Briefing
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Natural Resource Governance Institute

Managing Expectations About Tanzania's Uncertain Gas Revenues

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Key messages

- The likelihood of foreign investment in Tanzania's liquefied natural gas (LNG) project is still very uncertain. If the project does proceed, the government revenues it generates are unlikely to be transformative. An economic model of the project suggests that, at the average LNG price over the past 15 years of USD 11 per mmBtu, government revenues would average approximately $2.9 billion a year (in real terms) over the period of gas production, equivalent to only $24 (or TZS 53,000) per person or 1.2 percent of GDP a year.
- Modest gas revenues mean the Oil and Gas Revenues Management Act's fiscal rules are likely to have limited impact. Based on the current outlook, this is not a cause for concern in and of itself. However, the framework does have weaknesses, including its pro-cyclicality and insufficient measures to boost development expenditure.
- The government's priority currently should be ensuring that Tanzania avoids the "presource curse," by which overly optimistic expectations of future gas revenues derail public finances. To do this, officials should: keep the public finances on track to adhere to the East Africa Monetary Union fiscal rules that become effective in 2020/21; build on the disclosure rules in the Revenue Management Act to increase transparency and accountability efforts in budget management; and manage public expectations about the likely impact of gas revenues.

ABOUT THIS DOCUMENT

This briefing is accompanied by an annex, "Baseline Assumptions of the 2018 Tanzania Natural Gas Model," available on NRGI's website.

INTRODUCTION

The discovery of large natural gas deposits off the Tanzanian coast from 2010, and subsequent plans for a liquefied natural gas (LNG) project, have led to expectations that the sector could transform the economy and drive human development. In 2014, the International Monetary Fund (IMF) suggested that this project—comprising three offshore blocks for which Shell and Equinor hold the majority interest[1]—could generate annual government revenues of up to USD 6 billion.[2]

These expectations led to the government passing the Oil and Gas Revenues Management Act in 2015.[3] The act sets out a comprehensive revenue management framework, including the establishment of an oil and gas fund and fiscal rules related to both gas revenues and wider public finances.

1 Shell holds the exploration and production rights to Blocks 1 and 4, with Ophir Energy and Pavilion Energy holding minority interests. Equinor holds the rights to Block 2, with ExxonMobil holding a minority interest.

2 IMF. *United Republic of Tanzania: Selected Issues* (2014), 8, www.imf.org/~/media/Websites/IMF/imported-full-text-pdf/external/pubs/ft/scr/2014/_cr14121.ashx.

3 For brevity's sake, we will henceforth refer to this as the Revenues Management Act.

The natural gas market has changed considerably since the revenue management framework was developed, however. The LNG price in Asian markets—Tanzania's likeliest export destination—has fallen significantly and is expected to remain low for the foreseeable future. This will not only affect the timing and magnitude of government revenues, but may also affect the level of investment in the sector. A decision on whether to go ahead with the LNG project is still uncertain. Negotiation of its regulatory framework is ongoing, and a final investment decision (FID) is now unlikely before 2023 at the earliest.[4]

Tanzania's gas sector is therefore at a crucial juncture. Given the expectations of a large gas revenue windfall, it is also an important time for the country's public finances. A number of other countries have seen their economies deteriorate only a few years after major resource discoveries because misguided expectations led to bad policy decisions.

Using an economic model that we built, we have assessed the sector's revenue potential and its implications for the legislated revenue management framework and wider public finances. The model and data we used are available on the Natural Resource Governance Institute's website: www.resourcedata.org/dataset/tanzania-lng-analysis.

This is an update of our previous analysis to account for new information and changes in company planning.[5]

REVENUE POTENTIAL OF THE GAS SECTOR

To assess the sector's revenue potential, we established a baseline comprised of assumptions about the LNG project and existing, smaller onshore projects. We also built up a picture of the wider economy and public finances and their possible trajectory. Our assumptions are informed by our discussions with government and company officials and our own research. While the government and Equinor have recently started negotiating a project that only comprises Block 2, we think a larger project also involving Blocks 1 and 4 is still more likely given the greater potential benefits.[6] However, notable changes from our previous analysis included a differently-sized LNG plant, lower capital expenditure and lower LNG shipment costs. Our main assumptions are discussed in the annex. (See margin box on page 1.)

Investment in the LNG project is still very uncertain

We estimate that investors need a long-term LNG price of around \$11 per million British thermal units (mmBtu) to earn the return they tend to require from LNG projects. We previously estimated that a price of up to \$14 could be needed for

4 Equinor suggests that it would take three years after establishing the key regulatory terms to reach this decision. Therefore if the key terms in the Host Government Agreement (HGA) are agreed by the end of 2019 as intended by the government, a FID could be made in early 2023. *Equinor. Block 2 Tanzania* (2018), 6-7, www.equinor.com/content/dam/statoil/documents/where-we-are/equinor-block-2-project-121018.pdf; Fumbuka Ng'wanakilala, "Tanzania to conclude talks for delayed LNG project in September," Reuters, 23 March 2019, af.reuters.com/article/commoditiesNews/idAFL8N21A04P.

5 Thomas Scurfield and David Mihalyi. *Uncertain Potential: Managing Tanzania's Gas Revenues* (Natural Resource Governance Institute, 2017), www.resourcegovernance.org/analysis-tools/publications/uncertain-potential-managing-tanzania-gas-revenues.

6 We will need to amend our assumptions and do further analysis if the likelihood of the former increases.

the project to be viable. Given $11 was the average real price over the past 15 years, investment prospects now appear brighter. However, with long-term price forecasts of $7-8, there is still a reasonable chance that companies will decide not to invest.[7]

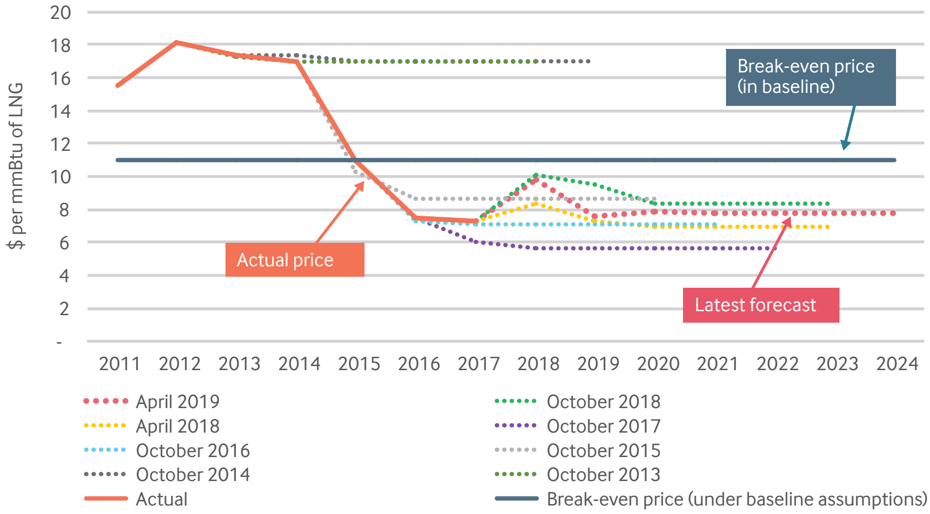

Figure 1. IMF LNG price forecasts and estimated break-even price[8]

Even if the LNG project proceeds, the government revenues it generates are unlikely to be transformative

The onshore projects currently operating in Tanzania generate limited revenues.[9] Therefore, the sector's revenue potential is determined by the LNG project.

We estimate that at a LNG price of $11 per mmBtu, government revenue from the LNG project would average approximately $2.9 billion a year (in real terms) over the period of production.[10] This amount is larger than we estimated previously given the changes we made to our project assumptions, but not large enough to change the public finance implications. It is equivalent to only approximately $49 or TZS 110,000 per person a year for the current population, and even less—$24 or TZS 53,000 per person a year—once population growth over the period is considered.[11]

Annual revenue of $2.9 billion from the LNG project would represent a significant contribution to the Tanzanian economy today. However, production is unlikely to commence before 2027 at the earliest, and GDP and non-gas revenue are likely to have increased significantly by then. Therefore, we estimate that revenues from the project will account for a relatively small share of the economy—approximately 7.7 percent of total revenue and 1.2 percent of GDP a year on average, and 13.1 percent

7 The World Bank. *Commodities Price Forecast* (2019), www.pubdocs.worldbank.org/en/598821555973008624/CMO-April-2019-Forecasts.pdf; IMF, "World Economic Outlook Database," www.imf.org/external/pubs/ft/weo/2019/01/weodata/index.aspx. The World Bank provides a projection of the nominal price. To estimate this price in 2018 US dollars, we deflate the nominal price based on an annual inflation rate of 2 percent.

8 Price for Indonesian LNG at point of delivery to Japan including cost, insurance and freight. IMF, "World Economic Outlook Database."

9 The companies operating Tanzania's two main onshore projects paid $45 million to government in 2018. Natural Resource Governance Institute, "ResourceProjects," www.resourceprojects.org/.

10 These gas revenue amounts include all major revenue streams applicable to the LNG project, with the exception of taxes on inputs (e.g., import duty and VAT) and capital gains. Our model assumes that tax laws are perfectly enforced and companies do not attempt to minimize their tax bills.

11 Revenue in Tanzanian shillings is based on an exchange rate of $1 = TZS 2,252 as set out in the IMF country report for 2018. Population projections are taken from the United Nations. IMF. *United Republic of Tanzania: Seventh Review under the Policy Support Instrument* (2018), www.imf.org/~/media/Files/Publications/CR/2018/cr1811.ashx; United Nations, "World Population Prospects," esa.un.org/unpd/wpp/Download/Standard/Population/.

of total revenue and 2.2 percent of GDP at their peak. Indeed, the further into the future the project is delayed, the smaller these revenues will be relative to total revenues and GDP.

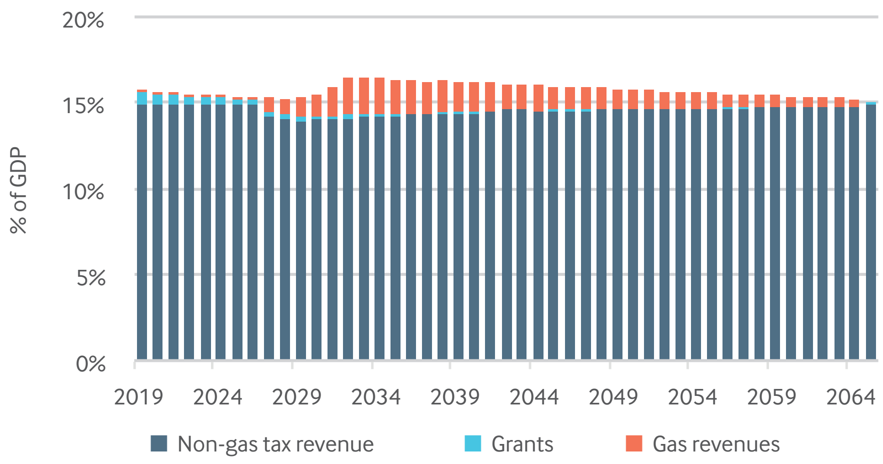

Figure 2. Estimated gas revenues with a LNG price of $11/mmBtu

We estimate that gas revenues from the LNG project are likely to be relatively modest across most scenarios we examined. Only with LNG prices that are significantly higher than expected—at least $15-16 per mmBtu—could potential government revenues be considered substantial.

	Current outlook of $8	Historical average price of $11	High price of $16
Total annual revenue	$1.6 billion	$2.9 billion	$5.0 billion
Annual revenue per person	$13	$24	$42
Annual revenue as % of total government revenue	4.2%	7.7%	13.2%
Annual revenue as percentage of GDP	0.6%	1.2%	2.2%

Table 1. Estimated government revenues from LNG project across different price scenarios (if the project proceeds)

Further large discoveries could change the sector's revenue potential, but the investment decision for the LNG project is likely to impact investor interest in further exploration. We have therefore not included the possibility of other projects in our revenue projections.

IMPLICATIONS FOR MANAGING GAS REVENUES AND THE WIDER PUBLIC FINANCES

The Revenue Management Act provides for the establishment of an oil and gas fund and several fiscal rules related to both gas revenues and wider public finances. This act will determine how gas revenues are used and what impact they have on public finances. The rules for wider public finances mean that it will also be a key determinant of how Tanzania's public finances are managed, irrespective of the timing or magnitude of gas revenues.

Tanzania's Oil and Gas Revenues Management Act

The act provides rules on how gas revenues are accumulated, used and withdrawn from the Oil and Gas Fund.

Revenue accumulation. Revenues from royalties, government profit share, corporate income tax and dividends from state participation are required to be deposited in the fund. These will be first deposited in the Revenue Holding Account. Any revenues in excess of a specified threshold are transferred to the Revenue Saving Account. Revenues that are not deposited in the holding account are either remitted directly to the Consolidated Fund or retained by the Tanzania Petroleum Development Corporation (TPDC, the national oil company), depending on the revenue stream.

Use of fund deposits. Revenues in the savings account are used to: provide budget financing when there are shortfalls in gas revenues; finance strategic investments of TPDC; and acquire long-term savings. Revenues deposited in the holding account and not transferred to the savings account are used to finance the national budget.

Withdrawal. Revenues of up to three percent of GDP may be used to finance the national budget annually. Until revenues reach the three percent threshold, no money will be transferred to the savings account. Once there is money in the savings account, if revenues in a subsequent year fall below the three percent threshold then the money can be withdrawn from the savings account to address the shortfall. Of the gas revenues transferred to the budget, at least 60 percent must be directed towards "strategic development expenditure." The equivalent of 0.1 percent of GDP of the savings account's deposits will be earmarked annually for TPDC. If there are insufficient resources in the savings account, budgetary transfers to the fund occur.

The act sets out rules for the wider public finances in addition to those specific to gas revenues.

Fiscal deficit limits. When gas revenues reach three percent of GDP, the non-gas fiscal deficit should not exceed 3 percent of GDP (which allows additional gas revenue to be effectively saved).

Expenditure limits. Recurrent expenditure growth (e.g., goods and services, wages and salaries) from one year to the next cannot exceed the growth in nominal GDP. Total expenditure is capped at 40 percent of GDP.

EAMU convergence criteria. The act restates the government's obligation to adhere to the convergence criteria of the East Africa Monetary Union (EAMU).[12] Two criteria target fiscal policy. The first is that the overall fiscal deficit should not exceed 3 percent of GDP. The second is that gross public debt (calculated in net present value terms) should be less than 50 percent of GDP. Both criteria should be achieved by the fiscal year of 2020/21. The EAMU criteria on the fiscal deficit is similar to the rule in the Revenues Management Act, but the EAMU limit is for the overall fiscal deficit and is triggered irrespective of the size of gas revenues. The non-gas fiscal deficit rule specific to Tanzania is more demanding, if triggered.

12 East African Community. *Protocol on the Establishment of the East African Community Monetary Union* (2013), 9.

Modest gas revenues will mean the Revenue Management Act's fiscal rules have a limited impact on their use, but the rules have other shortcomings

Revenues are not expected to reach the 3 percent of GDP threshold at which they are required to be deposited into the Oil and Gas Fund's Revenue Saving Account. They will therefore only finance the national budget. Savings are only likely if the price reaches at least $15-16. Even then, they would still be relatively small, and drawn down quickly once revenues fell from their peak. However, unless circumstances change significantly, we do not believe this necessitates lowering the savings threshold. A common policy-making mistake is to save a significant proportion of resource revenues while simultaneously borrowing. A growing number of countries are setting up sovereign wealth funds into which they place revenues that earn low interest, despite also having large debts that they have to pay much higher interest on.[13]

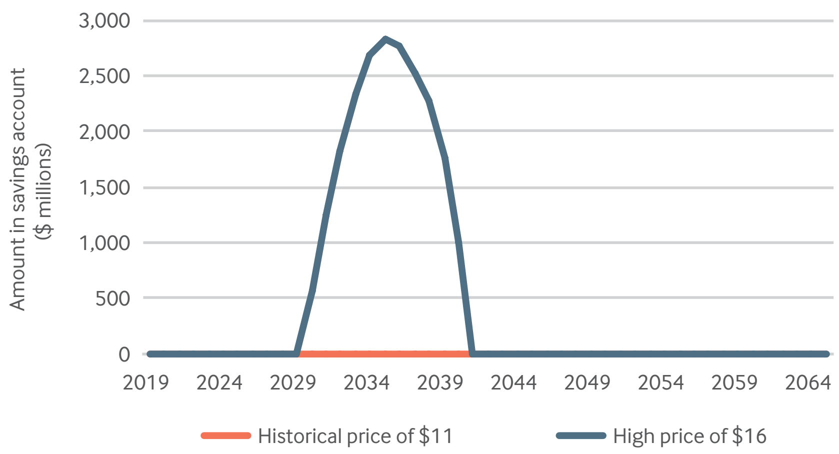

Figure 3. Projected funds in the Revenue Saving Account across different LNG price scenarios

While the limited impact of the fiscal rules does not necessarily mean they are inappropriate, they do suffer from a number of shortcomings. A key weakness is their pro-cyclicality, which means spending can increase when the economy is strong and has to be cut when the economy is weak. This effect, which will exacerbate boom-bust cycles, is a result of them being anchored to GDP. The financing mechanism for TPDC is also linked to GDP, which means it is unlikely to be sufficiently responsive to the company's needs or spending capacity. Finally, rules earmarking gas revenues for development expenditure are not situated within a broader spending strategy (for example, one that specifies the composition of the larger budget). In some countries, resource revenues directed toward development expenditure have simply resulted in the withdrawal of non-resource revenues from these areas. Therefore, irrespective of the size of Tanzania's gas revenues, the current rules provide no guarantee that development expenditure in strategic areas will actually increase.

13 Andrew Bauer and David Mihalyi. *Premature Funds: How Overenthusiasm and Bad Advice Can Leave Countries Poorer* (Natural Resource Governance Institute, 2018), www.resourcegovernance.org/analysis-tools/publications/premature-funds.

Tanzania appears to be sensibly avoiding making public finance decisions based on hopes of a gas revenue windfall, but is still at risk of the "presource curse"

One of the most important policy implications of uncertain (and likely modest) gas revenues is that the government should not base its public finance plans—and in particular should be careful not to build up excessive debt—on the expectation of a future gas windfall. Doing so would put Tanzania at risk of a common mistake that has plagued many countries after they have made large discoveries, with expectations of future revenues leading to economic problems. We call this phenomenon the "presource curse."[14]

Thus far, Tanzania currently appears to be avoiding the "presource curse." The country's public finances appear to be in reasonable health, and Tanzania seems to be on the path towards complying with the EAMU fiscal deficit limit of 3 percent of GDP by 2020/21. It also appears to be currently maintaining reasonable debt levels. If the LNG project goes ahead, a modest increase in spending in the longer term (once gas revenues start flowing) may actually be possible. However, if primary expenditure was to grow faster than non-gas GDP for a sustained period, we would expect the deficit to rapidly increase, which even the arrival of large gas revenues might not be able to mitigate.

14 Jim Cust and David Mihalyi. *Presource curse? Oil discoveries, elevated expectations and growth disappointments* (World Bank, 2017), documents.worldbank.org/curated/en/517431499697641884/pdf/WPS8140.pdf.

CONCLUSION

Our analysis of the revenue potential of Tanzania's gas sector suggests that there is still significant uncertainty regarding the level of investment in the gas sector and how much revenue it will generate. Even if the project proceeds, revenues are likely to be modest. This outlook is in contrast to the IMF's early projections, but is aligned with more recent assessments.[15]

Modest gas revenues mean the Revenue Management Act's fiscal rules are likely to have limited impact. Based on the current outlook, we do not think this is a cause for concern in itself. However, the framework does have weaknesses, including its pro-cyclicality and insufficient measures to boost development expenditure.

It is too early to determine an optimal revenue management framework given conditions might have changed significantly by the time large revenues start flowing, but the government should consider a comprehensive review in the next few years. It should also consider reviewing some rules now. The rule limiting recurrent expenditure growth is already effective. While imposing a limit on recurrent expenditure growth is sensible, its link to annual GDP risks exacerbating boom-bust cycles even before the LNG project commences. Other options include an absolute limit and anchoring it to a less volatile GDP measure. Similarly, the financing mechanism for TPDC has immediate implications given that the company will need to begin building its capacity to have an active role in any future activity.

Uncertain and likely modest gas revenues put Tanzania at risk of the "presource curse," whereby expectations of future revenues lead to economic problems. The government does not appear to be making this mistake currently. However, it could take steps to further protect itself.

The government should ensure it adheres to the fiscal rules of the EAMU, with any additional spending allowed within the deficit limit directed towards the development budget. The government should also consider building on disclosure rules in the Revenue Management Act to increase transparency and accountability efforts in budget management. This could include tasking an independent body with overseeing improved disclosure of budgetary information (particularly on borrowing) and assessing compliance with both regional and national fiscal rules. Finally, it will be critical for the government to manage public expectations about the likely impact of gas revenues. This would reduce the likelihood of unrealistic expectations derailing government policies.

15 See for example: Mark Henstridge. *Understanding the boom. Country study—Tanzania* (UNU-WIDER, 2018), www.wider.unu.edu/sites/default/files/Publications/Working-paper/PDF/wp2018-177.pdf.

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