknowledges: firstly, counterfactuals are, by definition, impossible to verify with precision. It is impossible to know for certain what would have happened if capital had been channeled differently; secondly, the indicators used capture direct intensity,

not the dynamic effects and second-order linkages that a CGE model would capture; and thirdly, the analysis assumes that the alternatives are realistically comparable, but factors such as geography, institutional fragility and investment risk may limit effective substitution across sectors. Despite these limitations, the analysis provides structured empirical evidence that alternatives involving greater labour intensity and greater potential for economic linkages do exist, have well-documented characteristics, and deserve the same level of policy attention as has been given to LNG.

4.10 External Model Validation

The fiscal model underwent an independent external validation process conducted by three external consultants hired specifically for this purpose, all of whom have proven experience in fiscal modelling for the extractive sector. Each consultant received the model independently, without prior knowledge of the other consultants' assessments, and was asked to comment on the consistency of the contractual assumptions, the robustness of the calculation framework, the appropriateness of the production parameters, and the reliability of the historical adjustment.

The contributions of the three reviewers were analysed and selectively incorporated by the author, based on criteria of empirical verifiability and consistency with the available primary sources. Suggestions lacking verifiable empirical evidence or contradicted by official historical data were not included. The record of decisions regarding the inclusion of suggestions and the reasons for not incorporating certain suggestions has been documented internally and is available for review as part of the study's review process.

This external validation process complements the historical adjustment of the model using verifiable official data (RPCGE, FSM, PESOE), which serves as the primary anchor for quantitative reliability. The combination of these two mechanisms, validation by expert peers and adjustment using observed data, gives the model a degree of methodological robustness that is appropriate for the fiscal policy analysis for which it is intended.

In addition to historical adjustment and validation by independent external reviewers, the findings of this study are consistent with the most recent analyses of the Mozambican economy by multilateral institutions. In its March 2026 Mozambique Economic Update, the World Bank explicitly identifies the same structural patterns documented in this model: the back-loading of tax revenues from LNG megaprojects, structural vulnerability to international prices, the modest actual tax revenues relative to official expectations, and the need for caution in budget planning that relies on these revenues. The World Bank report explicitly warns that the cost of fiscal inaction is rising and that economic instability could jeopardise more than $50 billion in foreign direct investment, particularly in LNG. This analytical convergence, independently arrived at by two institutions using different methodologies, sources and objectives, reinforces the robustness of the key findings of this study.

4.11 Research Ethics and Declaration of Independence

This study was produced by the Centre for Public Integrity (CIP), an independent civil society organisation, as part of the FJ4D project, funded by the Energy Transition Fund (ETF) in partnership with Oxfam Novib and the Centre for Democracy and Human Rights (CDD). The authors declare that they have no financial interest in the projects analysed and that the analysis was conducted independently of the funders.

The statistical model and the data used will be made available in a public repository to enable replication and independent verification of the results. This methodological approach is consistent with the principles of transparency that the study advocates for Mozambique's extractive sector.

5 RESULTS

5.1 Tax Revenue Forecast

The model projects the Mozambican government's total tax revenues from the Coral Sul FLNG project for the period 2022-2048 under three LNG price scenarios. The results are as follows:

Table 5-1: Total Tax Revenues by Price Scenario (2022–2048, in millions of USD)

Fiscal Instrument	Stress ($8/MMBtu)	Base ($12/MMBtu)	Optimistic ($16/MMBtu)	Note
Royalty (IPP)	$511	$799	$1,129	The only instrument with continuous flow since production began
Profit Oil - State	$938	$1,875	$4,917	Significant inflow only after 2035, when the R-factor exceeds 1
IRPC	$0	$1,347	$5,302	Zero Stress; starts in 2033 at Base; the largest component in the Optimist
Production Bonus	$7	$7	$7	Fixed. Paid in 2022–2024 pursuant to Article 12 of the CCPP
TOTAL	**$1,456**	**$4,028**	**$11,355**	**A 7.8-fold difference between the stress and optimistic scenarios**

Source: Fiscal model adjusted using RPCGE 2024 data (Table V.18, Coral South Project), FSM/RPCGE 2022–2024, and PESOE 2025–2026. Stress scenario: IEA WEO 2024 (NZE scenario). Base-case scenario: the study's central projection. Optimistic scenario: prolonged upward trend in demand.

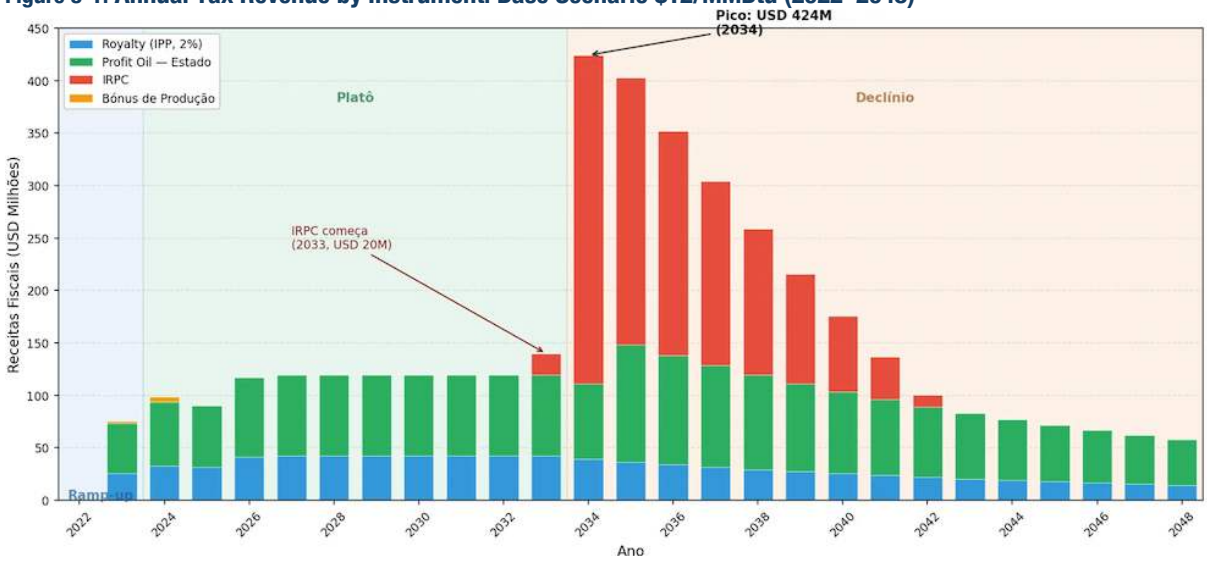
The range of results, from $1.5 billion in the stress scenario to $11.4 billion in the optimistic scenario, is in itself a key analytical finding. This represents a 680% (7.8-fold) difference between the two extremes, resulting solely from the difference in LNG prices. This extreme sensitivity reflects the structural weight of the non-linear elements of the tax system. The IRPC only becomes significant when the investor's Profit Oil covers the full amount of the tax amortisation of pre-FID costs (pursuant to Article 11.4.a)ii) of the CCPP), and the State's Profit Oil depends on Factor R. In the stress scenario, the IRPC is zero over the 27-year period. In the optimistic scenario, this amounts to $5.3 billion. The same contractual structure therefore yields radically different results depending on the trajectory of LNG prices. This result is important for assessing the fiscal risk associated with the LNG dependence model.

> **The political interpretation of this result is straightforward. The Mozambican government's ability to plan budgets and service its debt based on revenues from Coral Sul FLNG is structurally limited by the volatility of LNG prices. In the stress scenario – which is the one most consistent with the trajectory of the global energy transition – tax revenues would average $54 million per year ($1.456 billion divided by 27 years), a figure dramatically lower than the projections in official narratives. In the baseline scenario, the annual average is $149 million, which is still modest compared to Mozambique's sovereign debt service of approximately $1.5 billion per year.**

5.2 The Timing of Revenues

The question of how much the state will receive from Coral Sul FLNG is an important one. The question of when it will be received is equally, and perhaps even more, important for the management of Mozambique's public finances. The model projects annual tax revenues in granular detail, revealing a pattern that confirms and quantifies the rear-loaded structure described in the theoretical literature.

Figure 5-1: Annual Tax Revenue by Instrument: Base Scenario $12/MMBtu (2022–2048)



Source: Coral Sul FLNG fiscal model, adjusted using the FSM/RPCGE 2022–2025 and the PESOE 2025 and 2026. The complete annual data, including revenue by instrument for each year from 2022 to 2048, are provided in Appendix A1

An examination of Figure 5.1 reveals three analytically relevant patterns that deserve explicit attention.

a) The First Decade Is Marked by Modest Revenues

Between 2022 and 2026, the first five years of production, the Mozambican government is expected to receive a total of $381 million from Coral Sul FLNG under the baseline scenario. This amounts to an average of $76 million per year, or approximately 0.34% of Mozambique's GDP in 2025. The IRPC is zero throughout this period and remains zero until 2032, a result that reflects the strict application of Article 11.4.a)ii) of the CCPP Area 4: pre-FID exploration ($2.172M) is fully amortised in 2022, and pre-FID development ($8.503M) is amortised in four 25% tranches over 2022–2025, creating cumulative tax losses that will not begin to be fully absorbed until 2032.

b) The Leap of 2034: The IRPC as a Catalyst for Change

The year 2034 marks a structural turning point in projected tax revenues. The investor's accumulated tax loss, which peaked at approximately $8.5 billion in 2025, will not be fully offset until 2032. In 2033, the IRPC reached its first significant figure ($20 million), and in 2034, it took a major leap forward. Total annual revenue triples, rising from $140 million in 2033 to $424 million in 2034. This increase does not reflect any change in production or price; it merely reflects the delayed implementation of the CCPP's tax structure. The IRPC peaks in 2034 ($313 million, already subject to the 32% rate applicable after the 8-year tax benefit under Article 11.4.a)i)) and declines gradually until it returns to zero in 2043, when the investor's Profit Oil no longer covers the year's OPEX.

The political implication is that any public finance plan that counts on substantial revenue from Coral Sul before 2033 is overestimating the project's fiscal contribution in the short term. Historical data confirms this. Between 2022 and 2025, actual revenues totalled $253 million, an average of $63 million per year, well below the levels needed to have a significant macroeconomic impact. The model projects that this annual average will remain virtually unchanged until 2032 (approximately $117 million per year from 2026 to 2032), before surging during the 2034-2042 period, which accounts for 78% of the project's total IRPC.

c) The 2034 Peak and the Paradox of the Decline Phase

The most surprising finding of the model is that annual tax revenue peaks in 2034, right at the start of the decline phase. With a projected figure of $424 million, 2034 exceeds any year during the plateau phase by more than three times. The explanation lies in two combined factors: first, IRPC accumulated tax losses over a 12-year period and will not begin generating tax revenue until 2033; second, in 2034, the standard rate of 32% applies for the first time (the 24% tax benefit under Art. 11.4.a)i) expired in 2029, but taxable income was still zero). The tax peak therefore coincides with the first year in which all contractual conditions for full taxation are met simultaneously.

> *The paradox of the decline phase is analytically important to the study's argument. Coral Sul's highest tax revenues will be generated when production is already declining, as the project nears the end of its useful life, and when the global LNG market environment is much more uncertain. By definition, the projections for 2034-2042, a period accounting for 69% of the project's total tax revenue, are the most vulnerable to the energy transition scenario, competition for capital, and the possibility of stranded assets. This fact turns the CCPP's rear-loaded structure into a systemic fiscal risk: the Mozambican government has assumed the full burden of the energy transition because substantial revenues will only materialise at a time when global demand for LNG will be under greater pressure.*

5.3 Which Tax Instrument Generates Revenue, and When?

An analysis of the composition of total tax revenues over the project's life cycle reveals a structural asymmetry between immediate and deferred instruments.

Table 5-2: Breakdown of Total Tax Revenues by Instrument and Phase (Base Case, in millions of USD)

Instrument	Ramp-up (2022–2023)	Plateau (2024–2033)	Decline (2034–2048)	TOTAL	% of Total
Royalty (IPP)	$27	$401	$372	$799	19,8%
Profit Oil – State	$47	$737	$1,090	$1,875	46,5%
IRPC	$0	$20	$1,326	$1,347	33,4%
Production Bonus	$2	$5	$0	$7	0,2%
TOTAL	**$76 (1.9%)**	$1,164 (28.9%)	$2,788 (69.2%)	$4,028	100%

Table 5-2 shows that 69.2% of total tax revenue is concentrated in the last 15 years of the project (decline phase). Only 1.9% of tax revenue is collected in the first two years. The decline phase generates more tax revenue than the plateau phase, confirming the contract's extremely rear-loaded structure. This distribution is not unique to Mozambique; it is a predictable and well-documented feature of production-sharing regimes with high cost recovery (Daniel et al., 2010; Hubert, 2019). What this model

adds is a precise quantification of this distribution for the specific case of Coral Sul, showing that revenue over the last 15 years is 37 times higher than in the first two years.

5.4 Deferred IRPC - When the "Higher Tax" Doesn't Exist

The IRPC is the tax instrument that generates the most revenue during the project's decline phase, totalling $1.347 billion, or 33.4% of total tax revenue in the base-case scenario. But its temporal distribution is extremely irregular. For 11 consecutive years (2022-2032), the IRPC is strictly zero. It amounts to $1.3 billion over the next 9 years (2033-2042) and drops to zero in the final 6 years (2043-2048). This allocation literally reflects the application of Article 11.4.a)ii) of the CCPP, Area 4, which stipulates that pre-commercial production expenses are not amortised until the year production begins, and Article 11.4.vii), which limits the deferral of tax losses to six years. Column Y in Tab 3 of the model explicitly implements this amortisation by cohorts, avoiding simplifications that would artificially inflate the IRPC.

The investor's accumulated tax loss, the difference between the accumulated annual tax deferral and the taxable income received from Profit Oil and Cost Oil, must be fully utilised before any taxable income arises. The model projects that the loss will peak in 2025 (approximately $8.5 billion) and will gradually be absorbed by 2032. The first year with a substantial IRPC is 2033 ($20 million). Starting in 2034, the IRPC reaches an all-time high ($313 million) and then gradually declines. In 2043, the investor's Profit Oil will no longer cover the year's operating expenses, taxable income will return to zero, and the IRPC tax will cease until the end of the project. This pattern confirms that the full amortisation of pre-FID costs, combined with the natural decline of the reservoir, makes the IRPC a tax instrument with limited scope rather than a stable revenue stream over the project's lifetime.

> **The fact that the IRPC equals $0 during the years 2022–2032 (11 years) and again in 2043–2048 (6 years) is neither a modelling error nor a contractual irregularity. This is a direct result of the tax structure of the CCPP Area 4, which was designed to ensure that investors recoup their entire investment before being taxed on the profit. In total, 17 of the 27 years of production (63%) do not generate IRPC. The effective IRPC tax burden is concentrated in just 10 years (2033–2042).**

5.5 The Government's Estimated Cash Flow

The effective government take for the Coral Sul FLNG project, calculated as the ratio of total tax revenues to total gross revenues over the project's operational life, is 10.08% in the base case scenario. This figure is the result of two combined factors: the weight of recoverable costs ($11.7 billion in CAPEX and $23 billion in OPEX accumulated over the project's lifetime) and the rear-loaded structure of the tax instruments. The range across scenarios shows considerable variability; the government take ranges from 5.70% in the stress scenario to 20.11% in the optimistic scenario. This 3.5-fold variation shows that the metric depends critically on the trajectory of LNG prices, a factor over which Mozambique has no control.

Table 5-3: Government take: Scenarios and International Comparison

Setting / Country	Gross Revenue (in millions of USD)	Tax Revenue (in millions of USD)	Gov. Take (% of gross revenue)	Gov. Take (% of net revenue)	Note
Coral Sul - Stress ($8)	25.561	1.456	5,70%	21,5%	Adverse energy transition scenario; IRPC = zero
Coral Sul - Basic ($12)	39.973	4.028	10,08%	38%	Study baseline scenario
Coral Sul - Optimista ($16)	56.475	11.355	20,11%	75%	Scenario of prolonged high demand
Coral Sul - TE Base (deck)	32.208	1.833	5,69%	5,7%	Descending price deck for 2026–2048; IRPC = zero
International benchmarks (literature)					
Ghana - Jubilee Field	N/A	N/A	N/A	65–75%	Includes government ownership; post-cost metrics
Angola - Block 15/06	N/A	N/A	N/A	55–70%	Sliding scale at Profit Oil; post-cost metric
Tanzania - offshore	N/A	N/A	N/A	50–65%	A system modelled after the Mozambican model

Note: *The* government take of the comparison countries, Ghana (Jubilee Field), Tanzania (post-2013 offshore blocks), and Angola (Block 15/06), is reported in the literature and in NRGI reports on revenues after costs, which is the industry standard metric. The 10.08% rate for this model is calculated based on gross revenue. The methodological conversion between the two metrics is discussed in Chapter 3. Even after adjusting for post-cost metrics (equivalent to 38% in the base scenario), Coral Sul remains substantially below its African peers.

The difference between the government take on revenue after costs (49%, according to Hubert, 2019) and the government take on gross revenue (10.08%, model used in this study) is not contradictory; rather, it is complementary. The first measures the fairness of the distribution of what remains after costs, while the second measures the government's actual macroeconomic benefit as a proportion of the gross value generated. The 4.9-fold discrepancy between the two metrics precisely reflects the structural weight of recoverable costs ($34.6 billion in cumulative CAPEX and OPEX), which account for 86% of gross revenue before any actual taxes are paid to the government.

The government take figures calculated by this model are consistent with the World Bank's most recent projections for the tax contribution of LNG megaprojects in Mozambique. The March 2026 *"Mozambique Economic Update"* (World Bank, 2026) notes that, despite the official rhetoric of economic transformation through LNG, the actual tax contribution from extractive projects has been and will continue to be modest relative to GDP and sovereign debt service. This convergence between our model (10.08% of the gross government take in the baseline scenario) and the World Bank's independent analysis reinforces the validity of the projections and distinguishes them from the more optimistic estimates historically released by the operating companies.

5.6 The R-Factor Levels Are Never Triggered

Article 9.10 of the CCPP Area 4 establishes a mechanism for the progressive distribution of Profit Oil based on the R Factor (the ratio of the investor's cumulative cash inflows to their cumulative investment). The contractual framework provides for five tiers of increasing government participation: 15% when $R < 1$, 25% when $1 \leq R < 2$, 35% when $2 \leq R < 3$, 45% when $3 \leq R < 4$, and 55% when $R \geq 4$. This sliding scale

was negotiated to protect State revenue in scenarios where investors generate high returns, ensuring that the more profitable the project, the greater the State's share.

The model reveals a key analytical finding. In the baseline scenario, the Mozambican government never reaches the third tier. The R Factor grows slowly over the course of the project, reaching 1 for the first time only in 2034, twelve years after the start of commercial production. From that point on, the State's share increases from the 15% bracket to the 25% bracket and remains in that bracket until the end of the project in 2048. The R Factor reaches an all-time high in 2043, with a value of 1.25, well below the threshold of 2 required to trigger the next stage.

Table 5-4: Breakdown of Total Tax Revenues by Instrument and Phase (Base Case, in millions of USD)

Period	R Factor	State Level (Art. 9.10)	Note
2022	0,00	0% (first year)	Before the R-factor could be calculated
2023–2034 (12 years)	-0.02 to 1	15% (R < 1)	Minimum threshold for 12 consecutive years
2034	1,004	transition 15% → 25%	The R factor exceeds 1 for the first time
2035–2048 (14 years)	1.06 to 1.25	25% (1≤R<2)	Highest level reached during the project
Never hit	> 2	35% / 45% / 55%	Maximum R-squared value for the model: 1,245 (peak in 2043)

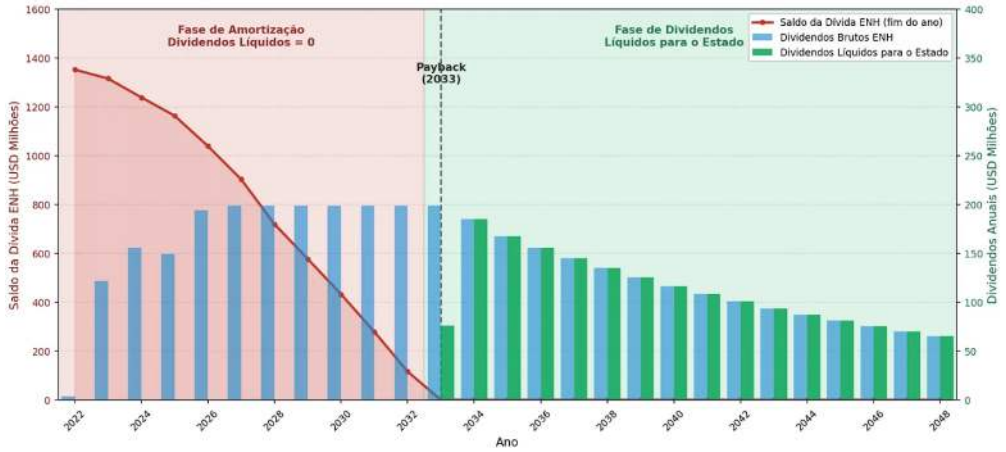
The weighted average rate over the project's lifetime is approximately 20.5%, well below the theoretical midpoint in the table under Article 9.10 (35%). The reason for this result is structural and reflects the scale of investment relative to revenue growth. The investor's total CAPEX ($11.7 billion for exploration and development), combined with cumulative OPEX ($23 billion in nominal terms), creates a denominator in the calculation of the R-factor that is recovered only very gradually by cash inflows. Even under the optimistic scenario ($16/MMBtu), the R-factor would reach only the third tier in the final years of the project, without ever reaching the fourth or fifth tier. In adverse price scenarios (Stress or Base TE), the R Factor does not even exceed 1, keeping the State indefinitely at the minimum threshold of 15%.

> **The political implication is that the contractual progressivity, negotiated in 2006, which in theory would protect the State from excessive investor returns, does not materialise in practice. The contractual structure is not progressive in the actual life of the project; it is, in fact, linear, with the government receiving between 15% and 25% of the Profit Oil over the course of 27 years, without access to the higher tiers, which were the stated reason for accepting a low IPP (2%) and a high cost recovery cap (75%).**

5.7 ENH's Debt Quantified

ENH's 10% stake in the Area 4 consortium, structured as carried interest, adds a critical dimension to the analysis of state revenues that is rarely included in public projections. ENH is not merely a beneficiary of the project; it is also a debtor whose dividends have been entirely consumed by servicing a debt of $1.356 billion for over a decade.

Figure 5-2: ENH Debt and Net Dividends to the State: Base Case: $12/MMBtu (2022–2048)



Source: Coral Sul FLNG Tax Model. Initial debt: $1.356 billion (IGEPE 2023). Interest rate: 6% per year. The complete annual breakdown – outstanding debt, interest, principal payments, and net dividends year by year – is provided in Appendix A2.

Figure 5-2 reveals a pattern that has direct implications for the political narrative regarding the benefits of LNG for Mozambique. During the first eleven years of production under the Coral Sul project (2022–2032), the government's 10% stake will generate cumulative gross dividends of $1.942 billion. Of that amount, not a single dollar goes to the State. Dividends are entirely consumed by debt service ($1.942 billion in debt service = $548 million in interest + $1.394 billion in principal repayment) on debt originally incurred to finance ENH's participation in the consortium, at an annual rate of 6%.

> **The net benefit to the Mozambican government from its 10% stake amounts to $1.788 billion over 27 years, an average of $66 million per year. But this amount won't start coming in until 2033. For the first eleven years, ENH effectively serves as a financing vehicle for foreign investors. The debt is incurred by the Mozambican government so that Area 4 partners can operate with the political legitimacy of national participation, without this translating into any actual return for the government for more than a decade.**

5.8 The State's Net Tax Benefit

An integrated analysis of direct tax revenues and the government's stake via ENH makes it possible to calculate the total net tax revenue for the Mozambican government from the Coral Sul FLNG project for the period 2022-2048.

Table 5-5: Total Net Tax Benefit to the State: Breakdown by Component (Base Case, in millions of USD)

Component	Total (2022–2048)	A Solid Start	Note
Direct Tax Revenues	$4,028	2033	Royalties ($799 million) + State Profit Oil ($1.875 billion) + IRPC ($1.347 billion) + Bonus ($7 million)
ENH Net Dividends	$1,788	2033	After full repayment of the carried interest debt (11 years of retained dividends)
Interest paid by ENH (cost)	-$548	-	Financial cost of ENH's debt to Area 4 partners (6% annual interest rate)
TOTAL NET TAX BENEFIT	$5,268	2033	Annual average: $195 million, concentrated in 2033–2048 (74% of the total)

The total net tax benefit of $5.268 billion over 27 years, an average of $195 million per year, should be viewed with caution. The average masks the extremely uneven distribution over time. In the first five years (2022-2026), the average annual benefit is $76 million; in the following eleven years, 2022-2032, the average is just $105 million per year (excluding ENH net dividends); starting in 2033, the average benefit rises to $313 million per year. The temporal concentration of revenues is therefore even more pronounced than that of direct tax revenues, since the ENH will not generate net cash flows until 2033.

It should also be noted that the net tax benefit calculated in this model does not include the opportunity cost of the public capital raised to support ENH's stake, nor the costs of supervising and regulating the sector. These factors would further reduce the actual net benefit, but accurately quantifying them would require additional methodologies. The net amount already reflects the deduction of interest paid by ENH on its debt service ($548 million).

> **For a country that justified part of its sovereign debt with the expectation of LNG revenues and is currently negotiating debt restructuring with international creditors, the central message of this model is clear. Coral Sul's substantial revenues will come, but they will come late. Responsible fiscal management requires that this reality, and not the optimistic projections circulating in the public sphere, form the basis of medium-term budget planning.**

5.9 Coral Sul's Tax Revenues from a Macroeconomic Perspective

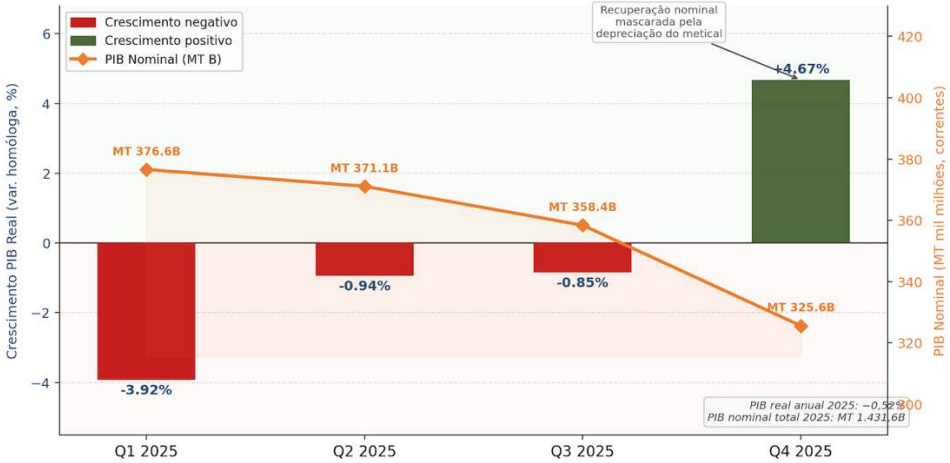
Analysing absolute tax revenues, in dollars and over the course of decades, can obscure their relative size in relation to the Mozambican economy. Putting this into context with the latest national GDP data provides a more accurate picture of the actual dimension of the project's fiscal contribution to the country's development.

5.9.1 The Macroeconomic Context in 2025

The year 2025 marked a significant economic setback for Mozambique. Data from INE, published in February 2026, confirm that real GDP contracted by 0.52% year-over-year, the result of three consecutive quarters of negative growth (Q1: -3.92%; Q2: -0.94%; Q3: -0.85%), with a late recovery in Q4 (+4.67%), which did not offset the accumulated losses. This reduction is occurring against a backdrop of post-election instability, disruptions to economic activity, and deteriorating external financing conditions.

Nominal GDP for 2025 is 1.432 trillion meticais (INE, 2026), equivalent to approximately $22.4 billion (USD) at the Bank of Mozambique's official exchange rate of 63.9 MT/$(March 2026). The implications of this exchange rate for the analysis are discussed in Box 5.1 below.

Figure 5-3: Real GDP Growth by Quarter, 2025 (year-over-year change, %)



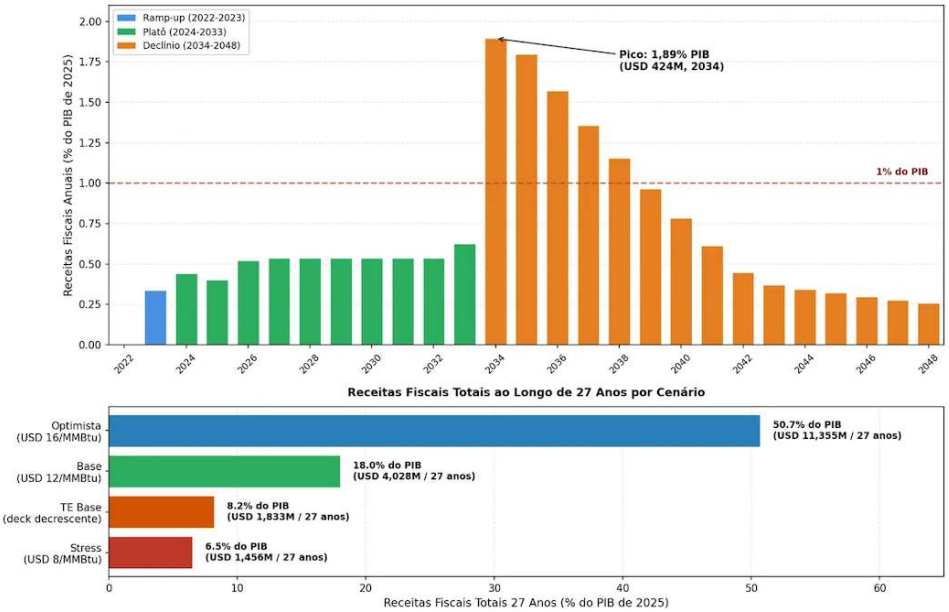
Source: INE, 2026. National Accounts Figures, Fourth Quarter 2025. Production Perspective, Prices in 2019 constant prices.

The reduction in real GDP in 2025 is analytically significant for two reasons. Firstly, it highlights the structural fragility of the Mozambican economy and its vulnerability to internal political shocks, which makes long-term dependence on extractive revenues even riskier. Secondly, it shows that the Coral Sul FLNG project, the only LNG project currently in production, was not enough to stabilise the macroeconomic trajectory, not even partially. The project generated $90 million in tax revenue in 2025, even as the economy contracted. This data does not condemn the project, but it debunks the narrative that LNG is transforming Mozambique's development trajectory in the short term.

5.9.2 Comparisons of Tax Revenues to GDP

Figure 5.4 compares the tax revenues from the Coral Sul FLNG project with nominal GDP in 2025, providing an indication of the relative magnitude of the project's tax contribution over different time horizons.

Figure 5-4: Tax Revenues from Coral Sul FLNG as a Percentage of GDP in 2025 (Base Case, $12/MMBtu)



Source: Coral Sul FLNG fiscal model; FSM/RPCGE 2022–2024; PESOE 2025–2026; INE (2026). GDP for 2025 in USD, calculated using the average BdM exchange rate. The 27-year totals are not directly comparable with the annual figures.

The data in Figure 5-4 show that almost no annual revenue exceeds the 1% of GDP threshold over the production period, with the exception of the peak in 2034 ($424 million = 1.89% of 2025 GDP). The 18.0% of GDP in the baseline scenario seems significant until one realises that it is spread over 27 years, about 0.67% of GDP per year, on average, a figure far lower than Mozambique's sovereign debt service (approximately 6.7% of GDP in 2025).

Note: Nominal GDP for 2025 is 1,431.6 billion meticais (INE, 2026), converted at an exchange rate of 63.9 MT/$(Bank of Mozambique, March 2026) = $22.4 billion. Comparisons with 2025 GDP are static and do not reflect the expected GDP growth through 2048, which means that the proportions will decrease over time. This is a conservative approach that emphasises the relative magnitude of LNG revenues.

> **Figure 5-4 should be interpreted with caution but straightforwardly. Over its 27-year production period, the Coral Sul FLNG project will generate tax revenues equivalent to 18% of Mozambique's current GDP, spread over nearly three decades. In the stress scenario, this ratio falls to 6.5% of current GDP ($1,456 million out of $22,400 million). These figures are not, in and of themselves, a judgment; they are a yardstick that puts into critical perspective any narrative that presents Coral Sul as a structural solution to Mozambique's fiscal problems. A project that generates, on average, 0.67% of GDP per year over a 27-year period cannot simultaneously serve as the foundation for a development model and as the justification for sovereign debt on the scale currently observed.**

BOX: 5-1: Exchange Rate as a Latent Variable: Implications of the Metical's Overvaluation for LNG Revenues

EXCHANGE RATE AND LNG REVENUES: A DIMENSION MISSING FROM THE FISCAL DEBATE

The analysis of Coral Sul FLNG's tax revenues in dollars is methodologically correct; the project operates, collects payments and reports in USD. But when these revenues reach the Mozambican government and are converted into meticais to finance public spending, the exchange rate ceases to be a technical detail and becomes a key fiscal variable. The current situation of the metical adds a layer of complexity that the public debate on LNG in Mozambique has consistently overlooked.

THE FACT: FIVE YEARS AT A FIXED RATE

Since mid-2021, the exchange rate of the metical against the dollar has effectively stabilised at 63.9 MT/USD. The exchange rate regime is floating, but in practice, as documented in the IMF Working Paper (Mann et al., 2024), exchange rate volatility has disappeared despite widespread macroeconomic shocks: an insurgency in the north, post-election instability, a deterioration in public finances and a decline in external support. The IMF concludes that "macroeconomic fundamentals do not explain the stability of the metical" (Mann et al., 2024) – which is equivalent to saying that this stability is not natural.

THE IMF'S ASSESSMENT: OVERVALUATION AND FOREIGN EXCHANGE SHORTAGE

The IMF's 2025 Article IV Consultation, published in February 2026, is explicit. The metical is overvalued in real terms, reflecting an appreciation of more than 20% in real effective terms since mid-2021 (IMF, 2026a). The IMF Executive Board recommended, for the second consecutive time, "greater exchange rate flexibility," a measure that the Mozambican government failed to implement in either 2024 or 2025, leading to the collapse of the IMF programme in April 2025 (IMF, 2026a; Hanlon, 2026). The spread between the official exchange rate and the parallel market rate widened in the first half of 2025 (IMF, 2025), indicating that the market values the metical below the official rate. An independent analysis estimates that the metical's real market value is approximately 90 MT/USD, representing an overvaluation of about 40% compared to the official exchange rate (Hanlon, 2026).

THE IMPLICATIONS FOR LNG REVENUES

Coral Sul's revenue is received by the state in U.S. dollars and converted to meticais at the official exchange rate. A potential devaluation to 90 MT/$would have asymmetric fiscal effects: i) the value in meticais of LNG revenues would increase proportionally; $90 million in tax revenues would be worth 8.1 billion meticais instead of 5.8 billion; ii) the cost in meticais of servicing external debt would also increase; Mozambique's external public debt, estimated at $12.5 billion by the IMF (2026a), would become 40% more expensive in local currency terms; iii) imports would become more expensive, putting pressure on inflation and household purchasing power. The net effect on public finances would depend on the composition of spending and the structure of the debt, but in a country where external debt accounts for a large share of GDP, the debt channel tends to dominate.

THE DUTCH SICKNESS THROUGH THE EXCHANGE RATE CHANNEL

The IMF Working Paper (Mann et al., 2024) documents that Mozambique's export sector is dominated by extractive megaprojects with a significant foreign-currency cost component, notably coal, aluminum, natural gas, heavy sands and electricity. The foreign exchange generated by these projects partially supports the stability of the metical. This mechanism is a manifestation of the exchange rate channel of the Dutch disease. Extractive industries drive up the real exchange rate, undermining the competitiveness of alternative sectors (agro-business, tourism, light manufacturing) that depend on a realistic exchange rate to export or compete with imports. The overvaluation of the metical, while partly supported by LNG foreign exchange earnings, thus creates a vicious cycle. LNG benefits from a strong exchange rate, a strong exchange rate harms alternative sectors, and the lack of economic alternatives reinforces dependence on LNG.

METHODOLOGICAL NOTE: Comparisons with GDP in this study use the Bank of Mozambique's official exchange rate of 63.9 MT/$(March 2026), as it is the official and verifiable reference. The IMF (2026a) assesses the metical as overvalued in real effective terms, which implies that nominal GDP in USD, calculated at this rate, may be overestimated. A more realistic market exchange rate of 90 MT/$(according to Hanlon, 2026) would reduce GDP in USD to approximately $15.9 billion, proportionally increasing the share of GDP attributable to LNG revenues, thereby strengthening, rather than weakening, the central argument of this study.

6 PUBLIC DEBT AND CONTINGENT LIABILITIES OF THE GNL

An analysis of direct tax revenues, however rigorous it may be, provides an incomplete picture of the impact of LNG on Mozambique's public finances unless it is supplemented by an analysis of the liabilities the government has assumed in order to participate in these projects. This section examines two types of liabilities: *i)* quantifiable liabilities, represented by the debt of the National Hydrocarbons Company (ENH), incurred to finance its 10% stake in the Area 4 consortium; *and ii)* contingent liabilities, which are not fully quantifiable, arising from the dispute over Mozambique LNG's force majeure costs, future obligations related to Coral Norte FLNG, and uncertainty regarding the Rovuma LNG project, which has not yet received a FID.

6.1 ENH's Debt: Structure, Magnitude, and Implications

6.1.1 Origin and Structure of the Debt

ENH's 10% stake in the Area 4 consortium, which includes Coral Sul FLNG, Rovuma LNG (without FDI) and the Coral Norte FLNG project currently under development, was structured as a carried interest, pursuant to Article 9.13 of the Area 4 CCPP (2006). Under this arrangement, ENH did not contribute any of its own capital during the exploration and development phases. The costs were financed by the consortium partners (ENI and ExxonMobil) and converted into ENH debt, to be repaid from the project's dividends, with interest at a rate of LIBOR + 1% (set at 6% in the model).

According to IGEPE (2023), ENH's total debt arising from this stake stood at $1,356 million as at 31 December 2023, comprising $551 million in operating debt and $805 million in development debt. This figure represents 6.1% of Mozambique's nominal GDP in 2025, an amount that rarely comes up in public debate about the costs and benefits of LNG for the country.

Note: The Administrative Court did not publish the equivalent map in the RPCGE 2024, which in itself constitutes a significant setback for fiscal transparency and is relevant to the study's argument.

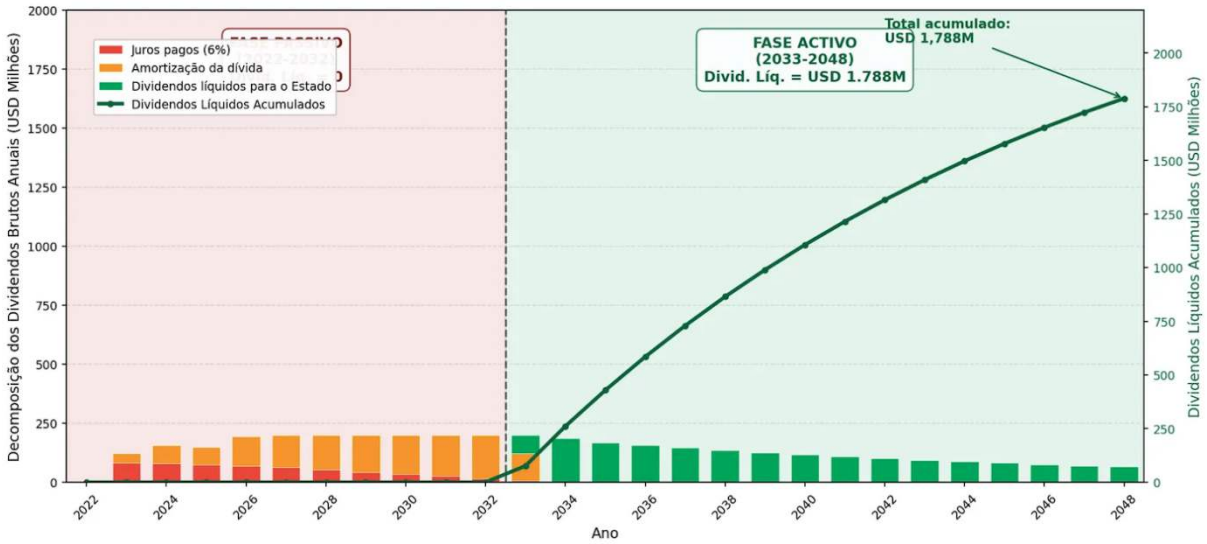
Table 6-1: ENH Debt Structure in Area 4 (December 31, 2023)

Debt Component	Value (in millions of USD)	% of Total Debt	Origin
Operating Debt (Area 4 costs prior to FID)	$551	40,6%	Seismic exploration, drilling and evaluation costs for 2006-2019, funded by partners and capitalised as ENH debt.
Development Debt (Coral Sul FLNG CAPEX)	$805	59,4%	10% of the Coral Sul FLNG development CAPEX ($9.497 billion), financed by the partners during 2017-2022 and transferred to ENH as debt.
TOTAL	**$1,356**	**100%**	**Source: IGEPE (2023), Table IX.24. Interest rate: 6% (LIBOR + 1%), CCPP Area 4, Art. 9.13(f).**

6.1.2 The Debt Service Trajectory: Eleven Years of Retained Earnings

The fiscal model tailored for the Coral Sul FLNG project makes it possible to accurately project the trajectory of ENH's debt service and the point at which the State's stake begins to generate actual net benefits for the government. The results are clear and deserve political attention.

Figure 6-1: Stages of ENH Participation: From Liabilities to Assets (Base Case, in millions of USD)



Source: Coral Sul FLNG Tax Model. Total debt service: $1.987 billion (principal repayment of $1.356 billion + interest of $631 million). Interest represents the effective financial cost of the carried interest.

The figure reveals a structural asymmetry that rarely appears in official accounts of the government's involvement in Coral Sul. For eleven years, from 2022 to 2032, ENH formally receives 10% of the project's dividends but does not transfer a single net dollar to the government. Each payment is used entirely to service the debt incurred to finance its membership in the consortium. The effective financial cost of this carried interest structure is $631 million in interest, paid over fifteen years at a rate of 6% on an initial principal amount of $1.356 billion. The actual net benefit to the state will not begin until 2033 and will total $1.65 billion between 2033 and 2048, a positive return, but one concentrated during the decline phase of production, when the project will have already lost more than 30% of its nominal capacity.

> **The actual financial cost of the government's 10% stake in Coral Sul FLNG amounts to $631 million in interest, paid over a period of eleven years. This amount – equivalent to 2.5 times the total tax revenue from the first four years of production ($253 million) – is the price the government paid for the carried interest. In contrast, the net benefit from the investment will be $1.65 billion, starting in 2033. The cost-benefit ratio is positive in absolute terms – but there is a time lag of more than a decade between the costs (2022-2032) and the benefits (2033-2048).**

6.1.3 Carried Interest as a Quasi-Sovereign Liability

The literature on State participation in extractive projects distinguishes between equity participation and carried interest. The second option is often presented as advantageous for governments facing fiscal constraints, as it eliminates capital risk during the operational phase and secures a share in the project without requiring an immediate disbursement. Collier (2010) and Daniel et al. (2010) warn, however, of the often underestimated implications. Carried interest becomes debt owed by the government or the state-owned enterprise, with actual interest charges that take up the dividends in the early years.

In the case of ENH, this is exactly how it works. The debt of $1.356 billion is not explicitly included in Mozambique's sovereign debt. It is listed on ENH's balance sheet as a state-owned subsidiary. However, any inability on the part of ENH to service this debt, for example, in a scenario of persistently low LNG

prices, would become a sovereign risk. The government would be required to guarantee or assume the debt of its national hydrocarbon company. This is the mechanism by which carried interest functions as a quasi-sovereign liability, regardless of its current accounting classification.

6.2 The Coral Norte FLNG: A New Debt Cycle Is Taking Shape

The approval of the FID for the Coral Norte FLNG project in October 2025, with a total investment of $7.2 billion and production scheduled to begin in 2028 (TechnipFMC, 2025; ENI, 2025), marks the start of a new cycle of ENH debt that the public debate in Mozambique has not yet fully taken on board. If Coral Sul's carried interest structure is replicated in Coral Norte, which is the most likely scenario given that both projects operate under the same CCPP Area 4, ENH will incur additional debt of approximately $720 million, resulting from its 10% stake in the new project.

In this regard, the Coral Norte project will increase ENH's current debt by approximately 53% if the carried interest structure is maintained.

> **The combined ENH debt of approximately $2.1 billion for the two Coral projects represents 9.3% of Mozambique's nominal GDP in 2025. This amount is not included in the projections for Mozambique's public debt service that are being discussed in negotiations with international creditors because it is recorded on ENH's balance sheet, not the government's. This systematic omission of quasi-sovereign liabilities of public extractive companies is a well-documented weakness in public financial management in resource-dependent economies (IMF, 2026a; Mihalyi & Omatsola, 2019).**

6.3 TotalEnergies' $4.5 billion: The Contingent Liability with the Greatest Impact

The largest and most uncertain contingent liability currently in Mozambique's LNG portfolio is the $4.5 billion in costs claimed by TotalEnergies as having been incurred during the Mozambique LNG force majeure period (April 2021-November 2025). If validated as fully recoverable under the terms of the Block 1 Production Sharing Agreement (PSA), these costs will increase the project's base cost from $20 billion to $24.5 billion, with direct and measurable consequences for the Mozambican government's tax revenue outlook.

6.3.1 Resolution 42/2025 and the Independent Audit

Council of Ministers Resolution No. 42/2025, published in the Official Gazette on November 19, 2025, is the primary document governing this contingent liability. Article 4 stipulates that the validation of force majeure costs must reflect "the revenue levels for both parties" and "safeguard the national interest," language that signals the Mozambican government's intention to contest, at least in part, TotalEnergies' claim. The independent audit mandated by the Resolution was underway at the time this study was written (March 2026), and the results have not yet been released. A sensitivity analysis of the impact of these costs over the fiscal horizon, based on a base price scenario of $12/MMBtu, indicates:

Table 6-2: Impact of Force Majeure Costs on the Fiscal Framework (Base Scenario: $12/MMBtu)

Cost Validation Scenario ($4.5 billion)	Total Cost of Mozambique LNG	Impact on Tax Revenues in Area 1	Implications for the State
Scenario A: 0% validated (State disputes in full)	$20 billion (original FID)	Neutral, with no changes to the base model.	The best-case scenario for the state. This is unlikely given the contractual framework and international arbitration practices.
Scenario B: 50% validated ($2.25 billion recoverable)	$22.25 billion (+11.3% vs. FID)	Tax revenues in Area 1 are expected to decline in the short to medium term. The IRPC is likely to be postponed for 3-5 years.	Most likely scenario based on an analysis of international comparables. Nevertheless, it represents a significant cost for the Mozambican government.
Scenario C: 100% validated ($4.5 billion fully recoverable)	$24.5 billion (+22.5% vs. FID)	Mozambique LNG's IRPC may be postponed until 2040 or later. Profit Oil is projected to decline significantly between 2030 and 2040.	Worst-case scenario for the State. It would shift tax revenues beyond the medium-term planning horizon.

The impact on Scenarios B and C is qualitative. The fiscal model in this study covers the Coral Sul FLNG project (Area 4) and not the Mozambique LNG project (Area 1, separate CCPP). The analysis is based on the standard structure of production-sharing agreements with a 75% cost recovery limit, applied by analogy to Area 1. Sources: Resolution 42/2025 (Council of Ministers, 2025); TotalEnergies (2026).

The analytical significance of Scenario C lies not in its probability, but in its magnitude. Postponing Mozambique LNG's IRPC beyond 2040, against the backdrop of an accelerated energy transition, calls into question the feasibility of the Mozambican government receiving substantial tax revenues from this project before market conditions deteriorate structurally. Scenario C is not an academic extreme; it is the direct result of fully validating a claim of $4.5 billion in a $20 billion project.

> **The independent audit mandated by Resolution 42/2025 is currently the factor with the greatest impact on Mozambique LNG's medium-term fiscal framework. The outcome will determine whether the government recovers part of the force majeure costs or absorbs them in full as part of the project's recovery costs. Transparency regarding the process and results of this audit is a requirement of sound fiscal governance, and its prolonged absence is, in itself, an indicator of the lack of transparency documented in this study.**

6.4 Consolidated Statement/ Framework of Contingent Liabilities

The set of liabilities, both quantified and contingent, associated with Mozambique's LNG portfolio can be summarised in the table below, which distinguishes between the degree of certainty, the magnitude and the time horizon of each component.

Table 6-3: Tax and Quasi-Tax Liabilities of Mozambican LNG (March 2026)

Liabilities	Magnitude ($M)	Certainty	Horizon	Fiscal Impact	Source
ENH Debt - Coral Sul (carried interest, Area 4)	$1.356 billion	High (verified)	2022–2033 (amortisation)	ENH dividends = $0 through 2033. Interest of $631 million over 11 years.	RPCGE-IGEPE (2023), Table IX.24
ENH Debt - Coral Norte (estimated carried interest)	$720 million	Average (estimate)	Estimated 2026–2037	New cycle of retained earnings. Contractual details not disclosed.	ENI (2025); CCPP Area 4, Art. 9.13
ENH Debt - Mozambique LNG (*carried interest* Area 1)	$2.535 billion (through December 31, 2023)	High (verified: IGEPE/RPCGE 2023, Table IX.24)	Cumulative through 2023. Amortisation starting from the project's restart	ENH dividends = $0 during the amortisation period (approx. 12 years). The R factor remains below 1 for about 14 years (10% profit for the government vs. 15% at Coral Sul).	IGEPE (2023), Table IX.24 of the RPCGE 2023: $1.07 billion (exploration) + $1.465 billion (development, 15% equity stake in the Golfinho Atum project). Note: The Administrative Court did not publish this map as part of the RPCGE 2024.
Force majeure costs at Mozambique LNG (TotalEnergies)	$4.5 billion (claimed)	Low (under audit)	2030–2045+ if validated	Deferral of IRPC and Profit Oil Area 1 for 5–10 years in Scenario C.	Resolution 42/2025; TotalEnergies (2026)
Uncertainty Regarding the Rovuma LNG Project (ExxonMobil)	N/A (est. $30 billion+)	Very low (FID not taken)	2030–2035+ if FID proceeds	ENH may take on a new carried interest of $3 billion.	INP (2025); ExxonMobil (2025)

The "Certainty" column refers to the degree of certainty regarding the realisation of the liability, not its amount. Rovuma LNG is classified as a contingent liability as the FID has not been taken following three postponements; however, if the standard carried interest structure were to be adopted, it would result in ENH's highest level of debt to date.

> **ENH's total verified liabilities, according to RPCGE 2023 (Table IX.24 of the IGEPE), amount to $3.892 billion. Approximately $2,535 million for Area 1 (Mozambique LNG / Golfinho Atum) and $1,356 million for Area 4 (Coral Sul). Including Coral Norte (approx. $720 million (maturity October 2025), the total quasi-sovereign debt amounts to approximately $4,612 million (20.6% of nominal GDP in 2025). This amount is not included in the sovereign debt sustainability tables. Critical note on transparency: The Administrative Court did not publish the map corresponding to Table IX.24 under the RPCGE 2024, thereby eliminating the only public source that broke down ENH debt by project.**

6.5 Sovereign Debt and LNG: The Trap of Rent Anticipation

The concept of the "rent anticipation trap" was formalised by Mihalyi and Omatsola (2019) based on an analysis of eleven African countries that incurred sovereign debt based on expectations of natural resource revenues that did not materialise within the expected timeframe. The mechanism unfolds in three stages: (i) the discovery or development of resources raises expectations of future revenues; (ii) the government increases its debt to finance current or capital expenditures before the revenues materialise; and (iii) when revenues arrive late or fall short of expectations, the government faces a liquidity crisis as debt matures and the resources fail to generate the anticipated revenues.

The case of Mozambique exhibits characteristics that partially fit this pattern. The 2013 Eurobonds, which triggered the hidden debt scandal, were partly justified by the prospect of LNG revenues (Hanlon, 2017). The PESOE 2026 projects that revenues from the Coral Sul will account for 2.3% of the state's total revenue in 2026, a modest but growing contribution (Ministry of Economy and Finance, 2025). The key point is not that LNG won't generate revenue; the model shows that it will. The critical factor is timing. Significant revenue is expected between 2027 and 2033 for Coral Sul, and potentially only in the 2030s and 2040s for Mozambique LNG. If the government has incurred debt based on revenue expectations prior to that time horizon, the time lag creates precisely the liquidity pressure described by Mihalyi and Omatsola (2019).

> **The key message of this section for policymakers is threefold. First, state participation in the LNG sector entails a real financial cost ($631 million in interest for Coral Sul) that must be explicitly factored into the sector's cost-benefit analyses. Second, Coral Norte is creating a quasi-sovereign debt cycle before the first cycle has been completed. Third, Mozambique LNG's contingent liabilities introduce an extraordinary degree of uncertainty ($4.5 billion in dispute) into the medium-term fiscal planning horizon. Taken together, these factors warrant an urgent review of the fiscal risk management framework associated with Mozambique's LNG portfolio.**

7 THE OPPORTUNITY COST OF THE LNG DEPENDENCE MODEL

An analysis of Coral Sul FLNG's tax revenues and associated liabilities provides a necessary but incomplete picture of the cost-benefit analysis of the LNG-based development model. The complete picture requires an additional dimension. An analysis of what failed to happen, or happened more slowly, because the Mozambican state's capital, political attention, and institutional capacity were directed toward the natural gas sector at the expense of alternatives with potentially more favourable fiscal, employment, and resilience characteristics.

The fact that this analysis draws on multilateral sources reinforces its relevance. In its March 2026 Mozambique Economic Update, the World Bank explicitly identifies the stagnant performance of agriculture, a sector that accounts for more than 70% of the active labour force, as one of the three pillars that keep rural poverty trapped in a cycle of low productivity, underinvestment and climate vulnerability. And this stagnation is, in part, a consequence of the systematic diversion of capital and institutional attention towards extractive megaprojects. The report warns that the cost of inaction (in addressing these imbalances) is rising and that the resulting economic instability could jeopardise more than $50 billion in cumulative foreign direct investment in Mozambique. This multifaceted analysis aligns with the findings of this section and reinforces the argument that the opportunity cost of the LNG dependence model is not merely academic speculation, but an observable and increasingly recognised reality.

The development model that placed Offshore *LNG* at the centre of the long-term economic strategy entailed implicit choices regarding the allocation of regulatory capital, contractual negotiation priorities and the structure of incentives for private investment, all of which entailed measurable opportunity costs. These costs are the focus of this section.

7.1 Three Dimensions of Opportunity Cost

The opportunity cost of the LNG dependence model can be analysed across three complementary dimensions, each supported by empirical evidence available for the Mozambican case.

The first factor is the opportunity cost of capital. The CAPEX for Coral Sul ($9.5 billion) and the total LNG portfolio ($20 billion for Mozambique LNG alone) represents capital that the private sector has invested in capital-intensive export assets, with limited local job creation. Had that same capital been directed toward sectors with higher labour intensity and stronger domestic supply chains, such as agro-business, renewable energy and critical minerals processed locally, it would have yielded different outcomes in terms of tax revenue, employment and development.

The second aspect is the opportunity cost of institutional capacity. Negotiating and overseeing highly complex LNG contracts requires decades of technical expertise from the government, MIREME, INP, ENH and the Tax Authority (AT). This capacity could have been partially directed toward building more effective regulatory frameworks in sectors with the greatest potential for structural transformation.

The third aspect is the opportunity cost of the Dutch disease. As documented in Box 5.1 and confirmed by the literature (Van der Ploeg, 2011; IEA, 2024a), the overvaluation of the metical, partially sustained by foreign exchange from extractive megaprojects, erodes the competitiveness of alternative export sectors, such as agro-business, tourism and light manufacturing, which are precisely the sectors with the greatest potential for job creation and the lowest risk of stranded assets.

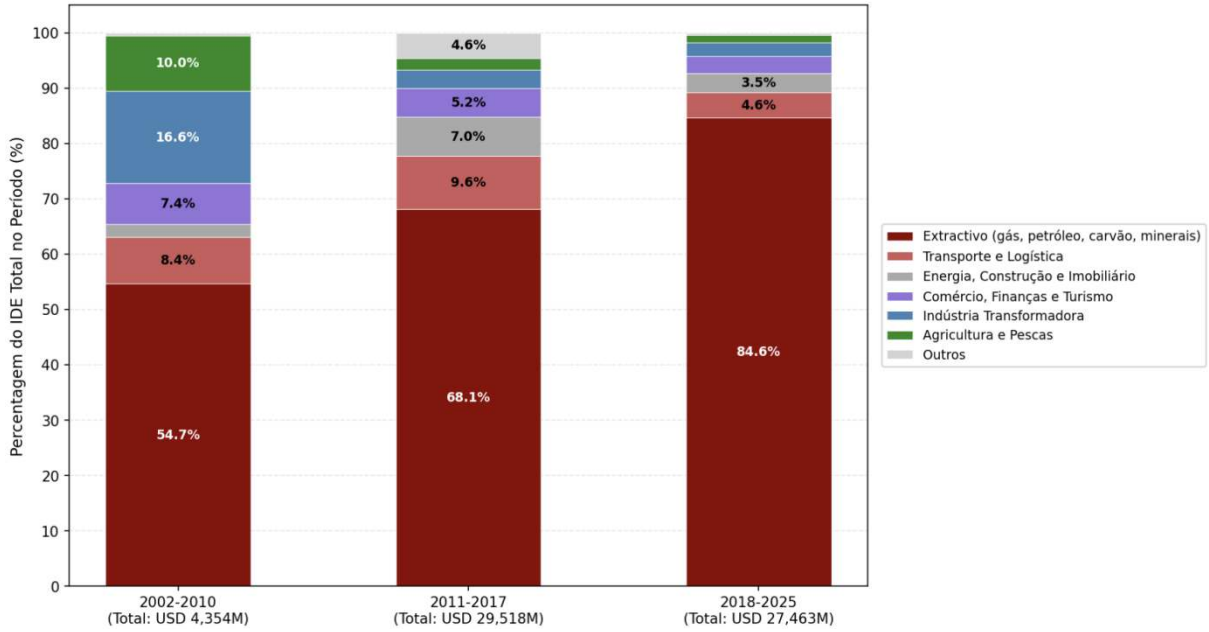
> **Opportunity cost is not a theoretical abstraction. It is the agro-business sector that has not grown as quickly as it could have; cashews that are exported in their raw form because there is no local processing; solar panels that have not been installed; and graphite that leaves Mozambique as a concentrate rather than as a battery product. These are the concrete and measurable costs of a development model that has relied on LNG as the central driver of economic transformation.**

7.2 Trends in Foreign Direct Investment (FDI) 2002–2025

Figure 7-1 summarises twenty-four years of Foreign Direct Investment (FDI) flows in Mozambique and highlights one of the most significant structural transformations of the Mozambican economy in the post-2000 period. Over three successive periods with substantially different volumes, the extractive sector's share of total FDI rose from 54.7% (2002-2010) to 68.1% (2011-2017) and reached 84.6% in the 2018-2025 period. When we add Transportation and Logistics, a sector in which investment in Mozambique is predominantly linked to extractive corridors (Pemba, Nacala, Maputo-Matola for coal from Zambezia), the extractive-logistics sector as a whole rises from 63.1% to 89.2% over a twenty-four-year period.

The data shows that the manufacturing sector accounted for 16.6% of FDI during the 2002-2010 period, with $724 million invested in food processing, textiles and consumer goods projects. Between 2018 and 2025, this share fell to 2.5%, with $693 million absorbed over the course of eight years. The agriculture and fisheries sector, which employs more than 70% of the country's active workforce, received 10% of FDI between 2002 and 2010, and will account for 1.4% between 2018 and 2025. In absolute terms, foreign investment in agriculture fell from $437 million over nine years (2002-2010) to $383 million over eight years (2018-2025), even though the total volume of FDI in Mozambique grew approximately sixfold during the same period.

Figure 7-1: Trends in the Sectoral Structure of FDI in Mozambique, 2002–2025 - Cumulative Annual Flows (in millions of USD)



Source: Bank of Mozambique, External Sector Statistics – 2026 (compiled by the Bank of Mozambique). Original calculations

This concentration is not the natural result of neutral market forces. It is the sector-specific manifestation of a development model that has spent three decades establishing contractual, regulatory and fiscal conditions that are particularly favourable to extractive megaprojects, without devoting comparable institutional attention to creating equivalent conditions for alternative sectors. The Tax Incentives Code (Law No. 4/2009 of January 12), the special customs regime for megaprojects, and the Rovuma Basin Exploration and Production Concession Agreements were negotiated, drafted and implemented with considerable technical care. The tax regime applicable to agro-business, the processing of critical minerals and renewable energy was treated as a secondary issue, even though these sectors initially offered superior characteristics in terms of job creation, domestic supply chains and the timing of tax revenues.

This structural conclusion is even more concerning when one considers the central argument of this study. The Coral Sul FLNG project, which for more than a decade has been publicised as a turning point for Mozambique's development, is expected to generate $4.028 billion in tax revenue for the government over 27 years under the base-case scenario, or an average of approximately $149 million per year. Over the same 27-year period, and following the trend observed from 2018 to 2025, the agricultural sector will receive a residual share of total FDI (about 1.4% of annual FDI inflows), without this concentration being justified by any tax, labour or risk advantages of LNG over its alternatives. Opportunity cost is not a theoretical abstraction; it is the aggregate sum of jobs not created, domestic supply chains not developed and export capacity not diversified, all resulting from twenty-four years of increasing concentration.

The analysis presented in this section is consistent with the World Bank's assessment (2026), as outlined in the March 2026 Mozambique Economic Update, which explicitly warns that the economic instability resulting from fiscal inaction and the concentration of risks in the LNG sector "could jeopardise more than $50 billion in foreign direct investment, particularly in LNG." The World Bank reaches this conclusion based on a macro-fiscal risk methodology that differs from the one used in this study. But there is a consensus that the current sectoral concentration constitutes a structural vulnerability, not a strength.

7.3 The Largest Employer with the Lowest Investment

Agriculture employs more than 70% of Mozambique's active workforce and accounts for approximately 24-25% of GDP (INE, 2026; World Bank, 2023). It is the largest sector in terms of employment and the most important for food security and the income of rural households. It is also the sector that has received the smallest share of foreign direct investment in Mozambique over the past fifteen years, a period dominated by LNG and coal.

The contrast is striking. The CAPEX for the Coral Sul FLNG project was $949.7 million, equivalent to 202 times the total investment in the MCC Compact II for agriculture in Zambézia ($47 million), the largest agricultural investment programme identifiable in recent public data. The Pemba-Lichinga agro-industrial zone project, funded by the African Development Bank, has a budget of $47 million over five years. The construction of the Coral Sul project cost more in six months than the state has invested in agricultural infrastructure over the past five years.

7.3.1 Cashew Nuts and Agro-business

Mozambique is one of the world's top ten producers of raw cashews, with 195,400 tons sold during the 2024-2025 season, a volume approaching the all-time record of 210,000 tons set in 1973, when the

country was the world's second-largest producer (Ministry of Agriculture and Fisheries of Mozambique, 2025). However, 90% of cashews are exported without being processed locally, limiting the capture of added value. The comparison with Vietnam, which, through deliberate public investment in industrial infrastructure, transformed itself from a producer of raw cashews into a global leader in cashew processing within two decades, is the most frequently cited analytical reference in the literature on agricultural industrialisation in Mozambique (Forest Carbon Partnership Facility, n.d.).

Processing just 10% of the cashews currently exported in their raw form locally would add approximately $100-150 million in annual export value (estimate based on price differentials between raw and processed cashews – World Bank, 2023; mozambiqueexpert.com, 2025). This amount is comparable to Coral Sul's total annual tax revenue in 2024-2025 (approximately $90 million per year), and it would be generated much sooner, create a large number of local jobs and not involve $1.4 billion in quasi-sovereign debt.

Table 7-1: Agriculture vs. LNG: Comparison of Developmental Characteristics

Dimension	Coral Sul FLNG (Offshore LNG)	Agribusiness (Reference)	Analytical Implication
Capital invested (USD)	$9.497 billion (development CAPEX, RPCGE 2024)	$47–100 million in integrated programmes (MCC Compact, Pemba-Lichinga, AfDB)	LNG accounted for roughly 100 to 200 times the investment allocated to structural agricultural programmes over the past decade.
Direct jobs created	Approximately 3,000 direct jobs (operations, estimate)	More than 70% of the country's active workforce is employed in family farming	LNG is highly capital-intensive; agriculture is the country's largest employer.
Capital per job	$3.2 million per job	$3,000 to $15,000 per job (modern agribusiness)	Every $1 million invested in agribusiness generates 200 to 1,000 times more direct jobs than offshore LNG.
Start of substantive tax revenue	2033 (IRPC); 2033 (net ENH dividends)	1 to 3 years after investment (short agricultural cycles)	A 10-year difference in the start of the substantive tax return between the two models.
Risk of stranded assets	High - exposure to the energy transition, global oversupply of LNG, and a long-term decline in prices	Low – demand for food is growing structurally due to population growth and urbanisation	The risk of stranded assets in the agribusiness sector is incomparably lower than in the offshore LNG sector.
Links to the local economy	Restricted - importation of goods, specialised technical services, and equipment; minimal local content during the production phase	High-value sectors – local value chain, internal transportation, processing, packaging, marketing	The agro-business sector has internal economic multipliers that are considerably higher than those of offshore LNG.
Revenue volatility relative to price	High - tax revenues vary by a factor of 7.8 between the Stress scenario ($1.5B) and the Optimistic scenario ($11.4B)	Moderate – food prices are more stable and regional markets (SADC) are less volatile	Budgetary predictability is structurally higher in the agro-business sector.
Additional export potential to be tapped	Subject to contractual terms (cost recovery capped at 75%, ring-fencing, and a maximum Profit Oil share of 25% in the base project)	$100–150 million per year in added value from processing just 10% of the cashews currently exported in their raw form (World Bank, 2023)	Local processing of a portion of the agricultural raw materials already generates revenue comparable to Coral Sul's annual tax revenue.

Note: The data on direct employment at Coral Sul are estimates based on industry reports. The exact figures have not been made public. Capital per employee is a conservative estimate based solely on development CAPEX (it does not include operating CAPEX or OPEX). The data on agriculture and agribusiness are from the Ministry of Agriculture and Fisheries (2025), the World Bank (2023), and MCC Compact II.

7.4 The Paradox of a Country with 98% Renewable Electricity but No Universal Electrification

Mozambique presents a striking energy paradox. It generates approximately 98% of its electricity from renewable sources, primarily hydropower, through the Cahora Bassa Dam. However, only 60% of the population has access to electricity (World Bank, 2025; IEA, 2024b). Two-thirds of Cahora Bassa's output is exported to South Africa under a long-term contract. At the same time, the country has one of the greatest untapped potentials for renewable energy on the African continent.

Table 7-2: Mozambique's Renewable Energy Potential vs. Current Installed Capacity

Source	Estimated Technical Capacity	Installed Capacity (2025)	Investment Opportunity
Water	18,000–23,000 MW (Africa's largest hydroelectric potential)	2,100 MW (mainly Cahora Bassa)	Mphanda Nkuwa (1,500 MW, $5 billion, operational in 2031) is the most advanced project. The northern expansion of Cahora Bassa (1,245 MW) is under consideration.
Solar	23,000 MW (solar irradiance: 2,100 kWh/m²/year)	<200 MW installed	Projects ranging from 100 to 160 MW are under development in Cabo Delgado and Nampula. AMER and ALER project a 227% increase in total installed capacity by 2030.
Wind power / aeolian	4,500–5,600 MW (wind speeds >7 m/s in coastal areas)	<200 MW (Namaacha 120 MW under construction)	Significant potential in Gaza, Maputo, and Inhambane. Bidding is currently underway for 50 MW in Inhambane.
Biomass	Estimated 2,000 MW	Marginal	Agricultural and forestry waste with potential for decentralised rural electrification – as a complement to hydroelectric and solar power.
TOTAL RENEWABLE	47,000 MW of potential	2,900 MW installed (6% of the potential)	Estimated investment needed: $80 billion by 2050 to implement the Energy Transition Strategy (ETE, 2023) – AMER/ALER (2025).

Sources: IEA (2024b); AMER/ALER (2025); energypedia.info (2024); IEA Mozambique Energy Policy Review (2024). Technical potential is the maximum estimate of resources; it does not reflect economic feasibility or network constraints.

The Mphanda Nkuwa project is the most relevant benchmark for direct comparison with LNG. With an estimated cost of $5 billion, half of the Coral Sul project's capital expenditures, the project will generate 1,500 MW of renewable hydroelectric capacity, create a 1,300-kilometer transmission line connecting the north-central region to the south of the country, and transform Mozambique into an exporter of clean electricity to Southern Africa. Its tax revenues will begin to come in before Mozambique LNG generates significant revenue. Its risk of having an asset become stranded is incomparably lower. And its contribution to universal electrification, the most critical bottleneck to domestic economic productivity, is direct and immediate.

> ***A comparison between Mphanda Nkuwa ($5 billion, 1,500 MW, operational in 2031, low risk) and Mozambique LNG ($20 billion, substantial tax revenues in the 2030s–2040s, high risk of becoming a stranded asset) does not suggest that one should replace the other. It suggests that the development model, which prioritised institutional capacity and political attention for LNG at***

> ***the expense of accelerating the expansion of renewables and universal electrification, has had real costs – costs that are now evident in the 40% of the population still without electricity and in the country's southern regions' dependence on energy imports from South Africa.***

7.5 Critical Minerals: The Strategic Sector Competing with LNG for Capital and Political Attention

Mozambique is the world's largest producer of high-quality graphite, with 8% of global reserves concentrated mainly in the Balama Complex in Cabo Delgado. Graphite is a critical mineral for the lithium-ion batteries that power electric vehicles and renewable energy storage, one of the most dynamic growth sectors in the global economy. Global demand for graphite is expected to double by 2040 under the declared policy scenario and grow even further under the accelerated transition scenario (IEA, 2025).

The Mozambican paradox in the graphite sector is telling. Mozambique exports more than 80% of its graphite as raw concentrate, thereby missing out on the added value generated by processing it into purified spherical graphite for batteries – a product that could add an additional $200 million to annual export revenue (mozambiqueexpert.com, 2025). At the same time, Syrah Resources signed an agreement with Tesla to supply graphite from the Balama mine to a new processing facility in the U.S., funded by the U.S. Department of Energy. The value added is generated in the United States; Mozambique exports the ore.

Table 7-3: Mozambique as a Supplier of Critical Minerals: Potential vs. Reality (2024–2025)

Mineral	Mozambique's Global Ranking	Current Production	Gross Export Value	Value-Added Gap
Graphite	The world's leading producer of high-quality products. 8% of global reserves.	77,700 tons (2023, decline in 2024)	$1.09 billion (2023)	>80% is exported as raw concentrate. Local processing of spherical graphite for batteries would add $200 million per year. Primary buyer: China (60% of China's graphite imports in 2023).
Titanium (heavy sands)	One of the world's largest producers. Moma – Over 100 years of archives.	Moma Mine (Kenmare Reservoir)	$260 million in mineral exports	Exports consist almost exclusively of raw ilmenite and rutile. There is no local processing of TiO_2 pigment.
Rubies	The world's largest ruby mining operation (Montepuez).	3.9 million carats (2024, +46%)	Included in gemstone exports	Cut and polished outside of Mozambique. Certification of origin and chain of custody are opportunities for adding value.
Coal	Estimated reserves of 23 billion tons.	Top exports by value since 2018	35% of total exports	A sector in rapid decline amid the energy transition. Growing risk of stranded assets – the opposite of graphite.

Sources: BOH Infrastructure (2025); Chambers & Partners (2025); mozambiqueexpert.com (2025); IEA Global Critical Minerals Outlook 2025; U.S. Department of State (2024).

The link between critical minerals and the central argument of this study is direct. Mozambique has a narrow strategic window of opportunity to position itself as a supplier of processed critical minerals, not just raw minerals, to the global energy transition value chain. This window of opportunity is now partially open, as importing countries (Europe, the U.S., Japan, and South Korea) seek to diversify their supply chains, which are currently dominated by China. But that window of opportunity will close if Mozambique continues to export raw concentrates without investing in local processing capacity.

LNG and critical minerals compete to some extent for the same institutional and regulatory capital. The technical capacity of the INP, MIREME and MEF is limited. The ongoing legislative reforms to the 2025 Mining Code, which introduced requirements for local content and state participation in strategic

minerals, are a step in the right direction. But its effective implementation requires precisely the kind of oversight and negotiation capacity that has largely been absorbed by LNG contracts over the past decade.

7.6 When Foreign Investment Does Not Diversify

Total foreign direct investment in Mozambique amounted to $61.336 billion between 2002 and 2025, according to statistics from the Bank of Mozambique. Of this total, $45.729 billion (74.6%) was absorbed by the extractive industries, and an additional $4.460 billion (7.3%) by transportation and logistics, linked to the extractive corridors. Taken together, the extractive and logistics sector accounted for 81.9% of FDI over the past twenty-four years. When comparing the data by period, the trend is clear and steadily increasing. The share of agriculture and fisheries in FDI fell from 10% during the 2002-2010 period to 1.4% between 2018 and 2025; that of manufacturing fell from 16.6% to 2.5%; and that of trade, finance, and tourism combined fell from 7.4% to 3%.

This concentration is neither accidental nor the result of neutral market forces. It is the sector-specific manifestation of a contractual and regulatory model that has created the most favourable conditions for investment in LNG, coal and exportable raw minerals, while failing to create equivalent conditions for sectors with the potential for structural transformation. The CCPP Area 4 project was negotiated in detail and with great care over the course of several years, with the involvement of specialised international technical advisors and successive revisions. The Tax Benefits Code for the agribusiness sector is widely recognised as inadequate for the sector's needs. In 2025, the Minister of Finance publicly acknowledged the need to revise this code (African Business, 2025). The gap between the technical sophistication of extractive contracts and that of most regimes in other sectors largely explains the concentration shown in Figure 7-1.

The most immediately actionable reform proposal this study can offer in this regard is not "less LNG," but rather "a more balanced incentive structure." The same level of due diligence and technical expertise that went into the CCPP Area 4 project should be applied to agricultural concession contracts, critical mineral processing schemes, renewable energy Power Purchase Agreements and large-scale tourism contracts. These are not less complex sectors; rather, they are sectors that have received less institutional attention from the government because LNG was treated as an absolute priority for more than a decade. The reform of the Tax Benefits Code, scheduled for 2025–2026, presents an important opportunity to correct this long-standing imbalance.

7.7 Opportunity Cost in Numbers

Accurately quantifying the opportunity cost of the LNG dependence model is beyond the scope of this study and would require computable general equilibrium (CGE) models, which are not the primary analytical tool used in this research. The methodology adopted in this section is a comparative analysis structured around three dimensions (opportunity cost of capital, institutional capacity and exchange rates), supported by three sets of primary data (microdata from the Bank of Mozambique on sectoral FDI for 2002–2025, data from the Ministry of Labour on employment and wage structure, and data from APIEX on investment-to-employment ratios) and referenced against international benchmarks. The complete methodological description, including acknowledged limitations, can be found in subsection 4.7 of the Methodology. Table 7-4 summarises the available qualitative and semi-quantitative data in a comparative format, without replacing the CGE analyses that future research should undertake.

Table 7-4: Opportunity Cost of the LNG Model: Comparative Summary

Dimension	LNG Offshore (current model)	Structural Alternatives (*benchmarks* available)	Opportunity Cost Identified
Job creation per unit of capital	$3.2 million per job (Coral Sul, CAPEX $9.5 billion / 3,000 direct jobs)	$3,000–$15,000 per job (agro-business, renewable energy); $33,000 per job (manufacturing, APIEX 2024)	The same capital generates 200 to 1,000 times more jobs in alternative sectors.
Timing of Substantive Tax Revenues	2033 (IRPC, Base Model) – 11 years after the start of commercial production	1 to 3 years post-investment (agricultural cycles, solar and wind projects)	A 10-year gap between alternatives and LNG before substantial tax returns begin.
Amount of tax revenue	A total of $4.028 billion over 27 years (Base Case); an annual average of $149 million	Local processing of 10% of cashews would add $100-150 million per year in export value; graphite processing would add $200 million per year	Some alternatives individually generate annual value comparable to the average tax revenue of Coral Sul.
Revenue volatility relative to price	Tax revenues vary by a factor of 7.8 between the Stress scenario ($1.5 billion; 5.7% of GDP) and the Optimistic scenario ($11.4 billion; 20.1% of GDP)	Alternative sectors exhibit significantly lower volatility; food products are experiencing growing structural demand	Budgetary predictability is structurally higher in the alternative sectors.
Sectoral breakdown of FDI received	74.6% of total FDI for 2002–2025 ($45.7 billion) went to the extractive sector; 84.6% for the period 2018–2025	Agriculture and Fisheries: 1.4% of FDI in 2018–2025 (down from 10.0% in 2002–2010); Manufacturing: 2.5% (down from 16.6%)	Sectoral concentration does not reflect fiscal or labour market superiority; rather, it reflects an imbalance in institutional care.
Risk of stranded assets	High - exposure to an accelerated energy transition, global oversupply of LNG after 2027, structural decline in prices	Low (renewables and agribusiness) to very low (food)	Under the Stress scenario ($8/MMBtu), Coral Sul's tax revenues fall by 64% compared to the Base scenario, with IRPC = zero over a 27-year period.
Economic diversification	Increases the concentration of GDP in the extractive export sector; exacerbates dependence on foreign exchange	Reduces concentration; broadens the domestic tax base; generates sectoral linkages	The Dutch disease documented in Box 5.1 and the literature (Van der Ploeg, 2011); competitiveness of non-extractive export sectors eroded.
Institutional capacity absorbed	Negotiating highly complex CCPP contracts has consumed decades of capacity at MIREME, INP, ENH, and AT	Alternative sectors have received less institutional attention, with less sophisticated contractual arrangements	The same technical rigor applied to extractive contracts should be applied to regulations for other sectors.

Sources: Fiscal model (this study); Bank of Mozambique, External Sector Statistics (2002–2025); APIEX (2024), Approved Investments; Ministry of Labour, Labour Statistics Bulletin (2024–2025); World Bank (2023); World Bank (2026); Ministry of Agriculture and Fisheries of Mozambique (2025); IEA (2024a, 2024b); Van der Ploeg, F. (2011), "Natural Resources: "Curse or Blessing?", Journal of Economic Literature 49(2), 366–420.

The main limitation of this section is the one acknowledged by the authors themselves and documented in subsection 4.7 of the Methodology. The opportunity cost of the LNG model is, by its very nature, a counterfactual: what would have happened if capital, institutional capacity and political attention had been directed elsewhere. Counterfactuals are, by definition, impossible to verify with precision. What this study offers is structured empirical evidence, based on primary data from the Bank of Mozambique, the Ministry of Labour, APIEX and documented international benchmarks, that (a) alternatives exist and have measurable characteristics in terms of employment, value added, risk and fiscal timing, (b) comparative indicators consistently favour the alternatives in at least four of the five dimensions analysed, and (c) the progressive concentration of FDI in the extractive sector, despite these inferior characteristics, is the result of a specific institutional architecture and not of neutral market forces. The central recommendation of this section, which is elaborated in Section 9, is to address this structural flaw by reforming the Tax Benefits Code and designing contractual frameworks for alternative sectors that employ the same technical sophistication used in extractive industry contracts

8 THE POLITICAL ECONOMY OF LNG DEPENDENCE

The preceding sections have empirically demonstrated what the theoretical sections had anticipated. Tax revenues from LNG are modest, back-loaded, volatile and accompanied by significant sub-sovereign liabilities. Alternative sectors have characteristics that are potentially more conducive to development, and the opportunity cost of the current model is quantifiable. The question raised by this section is different and necessarily more political: why, in light of this evidence, does the LNG-dependent model persist as the central pillar of Mozambique's development strategy?

The answer is neither simple nor straightforward. It requires an examination of the interests that shape the economic policy debate, the mechanisms through which the narrative of "gas as a catalyst for transformation" is produced and reproduced, and the conditions under which a paradigm shift becomes politically possible. This section is not intended to provide a comprehensive theory of the political economy of extractivism in Mozambique. It is a field of research in its own right, with a growing body of literature (Macuane et al., 2018; Salimo, 2020; Frey, 2021). The goal is more modest: to identify the political economy mechanisms most directly relevant to the arguments in this study and their implications for advocacy.

8.1 The Narrative of Transformation. Origin, Function, and Fragility

The narrative that portrays LNG as the driving force behind Mozambique's economic transformation has a clear origin. It was built up gradually following the major discoveries in the Rovuma region (2011–2014); it reached its rhetorical peak between 2014 and 2019, when the most optimistic revenue projections were circulating freely; and it survived the Cabo Delgado insurgency, the collapse of the IMF programme, and the modest start of production at Coral Sul, in part because it serves the converging interests of multiple actors.

Narrative serves different purposes for different actors. For the Government of Mozambique, this reinforces the legitimacy of the development model it has adopted and justifies short-term sacrifices in the name of future benefits. For oil companies (ENI, TotalEnergies, ExxonMobil), it legitimises the current contractual model and reduces pressure to renegotiate. For international creditors, who financed part of the sovereign debt based on expectations of these revenues, this justifies restructuring the debt under terms that bring forward future revenues. For development agencies supporting the sector, providing technical assistance for LNG is justified as a contribution to development.

What unites these actors is not a conspiracy of interests, but a structural convergence of incentives around a narrative that serves distinct yet complementary purposes for each of them. Prichard (2015) demonstrated this mechanism in the context of taxation in Africa. Discussions about government revenue are shaped by interest groups that have a lot to lose if expectations are revised. In the case of Mozambican LNG, the consortium is transnational, comprising Mozambican, European, Asian and American stakeholders.

Table 8-1: Key Players in the LNG Story: Interests and Roles

Actor	Interest in the Narrative of Transformation	Cost of Narrative Review	Mechanism of Influence
Government of Mozambique (executive branch)	The legitimacy of the model, justification for the debt and a vision of the future for the public.	Admitting that the model carries risks would be politically costly in the context of a post-2024 crisis of legitimacy.	Control over official communications, preferential access to tax information, and the appointment of leadership at ENH, INP, FSM, and other institutions linked to the sector
Oil companies (ENI, TotalEnergies, ExxonMobil)	Contract protection, reduced pressure to renegotiate, reputation for acting in good faith.	Admitting that the effective government take is 11.7% would increase pressure to renegotiate the CCPPs.	Direct relations with the government, internal reports on projected revenue, and SER communication campaigns.
International creditors (IMF, World Bank, private creditors)	Justification for debt restructurings based on future LNG revenues.	Overly optimistic projections create credit risks that lenders are unwilling to acknowledge.	Conditionality, debt sustainability reports, IMF Article IV.
Development agencies and donors	Justification for technical assistance to the sector; consistency of programmes supporting extractive governance.	Recognising the model's shortcomings would require revising programmes and strategies that have already been approved.	Training programmes offered by INP, MIREME, and AT; industry publications and conferences.

Qualitative analysis framework. This is not meant to be an attribution of intentions; it is a mapping of structural incentives. Sources: Macuane et al. (2018); Salimo (2020); the author's analysis based on public documents from the cited sources.

8.1.1 Information Asymmetry as a Political Tool

One specific mechanism underpinning the narrative of transformation is the information asymmetry regarding revenue projections. As documented in this study, there are at least three substantially different public estimates of Coral Sul's revenues: $16 billion (ENI, prior to the FID), $11.5 billion (Ministry of Finance, 2018, for creditors), and $24.5 billion (Minister of Mineral Resources, as quoted in the press). The adjusted model used in this study, based on verified historical data, projects $4.7 billion in the base-case scenario.

This dispersion is not accidental. It reflects the use of revenue projections for different audiences. Creditors are given conservative projections that justify the restructuring; the public is given optimistic projections that support the narrative of transformation; and oil companies produce their own estimates that maximise investor interest. In the absence of a publicly available, audited and verifiable fiscal model, there is no technical basis for challenging any of these estimates, which is, in itself, a mechanism of power.

> ***The most directly actionable contribution of this study to the advocacy debate is not merely the amount of projected revenue, but the model that generates it. A public, open-source model adjusted using verified historical data breaks down the information asymmetry that allows incompatible projections to coexist without political consequences. Methodological transparency is, in this sense, a tool of power for civil society.***

8.2 The Fiscal Contract and the Legitimacy Deficit

The fiscal contract theory, systematised by Prichard (2015) based on Tilly (1990) and Moore (2004), posits that the taxation of citizens creates reciprocal incentives for accountability. Taxpayers have incentives to demand accountability from the government. Governments that rely on taxes have an incentive to respond to citizens' demands. Conversely, countries that finance their budgets through extractive revenues, without relying on broad-based domestic taxation, face less pressure to be accountable.

Mozambique exhibits characteristics that correspond to the second model. Revenues from Coral Sul accounted for approximately 2% of the state's total tax revenues in 2024-2025. But the public narrative treats LNG as the cornerstone of future budgets, creating a situation in which the Mozambican people are indirectly dependent on revenues over which they have no say in negotiations, no access to contractual information, and no formal mechanism for appeal.

This situation is particularly acute in Cabo Delgado. The communities in the region where the LNG projects are located, which have borne the most direct costs of the insurgency and forced displacement, are precisely those that receive the fewest direct benefits from the projects. The local development mechanisms outlined in the contracts (EU funds, local content, infrastructure) are modest in relation to the scale of the investment and have been subject to documented implementation irregularities (Human Rights Watch, 2021). The tax regime, which concentrates benefits in the second half of the project's lifespan and generates net revenue for the government only starting in 2033, does not provide sufficient resources to address local development needs in a timely manner.

8.2.1 The Paradox of Selective Transparency: The EITI and Its Limitations

Mozambique joined the Extractive Industries Transparency Initiative (EITI) in 2009 and produces annual revenue reconciliation reports. The EITI is a genuinely useful tool. It provides verified data on actual tax flows, includes data from the Tax Authority and businesses, and enables cross-period comparisons. The RPCGE data used in this study to calibrate the model are, in part, derived from the EITI process.

However, the EITI has structural limitations that are relevant to this argument. Firstly, it reports what was paid, not what should have been paid according to the contracts. Without access to the full contracts (the CCPPs are public, but the supplementary agreements and the SPA formulas are confidential), it is not possible to verify whether the government is receiving what it is owed under the terms of the contracts. Secondly, the EITI does not report liabilities; ENH's debt of $1.356 billion does not appear in EITI reports because it is a liability, not revenue. Thirdly, the EITI reports annual cash flows but does not project future cash flows, which are critical for budget planning.

> ***The most critical lack of transparency for the legal profession is not the absence of data on past revenues, but rather the absence of a public fiscal model that allows civil society, parliament and creditors to independently verify the revenue projections that underpin the most significant policy decisions. Debt restructuring, new projects and the allocation of the state budget. Without this model, the EITI's selective transparency coexists with structural opacity regarding the fiscal future of LNG.***

8.3 The Post-2024 Political Landscape: Crisis of Legitimacy and Window of Opportunity for Reform

The political landscape in Mozambique between 2024 and 2026 is marked by a crisis of legitimacy unprecedented in the post-independence era. The general elections of October 2024, whose legitimacy was widely contested by the opposition and international observers, sparked prolonged protests, resulting in dozens of deaths and an economic standstill in the first months of 2025. GDP contracted by 0.52% in 2025 (INE, 2026). The IMF programme collapsed in April 2025. The exchange rate is under increasing pressure.

Paradoxically, this crisis creates a window of opportunity for evidence-based advocacy. In times of political stability, the mechanisms that perpetuate the narrative of transformation operate smoothly; there is no incentive to question the optimistic projections. In times of crisis, when the promises of the dominant model have failed to materialise, there is more political room for data-driven alternatives.

Table 8-2: Identified Renovation Windows: Timing and Actors

Reform Window	*Timing*	Key Players	Conditions for Opening
Renegotiation of CCPPs (tax regime)	2026–2028 (prior to the Rovuma LNG FID)	Government, INP, oil companies, civil society	The Rovuma LNG FID as a catalyst. Approval of the FID is contingent upon the renegotiation of the terms. Previous: Tanzania renegotiated tax regimes prior to *onshore* FIDs.
Audit of Force Majeure Costs (Mozambique LNG)	2026 (audit in progress, Resolution 42/2025)	Government, TotalEnergies, independent auditors, lawmakers, civil society	Results of the audit mandated by Resolution 42/2025. Public access to the final report is an essential prerequisite for the legitimacy of the process.
Revision of the Tax Benefits Code (alternative sectors)	2026 (process already underway, Minister of Finance)	Ministry of Economy and Finance, AT, Parliament, private sector, development agencies	A reform already publicly announced by the Minister of Finance (African Business, 2025). An opportunity to introduce incentives comparable to those for LNG for the agro-industrial sector and critical minerals.
Contractual transparency and the public fiscal model	Immediate (does not require legislative reform)	Civil society, EITI-Mozambique, Parliament, IMF, programmatic donors	Publication of the adjusted fiscal model from this study as a public tool. Request to EITI-Mozambique to include forward-looking projections in its annual reports.
IMF Programme and Fiscal Conditionality	2026–2027 (negotiations ongoing)	IMF, Government, creditors, Parliament, civil society	Resumption of the IMF programme (ECF or RFI) as a vehicle for incorporating LNG fiscal risk management into macroeconomic conditionality.

Analysis based on public documents available in March 2026. The schedule for the renovation windows is tentative. The political landscape in Mozambique is changing rapidly. Sources: Resolution 42/2025; African Business (2025); IMF (2026a, 2026b); INP (2025).

8.4 The Role of the Insurgency: The Political Economy of Violence and LNG

The jihadist insurgency in Cabo Delgado, which began in 2017 and remains active in 2026 despite Rwandan and Mozambican military operations that recaptured the district of Palma, is inextricably linked to the political economy of Mozambican LNG. While not a direct cause, the available research (Morier-Genoud, 2020; Frey, 2021) rejects monocausal explanations that attribute the insurgency exclusively to LNG, but rather views it as a factor that amplifies and is amplified by the weaknesses of the extractivist model.

Three mechanisms of interaction have been empirically documented. Firstly, economic displacement. The establishment of exclusion zones around LNG projects has displaced fishing and farming communities, eliminating their livelihoods without adequate compensation and creating resentment that jihadist recruiters can exploit (Human Rights Watch, 2021). Secondly, the perception of being excluded from benefits. Residents of Cabo Delgado see massive investments whose tax revenues go to the government in Maputo, not to their communities. Thirdly, the insurgency itself as a factor contributing to the political cost of the model. The $4.5 billion in force majeure costs incurred by Mozambique LNG, which may now be partially recoverable, represent the most visible financial cost of the failure to manage the political and security conditions created by the extractivist model.

> ***The relationship between LNG and the insurgency in Cabo Delgado is not just a matter of security; it is a matter of the political economy of development. A model that shifts the costs (displacement, security risks, environmental degradation) onto local communities while concentrating the fiscal benefits in the capital – decades later – is a model that sets the stage for its own destabilisation. The $4.5 billion in force majeure costs are, in this sense, the partial price of a development model that has systematically underinvested in the social and political conditions necessary for its sustainability.***

8.5 The Role of Civil Society and Independent Research

The Centre for Public Integrity (CIP), which commissioned this study, and its partner organisations (Oxfam, CDD) are part of a tradition of applied research and tax advocacy in Mozambique. This research builds on the debate regarding hidden debt and includes significant methodological contributions, notably the pioneering work by Hubert (2019), who modelled Coral Sul's revenues based on public contract terms.

The conditions that make independent research politically effective, and those that limit it, deserve explicit analysis. Hubert's (2019) study was conducted without access to the information that the Mozambican authorities refused to provide for this study. Its effectiveness depended on the publicity provided by CCPP Area 4, the quality of the public data from the RPCGE, and Oxfam's credibility as a publisher.

This study applies the same conditions and incorporates adjustment using actual historical data from 2022-2025, a methodological step that enhances the credibility of the projections by demonstrating that the model reproduces the observed flows with a variance of less than 2%. In this context, methodological transparency is a political choice. By publishing the model and adjustment data, the authors provide civil society, Parliament and creditors with a verifiable tool for challenging alternative projections.

> ***The main limitation of this study—and of all independent research on Mozambique's extractive sector is the lack of access. The requests for information sent to the INP, ENH, MIREME, and AT from August to November 2025, as documented in Section 4 (Methodology), were denied on the grounds of confidentiality. This refusal is not merely a technical obstacle to the investigation; it is a political statement in itself. The Mozambican government considers that information regarding contracts that determine the distribution of national wealth is not in the public domain. This position is inconsistent with the EITI transparency commitments that the same government has signed.***

8.6 Political Economy and Implications for the Legal Profession /Advocacy

The political economy of Mozambique's LNG dependence model can be summarised in four propositions that have direct implications for the advocacy strategy:

- First: the narrative of transformation is upheld by a transnational coalition of interests whose incentives converge around its preservation. Effectively challenging this narrative requires verifiable evidence that breaks down the information asymmetry, not just alternative arguments.
- Second: The post-2024 deficit in political legitimacy creates a window of opportunity for reform that will not remain open indefinitely. Advocacy based on the findings of this study has greater potential impact over the next 12-24 months than at any other time in the past decade.
- Third: the most immediately actionable areas for reform – the audit of force majeure costs, the renegotiation of the Rovuma LNG FID, and the revision of the Tax Benefits Code – require detailed tax analyses, not merely arguments based on principle. The models and projections in this study are tools that can be directly applied in these negotiations.
- Fourth: the insurgency in Cabo Delgado and its force majeure cost of $4.5 billion have brought to light what was previously only a theoretical risk. The extractivist model entails costs to political stability that are not factored into any projections of public revenue. The auditing of these costs and their responsible allocation is a requirement of sound fiscal governance, a point that this study empirically supports.

> ***The key message of this section for advocates is this: the technical arguments presented in this study will only have political impact if they are advanced by stakeholders with access to the relevant decision-making processes, at the very moment those processes are underway. The goal of this research project is to develop the tools. The role of the legal profession is to use them at the right moments, with the right people and in a manner appropriate to each audience, from Parliament to the press, from international creditors to social movements in Cabo Delgado.***

9 CONCLUSIONS AND RECOMMENDATIONS

The basic question is simple: What does Coral Sul FLNG actually generate for the Mozambican government, when, and at what cost? The empirical findings derived from a model adjusted using verified historical data are more complex, and more troubling, than the prevailing narrative suggests. The results point to a clear conclusion: although gas is a highly valuable resource, the current model for its exploitation and revenue allocation is creating a significant gap between expectations and actual returns. This mismatch has direct implications for the sustainability of public finances and for the country's economic development potential. The analysis identifies five empirically supported findings, each with distinct implications for policy formulation and advocacy efforts.

Finding 1 - Tax revenues are modest relative to expectations and the broader context.

The Coral Sul FLNG project generated $253 million in tax revenue between 2022 and 2025, an average of $63 million per year, against a backdrop of a GDP of $22.4 billion and sovereign debt exceeding $12.5 billion. The baseline projection for the full 27-year duration of the project is $4.028 billion, or an average of $149 million per year, equivalent to 0.67% of annual GDP. In the stress scenario, the total falls to $1.456 billion over 27 years (an average of $54 million per year), with a *government take* of 5.7%. In three of the six scenarios analysed (Stress, TE Stress, TE Base), the total IRPC over the entire project lifetime is zero. The range between scenarios is 7.8 times, reflecting structural vulnerability to fluctuations in international LNG prices.

Finding 2 - The time structure of revenues is extremely *rear-loaded*.

About 69% of total projected tax revenue under the baseline scenario is concentrated in the production decline phase (2034–2048). The single largest tax instrument over time, the IRPC, accounting for 33% of total revenue, was zero between 2022 and 2025 (observed data), remains zero through 2032 (projection), and only begins to generate substantial revenue in 2033 ($20 million), peaking in 2034 ($313 million). Back to square one in the final six years of the project (2043–2048). ENH's net dividends to the government will be zero through 2033, totalling $1.788 billion over the following fifteen years. Only 1.9% of tax revenue is generated in the first two years of production; 69% is generated in the last fifteen years.

Finding 3 - State ownership is a liability before it is an asset.

ENH holds a 10% stake in the Area 4 consortium as carried interest but carries a debt of $1.356 billion that will fully consume gross dividends through 2033, at a cost of $548 million in interest over the period. Coral Norte will add approximately $720 million in new ENH debt starting in 2026. The government's total net tax revenue, calculated as direct tax revenue plus ENH's net dividends minus interest paid, amounts to $5.268 billion over 27 years. More importantly: this figure does not include the opportunity cost of the public capital raised to support ENH's stake, nor the costs of regulatory oversight, factors that would further reduce the actual benefit.

Finding 4 - Contingent liabilities introduce a degree of uncertainty of extraordinary magnitude.

The $4.5 billion in force majeure costs claimed by TotalEnergies, which are currently being verified through an independent audit pursuant to Resolution 42/2025, represent the most significant contingent liability for public finances in the medium term. Although these costs are allocated to Area 1 (Mozambique LNG) and do not directly affect Coral Sul due to the contractual *ring-fencing* of Area 4, they could delay the start of substantial revenue from Mozambique LNG by 5 to 10 years. In its March 2026 Mozambique Economic Update, the World Bank (2026) explicitly warns that economic and fiscal instability could jeopardise more than $50 billion in cumulative foreign direct investment, particularly in the LNG sector. The magnitude of these contingent liabilities considerably exceeds Coral Sul's projected tax revenues over a 27-year period.

Finding 5 - The opportunity cost of the model is real and measurable.

An analysis of the sectoral structure of FDI received by Mozambique between 2002 and 2025, based on primary data from the Bank of Mozambique, reveals a progressive and growing concentration in the extractive sector: from 54.7% in the 2002-2010 period to 84.6% in the 2018-2025 period. During the same period, the manufacturing sector's share of total FDI fell from 16.6% to 2.5%, and that of agriculture and fisheries from 10.0% to 1.4%. The structural alternatives to offshore LNG – local cashew and graphite processing, modern agro-business and renewable energy (Mphanda Nkuwa) – offer systematically more favourable characteristics in terms of revenue timing, job creation, and the risk of stranded assets. Processing just 10% of the cashews, which are currently exported in their raw form, locally would add $100-150 million per year to the value of national exports, a figure comparable to the average annual tax revenue of Coral Sul. Every $1 million invested in agribusiness generates 200 to 1,000 times more direct jobs than offshore LNG. This sectoral concentration does not reflect any fiscal or labour advantages of LNG; rather, it reflects a persistent asymmetry in institutional and regulatory oversight.

Finding 5 - The opportunity cost of the model is real and measurable

Article 9.10 of the CCPP Area 4 establishes five tiers for the allocation of Profit Oil between the State and the investor (15%, 25%, 35%, 45%, and 55%) based on the R Factor. This progressive structure was negotiated to protect the State in scenarios where the investor achieves high returns. The model shows that this protection does not materialise: over the course of the 27-year project, the government remains in the 15% bracket for 12 consecutive years (2023-2034) and in the 25% bracket for the following 14 years (2035-2048). The 35%, 45%, and 55% tax brackets are never applied. The weighted average rate is approximately 20.5%, well below the theoretical midpoint of the contract schedule (35%). The reason is structural: the R-factor is rising slowly due to the magnitude of recoverable costs, reaching a maximum of 1.25 in 2043. This outcome is particularly important for the Rovuma LNG and Coral Norte negotiations, where the tiered structure should be revised to ensure effective progressivity.

> ***These six findings do not constitute an argument against LNG. They serve as an argument against uncalibrated expectations regarding LNG. Mozambique has the right and the duty to exploit its natural resources. What this study shows is that the conditions under which this exploitation occurs, and the incentive structure surrounding it, are not neutral. They determine who benefits, when, and at what cost. Changing these conditions—even under existing contracts—is both politically and technically feasible.***

The implications of this study's findings for the Mozambican government's fiscal and budgetary planning are:

First: the LNG revenue projections used in the Economic and Social Plan and State Budget (PESOE) and in debt sustainability documents should reflect the adjusted baseline scenario of this model, not the optimistic estimates that have been circulating in public communications. The difference between the projections ($4 billion vs. ($11.5 billion - 24.5 billion) is large enough to have a material impact on the assessment of debt sustainability.

Second: ENH's debt (approximately $2.1 billion for the two Coral projects combined) must be explicitly included in the debt sustainability tables as a quasi-sovereign liability, regardless of its accounting classification as ENH debt rather than government debt. Methodological alignment with the IMF on this issue is essential. Article IV 2025 recognises the need for greater transparency regarding contingent liabilities (IMF, 2026a).

Third: Medium-term budget planning must explicitly address the *gap* between the government's actual revenues (modest and rear-loaded) and immediate financing needs, and regarding the implications of this *gap* for the debt trajectory. The concept of the "revenue anticipation trap" (Mihalyi & Omatsola, 2019) describes precisely the risk that Mozambique faces if the budget continues to be drawn up on the basis of revenue expectations that will materialise one, two or three decades after the financial obligations they are intended to cover.

9.1 Recommendations

A - Transparency and Fiscal Governance

RA1 Publish the adjusted fiscal model as a public tool

The fiscal model developed in this study, adjusted using historical data from the FSM and RPCGE for 2022-2025, should be published in open-source format (Excel and methodological documentation) and made available to EITI-Mozambique, Parliament and civil society organisations. Transparency breaks down the information asymmetry that allows incompatible projections to coexist without political consequences.

To: / Recipient: CIP/Oxfam (publication); EITI-Mozambique (inclusion in annual reports)

RA2 Incorporate *forward-looking* projections into EITI reports

The EITI-Mozambique reports cover past flows but do not project future flows. The adoption of a projection module based on the model used in this study would enable Parliament, creditors and the public to assess the fiscal trajectory of the extractive sector, not just its past performance. Previously: Uganda's EITI includes draft fiscal models in its reconciliation reports.

To: / Recipient: EITI-Mozambique; MIREME; MEF; EITI's international partners

RA3 Publish the full results of the force majeure cost audit

The results of the independent audit mandated by Resolution 42/2025 to validate the $4.5 billion claimed by TotalEnergies must be published in full. The transparency of the process is an essential prerequisite for the legitimacy of the outcome. Any partial or full settlement that is not accompanied by the publication of an audit report constitutes an unauditable transfer of funds from the government to the company.

To: / Recipient: Council of Ministers; INP; Assembly of the Republic (Budget and Planning Committee)

B - Tax Regime and Contracts

RB1 Make the Rovuma LNG FID contingent on the renegotiation of the tax regime

The Rovuma LNG FID (ExxonMobil, $30 billion, scheduled for 2026) is the Mozambican government's strongest bargaining chip regarding the tax regime. Approval of the FID must be contingent upon the renegotiation of three parameters: i) an increase in the *royalty* from 2% to 5-7.5% (based on post-2013 Tanzania); ii) a reduction in the *cost recovery* limit from 75% to 65%; iii) the introduction of a *dividend tax* mechanism on transfers abroad, which is absent from the current CCPP.

To: / Recipient: INP; MIREME; MEF; Office of the President (approval of the revised CCPP)

RB2 Structure ENH's stake in Coral Norte with a partial capital expenditure

The approval of the Coral Norte FID in October 2025 should be accompanied by a review of ENH's ownership structure. Coral Sul's experience shows that pure carried interest generates a debt of $1.356 billion, which would take eleven years of dividends to pay off. In Coral Norte's view, the state should negotiate a partially capitalised stake – even if it is 5% instead of 10% –that would reduce ENH's debt and accelerate the start of cash dividends.

To: / Recipient: ENH; IGEPE; MEF; ENI (contract negotiations with Coral Norte)

RB3 Revise the tier structure of the R Factor in futures contracts

The model shows that, for the Coral Sul project, the 35%, 45%, and 55% profit-sharing thresholds for Profit Oil, as established in Article 9.10 of the CCPP Area 4, are never triggered over the course of the project's 27-year lifespan. The phased approach, agreed upon in 2006, has not been implemented in practice because the R-factor thresholds are too high given the realistic cost recovery dynamics of deep-water FLNG projects. For Rovuma LNG, Coral Norte, and any new production contracts, the R-factor thresholds should be revised to levels that ensure effective progressivity. For example, $R < 0.5 = 15\%$, $0.5 \leq R < 1 = 30\%$, $1 \leq R < 1.5 = 45\%$, $R \geq 1.5 = 60\%$. This reform ensures that the government captures an increasing share of Profit Oil as the investor recoups their investment, in line with the original protective function of the progressive structure.

To: / Recipient: INP; MIREME; MEF; Office of the President (futures contract negotiations); technical advisory team.

C - Diversification and Alternative Sectors

RC1 Align the tax incentive code for sectors other than LNG

The revision of the Tax Benefits Code announced by the Minister of Finance should explicitly include the export-oriented agro-industry (cashew, soybean and sesame processing), the processing of critical minerals (spherical graphite for batteries, rutile), and renewable energy as strategic sectors with benefits comparable to those of LNG. The criterion should be: any sector that generates export revenues of more than $50 million per year and is labour-intensive should have access to tax benefits that are at least equivalent to those of the extractive sector.

To: / Recipient: MEF; AT; Parliament; Ministry of Industry and Trade

RC2 Adopt an explicit strategy for the local processing of critical minerals

Mozambique exports more than 80% of its graphite as raw concentrate, losing $200 million per year in added value – an amount that could be captured through local processing into spherical graphite for batteries. Mozambique's just energy transition strategy should include a progressive local content clause for critical

minerals: exports of raw concentrate should be subject to an increasing tax rate ranging from 0% (2026) to 15% (2030), with a full exemption for processing facilities located within the country.

To: / Recipient: MIREME; MEF; INP; Syrah Resources; investors in the battery industry

RC3 Accelerating the Mphanda Nkuwa FID as the cornerstone of the energy strategy

The Mphanda Nkuwa project (1,500 MW, $5 billion, operational in 2031) has risk profiles, *revenue* timing and contributions to universal electrification that are consistently more favourable than those of Mozambique LNG. The investment decision, backed by the UK and development banks (December 2025), should be expedited. The Mozambican government should negotiate a Power Purchase Agreement that maximises revenue transfers to EDM rather than to exports. The stated goal should be to provide electricity to 80% of the population by 2035.

To: / Recipient: MIREME; EDM; MEF; UK (BII); African Development Bank; Government of Zimbabwe (prospective buyer)

D - Political Economy and Governance

RD1 Incorporate ENH debt into the sovereign debt sustainability frameworks

ENH's quasi-sovereign debt (approximately $2.076 billion combined for Coral Sul and the estimated Coral Norte, plus an additional $2.535 billion for Mozambique LNG) should be explicitly reported as a contingent liability in the debt sustainability frameworks in negotiations with the IMF and bilateral creditors. Their exclusion from current accounts leads to a systematic underestimation of the government's financial obligations – precisely the kind of opacity that made the hidden debts of 2013-2016 possible.

To: / Recipient: MEF; IMF (negotiations for the ECF/RFI programme); bilateral creditors; IGEPE

RD2 Implement the Stabilisation Fund provided for in the FSM Act (Law No. 15/2023)

Tax revenues from LNG, once they reach more substantial volumes starting in 2027-2030, will be volatile, concentrated over a short period, and susceptible to pressure from immediate current expenditures. Law No. 15/2023, which established the Mozambique Sovereign Fund (FSM), already explicitly provides for a fiscal stabilisation mechanism as one of the Fund's two legal objectives, alongside intergenerational savings. The recommendation is not to enact a law, but to regulate and implement this mechanism. Establish by decree the activation threshold, the annual withdrawal limit (suggested: 15% of the balance), the categories of permitted expenditures (infrastructure, health, education and non-recurring expenditures), and the mechanism for parliamentary oversight. International experience (Botswana, Chile, Norway) confirms that the effectiveness of these funds depends on the rules governing their use, not on their legal existence.

To: / Recipient: Ministry of Economy and Finance; Parliament (Budget Committee); Bank of Mozambique; civil society

RD3 Ensure Cabo Delgado's representation in LNG oversight mechanisms

The current oversight structures for LNG revenues, the EITI, the INP Advisory Board and relevant parliamentary committees, lack sufficient representation from the communities in Cabo Delgado and other regions affected by the projects. The establishment of a formal mechanism for consulting local communities on the oversight of extractive contracts, including access to simplified fiscal information and complaint mechanisms, is a well-documented requirement for political legitimacy and a prerequisite for the long-term social sustainability of these projects.

To: / Recipient: INP; MIREME; Assembly of the Republic; civil society organisations in Cabo Delgado; donors (EU, UK, African Union)

This study does not argue that Mozambique should, or must, leave its natural gas in the ground. That was never the issue. The question was, and remains: under what conditions, with what tax regime, with

what structure of state participation, with what transparency mechanisms, and with what vision for complementary development can natural gas contribute to a fair and sustainable development model?

The findings of this study, based on verified data, auditable models and international comparisons, point to an urgent need to make adjustments to the current model. The tax regime for CCPP Area 4 is a 2006 agreement applied to a situation spanning 2022-2048, which could not have been foreseen in 2006. ENH's quasi-sovereign liabilities represent the unaccounted-for value of the government's stake. The $4.5 billion in force majeure costs is only part of the price paid for failing to manage the social and political conditions of extractive industries. And the opportunity cost of these underdeveloped sectors is the hidden price paid every year that cashews, graphite and renewable energy fail to receive the institutional attention they deserve.

None of these problems is inevitable; all have known solutions that have been documented in numerous international contexts and can be implemented with the appropriate political will and technical capacity. The contribution of this study is to make these solutions harder to ignore by grounding them in evidence that can be examined, challenged and improved. This is what applied research can do for the legal profession: not replace policy, but inform it with the honesty that data allows.

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APPENDIX

This appendix contains the complete annual data supporting the figures in Section 5.

A1 - Annual Tax Revenue by Instrument: Base Case $12/MMBtu (2022–2048)

This corresponds to Figure 5.1. Shading: blue = Ramp-up (2022–23); green = Plateau (2024–33); orange = Decline (2034–48). IRPC in grey = zero for that year.

Year	Phase	Royalty (IPP)	Profit Oil Status	IRPC	Bonus	Annual Total
2022	Ramp-up	$0.8 million	$0.0 million	$0.0 million	$0.0 million	$0.8 million
2023	Ramp-up	$25.8 million	$47.4 million	$0.0 million	$2.0 million	$75.2 million
2024	Plateau	$33.1M	$60.8M	$0.0 million	$5.0 million	$98.8 million
2025	Plateau	$31.7 million	$58.2 million	$0.0 million	$0.0 million	$89.9 million
2026	Plateau	$41.2 million	$75.7 million	$0.0 million	$0.0 million	$116.8 million
2027	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2028	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2029	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2030	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2031	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2032	Plateau	$42.2 million	$77.5 million	$0.0 million	$0.0 million	$119.7 million
2033	Plateau	$42.2 million	$77.5 million	$20.2 million	$0.0 million	$139.9 million
2034	Decline	$39.2 million	$72.1 million	$312.9 million	$0.0 million	$424.2 million
2035	Decline	$36.5 million	$111.7 million	$254.5 million	$0.0 million	$402.7 million
2036	Decline	$33.9 million	$103.9 million	$214.0 million	$0.0 million	$351.9 million
2037	Decline	$31.6 million	$96.6 million	$175.7 million	$0.0 million	$303.9 million
2038	Decline	$29.3 million	$89.9 million	$139.5 million	$0.0 million	$258.7 million
2039	Decline	$27.3 million	$83.6 million	$105.0 million	$0.0 million	$215.9 million

Year	Phase	Royalty (IPP)	Profit Oil Status	IRPC	Bonus	Annual Total
2040	Decline	$25.4 million	$77.7 million	$72.3 million	$0.0 million	$175.4M
2041	Decline	$23.6 million	$72.3 million	$41.1 million	$0.0 million	$137.0 million
2042	Decline	$22.0 million	$67.2 million	$11.3 million	$0.0 million	$100.5 million
2043	Decline	$20.4 million	$62.5 million	$0.0 million	$0.0 million	$82.9 million
2044	Decline	$19.0 million	$58.1 million	$0.0 million	$0.0 million	$77.1 million
2045	Decline	$17.7 million	$54.1 million	$0.0 million	$0.0 million	$71.7 million
2046	Decline	$16.4 million	$50.3 million	$0.0 million	$0.0 million	$66.7 million
2047	Decline	$15.3 million	$46.8 million	$0.0 million	$0.0 million	$62.0 million
2048	Decline	$14.2 million	$43.5 million	$0.0 million	$0.0 million	$57.7 million
TOTAL		**$799 million**	**$1.875 billion**	**$1.347 billion**	**$7 million**	**$4.028 billion**

Source: Coral Sul FLNG Tax Model

A2 - ENH Debt Trend and Net Dividends: Base Case $12/MMBtu (2022–2048)

Year	Div. Gross	Debt Balance Start	Interest (6%)	Amortisation	Debt Balance End	Div. Net	Net Accumulated
2022	$3.9 million	$1.356 million	$0.0 million	$3.9 million	$1.352 million	$0.0 million	$0.0 million
2023	$121.6 million	$1.352 million	$81.1 million	$40.5 million	$1.316 million	$0.0 million	$0.0 million
2024	$155.9 million	$1.316 million	$78.9 million	$77.0 million	$1.239 million	$0.0 million	$0.0 million
2025	$149.4 million	$1.239 million	$74.3 million	$75.1 million	$1.164 million	$0.0 million	$0.0 million
2026	$194.2 million	$1.164 million	$69.8 million	$124.4 million	$1.039 million	$0.0 million	$0.0 million
2027	$198.9 million	$1.039 million	$62.4 million	$136.6 million	$903 million	$0.0 million	$0.0 million
2028	$198.9 million	$903 million	$54.2 million	$144.7 million	$720 million	$0.0 million	$0.0 million
2029	$198.9 million	$720 million	$43.2 million	$155.7 million	$577 million	$0.0 million	$0.0 million
2030	$198.9 million	$577 million	$34.6 million	$164.3 million	$433 million	$0.0 million	$0.0 million
2031	$198.9 million	$433 million	$26.0 million	$173.0 million	$279 million	$0.0 million	$0.0 million
2032	$198.9 million	$279 million	$16.7 million	$182.2 million	$116 million	$0.0 million	$0.0 million
2033	$198.9 million	$116 million	$7.0 million	$116.0 million	$0 million	$76.0 million	$76.0 million
2034	$185.0 million	$0 million	$0.0 million	$0.0 million	$0 million	$185.0 million	$261.0 million
2035	$167.6 million	$0 million	$0.0 million	$0.0 million	$0 million	$167.6 million	$428.6 million
2036	$155.9 million	$0 million	$0.0 million	$0.0 million	$0 million	$155.9 million	$584.4 million
2037	$144.9 million	$0 million	$0.0 million	$0.0 million	$0 million	$144.9 million	$729.4 million
2038	$134.8 million	$0 million	$0.0 million	$0.0 million	$0 million	$134.8 million	$864.2 million
2039	$125.4 million	$0 million	$0.0 million	$0.0 million	$0 million	$125.4 million	$989.5 million
2040	$116.6 million	$0 million	$0.0 million	$0.0 million	$0 million	$116.6 million	$1,106.1 million

2041	$108.4 million	$0 million	$0.0 million	$0.0 million	$0 million	$108.4 million	$1,214.5 million
2042	$100.8 million	$0 million	$0.0 million	$0.0 million	$0 million	$100.8 million	$1,315.4 million
2043	$93.8 million	$0 million	$0.0 million	$0.0 million	$0 million	$93.8 million	$1,409.2 million
2044	$87.2 million	$0 million	$0.0 million	$0.0 million	$0 million	$87.2 million	$1,496.4 million
2045	$81.1 million	$0 million	$0.0 million	$0.0 million	$0 million	$81.1 million	$1,577.5 million
2046	$75.4 million	$0 million	$0.0 million	$0.0 million	$0 million	$75.4 million	$1,652.9 million
2047	$70.1 million	$0 million	$0.0 million	$0.0 million	$0 million	$70.1 million	$1,723.0 million
2048	$65.2 million	$0 million	$0.0 million	$0.0 million	$0 million	$65.2 million	$1,788.3 million
TOTAL	**$3.73 billion**		**$548 million**	**$1.393 million**		**$1.788 million**	**$1.788 million**

Source: Coral Sul FLNG Tax Model. Starting balance: $1.356 billion (IGEPE 2023). Interest rate: 6% per year.

Note: During the first 11 years (2022–2032), ENH's gross dividends will be entirely consumed by debt service (interest + principal payments). *Payback* in 2033, with cumulative net dividends of $1.788 billion over the final 16 years of the project.

CENTRO DE INTEGRIDADE PÚBLICA

Boa Governação - Transparência - Integridade