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ECONOMIC review

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COMMENTARY

A DIFFICULT END TO 2023 POINTS TO A BUMPY RIDE FOR THE ECONOMY IN 2024

Introduction

The last quarter of 2023 was a difficult one for the Botswana economy, with the global diamond industry experiencing a deepening contraction. Although hard data for the final quarter of the year are still scarce, indications are that this has had a wider impact on government revenues, export revenues, foreign exchange reserves, and economic growth. The prospects are for a continuation of these difficult conditions into at least the early months of 2024. With the impact of various other policy decisions likely to be felt during the year, 2024 is likely to be a rocky ride on the economic front.

The Diamond Industry

The global diamond market had a tough time throughout most of 2023, and more or less collapsed during the final quarter of the year. Diamond sales through De Beers (which markets diamonds from Botswana, South Africa, Namibia and Canada) amounted to USD416 million in Q4, covering the last three sights of the year, compared to USD1,379 million in the same period of 2022 – a decline of 70%.

There are several reasons for this, both cyclical and structural. Slow economic recovery in some parts of the world, notably Europe and China, has affected demand for diamonds and other luxury goods, which has not grown as fast as had been hoped. But perhaps of more concern has been the increasing competition from lab-grown (synthetic) diamonds (LGDs), which are penetrating further and further into the diamond market. LGDs are significantly cheaper to produce than natural (mined) diamonds, and offer customers a different value proposition (such as, a larger stone for the same price), and greater profits for other participants in the diamond value chain. Of concern is the fact that LGDs are now penetrating the diamond bridal market (engagement and wedding rings) in the US, which had until recently been the preserve of natural diamonds. Addressing this will require considerable investment on the part of diamond producers (including Botswana) in marketing and boosting the natural diamond story, to maintain demand for this distinct product.

Given market weakness, it is inevitable that diamond prices have been affected, negatively. Prices have been reduced at De Beers sights during the year (with another reduction at the first sight of 2024). The Antwerp Diamond Price Index, as reported by the Bank of Botswana, was 35% lower in October 2023 than it had been at its peak in March 2022. Debswana has reportedly been resisting a reduction in the prices that it receives from De Beers for its diamonds, but in such as weak market, lower prices are inevitable.

Market weakness – with lower sales volumes as well as prices – has also led to stockpiling of diamonds throughout the value chain, so much so that India imposed a "voluntary" two months ban on rough diamond imports to facilitate the clearing of excess inventories (but with an inevitable impact on diamond mining companies). While miners can manage some stockpiling of their production in the event of lower sales, this is expensive; eventually they have to cut back on production, which has an impact on national output (GDP and economic growth) figures.

The Botswana diamond cutting and polishing sector, which has been one of the major success stories of the economy in recent years, has also been struggling through much of 2023. Pressures from weak global demand and very slim manufacturing margins have been compounded by the impact of Botswana's tax regime, in the form of the Training Levy. This quasi-tax, based on turnover, has to be paid by manufacturers regardless of whether or not they make a profit, and undermines the viability of operating in Botswana, especially given that the levy cannot generally be used to cover the costs of many years of on-the-job training that they provide for their staff. Similar levies in other jurisdictions, such as Namibia, are usually based on payroll costs rather than turnover, which provides a much more business-friendly fiscal regime.

A further complicating factor in the global diamond market as we move into 2024 is the new regime of sanctions on Russian diamonds being introduced by the G7 group of major industrial nations. The new regime aims to keep Russian diamonds out of G7 markets, even if they have subsequently been transformed into polished diamonds; at present, a loophole in the sanctions regime allows Russian-origin diamonds that have been cut and polished elsewhere (e.g. in India) to be legitimately sold in the USA and other G7 markets. To guard against this, the G7 is planning to introduce a blockchain-based traceability system for all individual diamonds, initially of 1 carat and above. It is also proposed that the registration of individual diamonds on this blockchain will have to be done physically in Antwerp, Belgium. This could potentially have major implications for Botswana diamonds, including additional transport costs and costs associated with the registration process; complicating supplies to local cutting and polishing factories; undermining Gaborone's status as a global diamond trading centre; and threatening De Beers' aggregation model whereby diamonds from Botswana, Namibia, South Africa and Canada are "aggregated" in Gaborone and then sold to De Beers sightholders. Although presented as part of the Russian sanctions regime, this is also a clear attempt by the G7 to restore the status of Antwerp as a global diamond trading centre, which has been fading over the years. This will come at the expense of diamond producers, which are largely developing countries. While discussions are underway to address these issues and minimize the negative impact on Botswana and other producer countries, the outcomes are as yet uncertain. All of this adds to the headwinds facing Botswana's diamond production and export in 2024.

COMMENTARY

Domestic Economic Developments

GDP growth slowed to 3.6% over the 12 month to the end of September 2023. This was not unexpected, and reflected slower growth in both the mining and non-mining sectors of the economy.

On a positive note, inflation continued to decline and finished the year at 3.5%. This was expected, and largely reflected the decline in global fuel prices. Looking ahead, inflation is likely to rise as we move into 2024. This partly reflects a normalisation of price changes as 2023's fuel price reductions drop out of the calculations. In addition, global fuel prices are expected to increase, in part due to increased instability in the middle east and higher fuel transport costs. Inflation will also be pushed up by the sharp increase in minimum wages from 1st February 2024 and the extension of the ban on vegetable imports in June.

The Bank of Botswana's Monetary Policy Committee (MPC) reduced its policy rate by 0.25% at its December 2023 meeting. This was perhaps surprising, given that in recent months the main inflationary pressures have come from domestic prices (on which monetary policy can have its main effect), in contrast to the global price rises that pushed up inflation in 2022 and 2023. As noted above, further domestic inflationary pressures (from food prices and wages) are likely in coming months. This will test the ability of the MPC to calibrate monetary policy to the drivers of inflation.

It is expected that the poor performance of diamonds in the second half of the year will have had an adverse impact on export earnings and government revenues. The most recent export data (up to October 2023) shows that exports in the second half of 2023 (the four months from July to October) were 35% down on the same period in 2022, resulting in a trade (in goods) deficit of P8.8 billion over the four months. Government budget data is not yet available for this period – perhaps reflecting the problems facing the Government Accounting and Budgeting System (GABS) – but Government balances at the Bank of Botswana fell by P3.9 billion between June and September 2023, indicating a substantial budget deficit.

Updated unemployment data covering the third quarter were released by Statistics Botswana in December 2023, and show the rate of unemployment remaining stubbornly high. Unemployment in Q3 2023 was 25.9% of the labour force, compared to 25.4% in Q4 2022 and 26.0% in Q4 2021. The youth unemployment rate was also largely unchanged, at 34.4%. These are disappointing results, given the prevailing high rate of unemployment, with the rate of economic growth too low to bring unemployment down.

One of the developments that may impact on unemployment over the coming year will be the increase in the minimum wage, to take effect from 1st February 2024. The general hourly minimum wage is set to increase by 23.5%, but there are larger increases for workers in the retail sector (up 44%) and agriculture and domestic service (both up 38%). These increases were perhaps to be expected in an election year, and certainly some increase was justified, as the minimum wage had fallen in real terms in recent years. But it would have been perhaps better to spread such large increases over a longer period, to give the private sector time to adjust. As it stands, some job losses in labour-intensive sectors with pay closely linked to the minimum wage (such as security and retail) are almost inevitable, pushing unemployment up further.

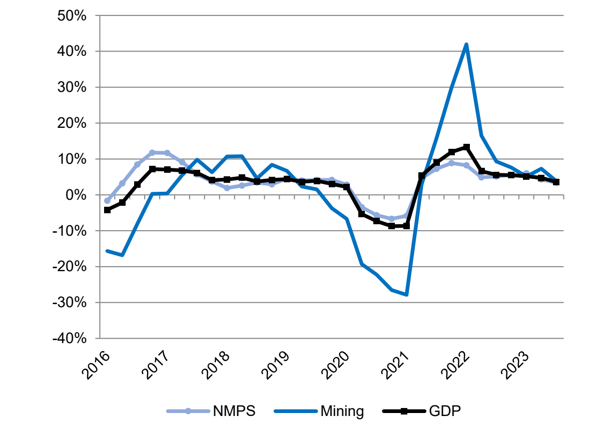
There are other recent policy decisions that may have unintended impacts during the coming year. The decision to extend and broaden the vegetable import ban will push up food prices further, negatively impact the living standards of low-income households, and disadvantage the tourism sector. The decision to give Botswana Oil a near monopoly on fuel imports will reduce competition in fuel importation, and squeeze out not just multinational fuel importers but also citizen-owned fuel importers, who have been allocated a lower market share than they enjoyed previously. Finally, changes to the Retirement Funds Act regulations will lead to many more people cashing in their pension savings in full on retirement, and reduce the number of people who buy private pensions to support their living standards in old age. It is also likely to lead to contraction in the pensions, asset management and life insurance segments of the financial sector as pension funds are withdrawn rather than used to buy annuities

Outlook

2024 promises to be a bumpy year for the Botswana economy, with a high level of uncertainty in the diamond sector. Rapaport Diamond estimates are for a further 20% decline in Botswana's diamond exports in 2024, after a 37% decline in 2023. This is likely to lead to lower economic growth as well as downward pressure on export earnings and government revenues. Further insights as to the extent of this impact will be provided in the Budget Speech, to be presented by the Minister of Finance, Honourable Peggy Serame, on February 5th. There have already been hints that there will be an expanded development budget, providing more money for infrastructure and other projects. For this to be effective it needs to be accompanied by improvements in the process for preparing, selecting and prioritising projects, so that the additional spending is not wasted on low-return (or negative return) projects, as has so often been the case in recent years. The likelihood is for a sizeable budget deficit, given an expanded development budget and constrained mineral revenues, which will require an increased government debt issuance programme.

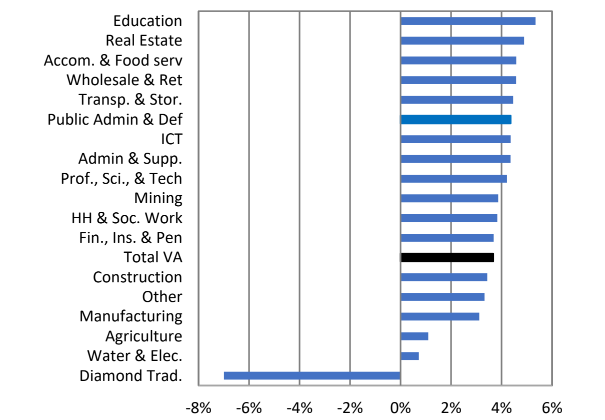
KEY ECONOMIC VARIABLES

ANNUAL GDP GROWTH



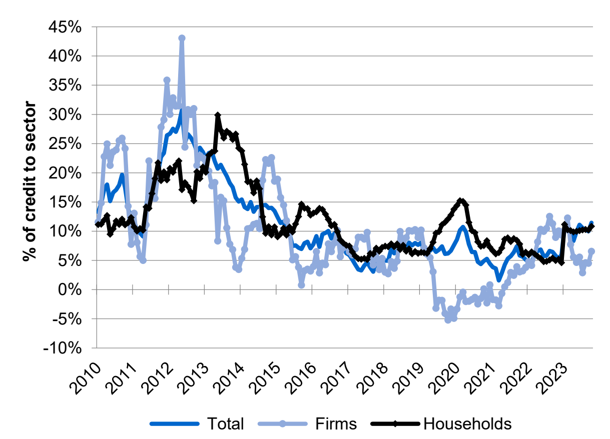
The global diamond market continues to experience a persistent weakening of demand for diamonds, adversely impacting on economic growth. Real GDP growth in September 2023 was 3.6% year-on-year, down from 4.8% in June 2023. This is attributable to the slowdown in both mining and non-mining private sector (NMPS) growth during the quarter. Mining sector growth fell significantly to 3.9% y-o-y in Q3 2023 down from 7.3% y-o-y in Q2 2023, while NMPS growth fell to 3.4% y-o-y, down from 4.3% y-o-y in Q2 2023. The expectation is that growth for the year as a whole will fall below the projected 3.8% for 2023, confirming the need to develop new drivers of economic growth.

ANNUAL SECTORAL GROWTH



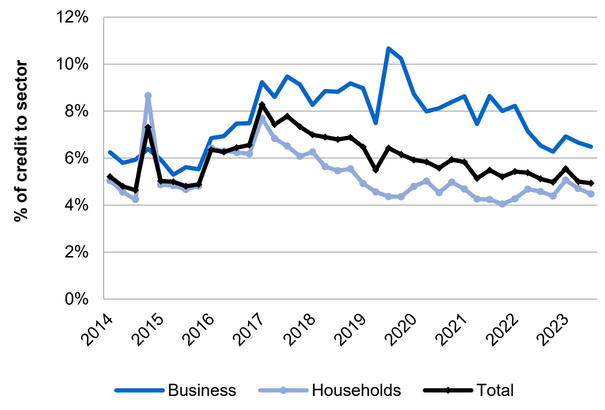
Economic performance during Q3 2023 was evenly spread with most sectors sectors of the economy growing by between 3% and 5%, although with many recording lower growth rates than in the previous quarter. Economic sectors that experienced significantly lower y-o-y growth rates than in the previous quarter were Mining, Diamond Traders, Manufacturing and Water & Electricity. The depressed demand for diamonds coupled with high inventory volume in some parts of the diamond value chain were the reasons for low Mining and Diamond Traders growth in Q3.

ANNUAL CREDIT GROWTH



Annual bank credit growth increased between July and October 2023, to 11.5% y-on-y in October up from 10.6% y-on-y in July. The increase in credit growth is attributable to significant increase in credit to firms, which registered growth 6.6% y-on-y in October 2023 up from 2.9% y-on-y in July. Similarly, growth of credit to households rose marginally to 10.8% y-o-y in October, from 10.2% in July. The figures still reflect the inclusion of BBS Bank in the figures since January 2023, which added around 4% to annual credit growth during 2023.

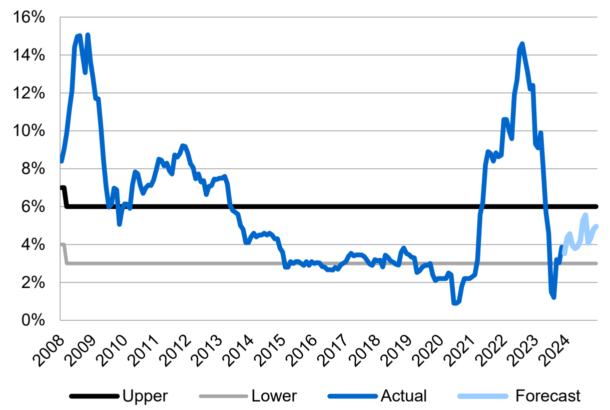
ARREARS ON BANK LENDING



Total arrears as a proportion of outstanding bank credit fell marginally during the third quarter of 2023, to 4.9% from 5.0% in Q2 The decline in arrears during Q3 is attributable to the reduction in both household and business arrears, which fell from 4.7% and 6.7% in Q2 2023 to 4.5% and 6.5% in Q3 2023. Thus, households and businesses have been resilient and are able to continue servicing their loan obligations.

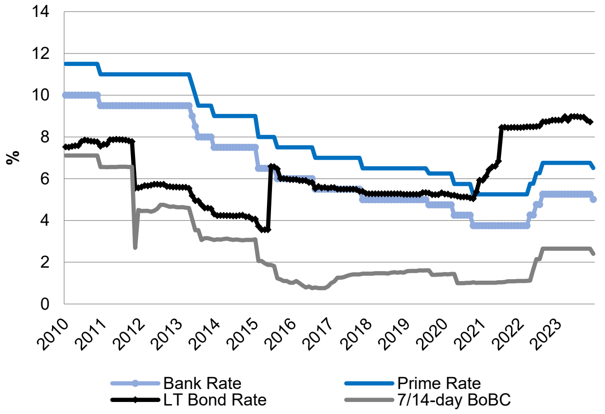
KEY ECONOMIC VARIABLES

INFLATION AND FORECAST



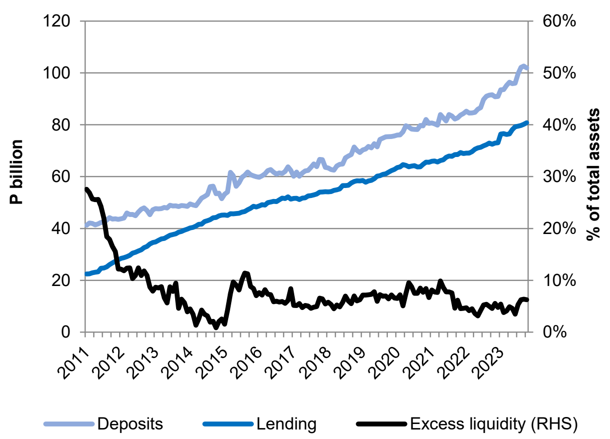
Annual inflation in December 2023 was 3.5%, a modest increase from 3.2% inflation recorded in September 2023. Group indices recorded minimal changes during the quarter except for the Transport group index, which recorded a negative change of 0.9% between Q3 and Q4 2023. The Food and Non-alcoholic Beverages group remains the largest contributor, with 6.1% annual inflation. It is also evident that the main inflationary pressures are now from the domestic economy (with domestic tradeables inflation at 4.8%). The core inflation rate (inflation excluding administered prices) decreased further in Q4, to 4.4% from 5.2% in Q3. The outlook for inflation suggests that it will remain within the Bank of Botswana objective range of 3-6% in the medium-term.

INTEREST RATES



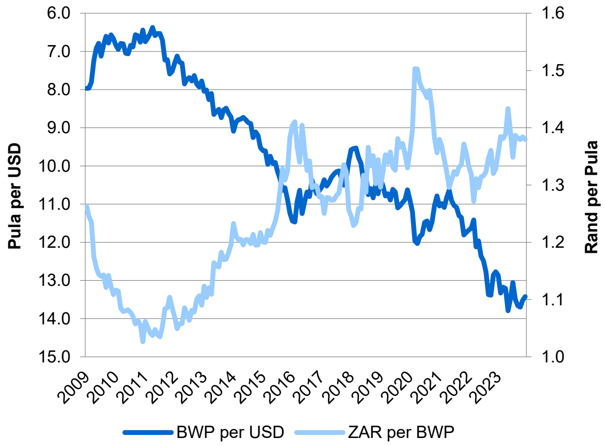
The Bank of Botswana's Monetary Policy Committee (MPC) reduced the Monetary Policy Rate (MoPR) by 25 basis points to 2.40% at its December meeting. This was perhaps surprising, given the evidence of domestic inflationary pressures. However, BoB considers that the medium-term outlook for inflation is positive and forecast to remain the Banks' objective range of 3-6%. Subsequent to the cut in the MoPR, the 7/14-day BoBC rate and the Prime Lending Rate were reduced to 2.40% and 6.51% respectively. The long-term government bond rate (BW012) decreased to 8.72% in November 2023 from 8.95% in August 2023.

BANK DEPOSITS, LENDING & LIQUIDITY



Bank liquidity increased in October 2023. Excess liquidity rose to 6.3% of total assets in October, compared to 5.3% in July 2023. The increase in liquidity was driven by the rise in customer deposits during the period. Bank deposits rose by 2.2% (P2.21 billion) between July and October 2023, whereas bank lending increased by a smaller amount, 1.6% (P1.3 billion), during the same period. The rise in liquidity will take some funding pressure off of the banks. It may be that the significant jump in deposits and liquidity is being driven by the repatriation of assets by pension funds in the light of tightened domestic asset requirements under new Retirement Fund Act regulations.

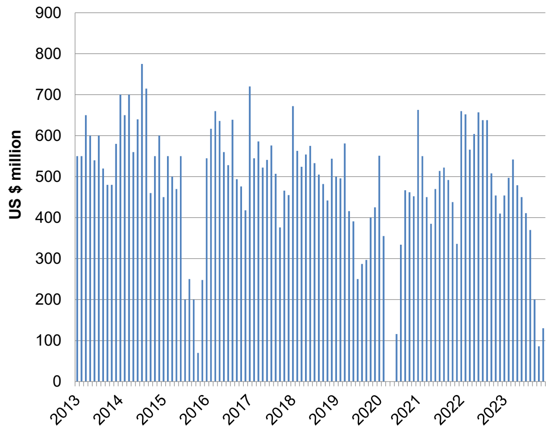
EXCHANGE RATES



The Pula strengthened against the US dollar and weakened against the rand during Q4 2023. The Pula-US dollar exchange rate went from 13.66 to 13.42 between September and December 2023, an appreciation of 1.7%. The Pula depreciated against the Rand by 0.2%, ending December with an exchange rate of ZAR1.3796, down from ZAR1.3820 in September. Following a review in December 2023, the Pula exchange rate policy parameters have been maintained with Pula currency weights of 45% for the Rand and 55% for the Special Drawing Right (SDR), and a downward rate of crawl of 1.51% per annum against the basket.

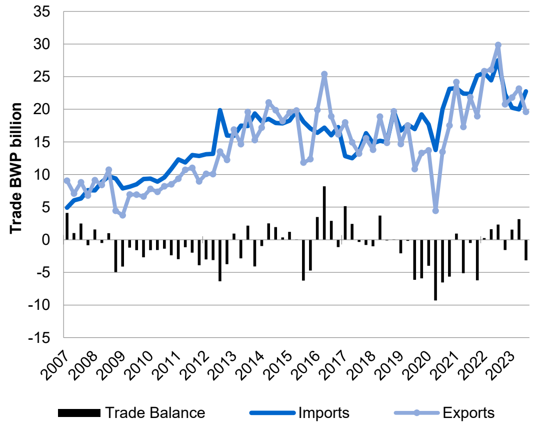
KEY ECONOMIC VARIABLES

DE BEERS DIAMOND SALES



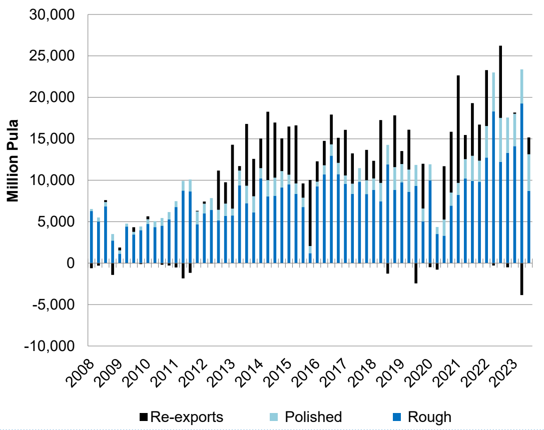
2023 was a rough year for the global diamond market, characterised by weaker demand for diamonds and lower prices associated with high level of inventories in other parts of the diamond value chain (dealers and manufacturer). Similarly, the slow pace of economic recovery in China and weak retail demand for natural diamonds in the USA – due in part to competition from synthetic diamonds – have added to these troubles, leading to sharply lower sales. De Beers Global Sightholder Sales (DBGSS) were down by 37.5% in 2023, recording sales valued at USD3.62 billion in 2023, down from USD5.79 billion in 2022. Comparing between quarters, DBGSS sales were down by 46.7% between Q3 and Q4 2023 and registered the lowest sales in the last two sale cycles, at USD86 and USD130 million, respectively.

INTERNATIONAL TRADE



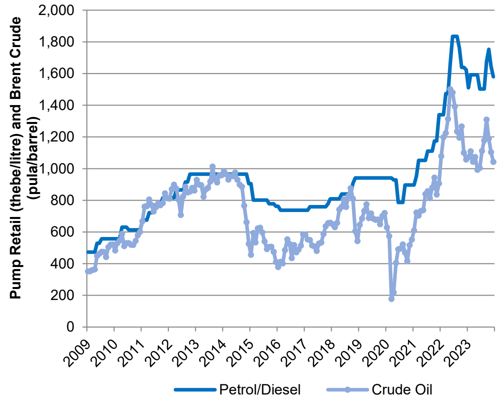
Trade performance deteriorated in Q3 2023, as the value of exports decreased while increasing for imports. Total imports increased by 13.8% to P22.75 billion in Q3 2023, up from P19.9 billion in Q2. Imports increased for all commodity groups except for Chemicals & Rubber Products and Salt Ores & Related Products. On the other hand, total exports decreased by P3.54 million to P19.61 billion in Q3 2023, a decline of 15.3%. The decline in exports was driven mineral exports which fell by 16.7% during the period. The greater value of imports compared to exports resulted in a trade deficit of P3.14 billion in Q3 2023, down from a surplus of P3.16 billion in Q2 2023. The trade deficit widened further in October 2023, to P5.63 billion, as the value of exports fell substantially to P2.71 billion. Diamond exports fell sharply in October (P1.25 billion) recording levels last seen in 2020 during the Covid-19 pandemic.

DIAMOND EXPORTS



The global demand for rough diamonds continued to be depressed in Q3 2023. Total diamond exports recorded a decrease of 22.3% in Q3 to P15.2 billion, down from P19.5 billion in Q2. Diamond exports increased for polished and re-exports, while decreasing for Botswana rough exports by 54.8% to P8.71 billion, from P19.27 billion. Polished exports rose by 7.3% to P4.42 billion and by 152.9% for re-exports to P2.04 billion up from minus P3.86 billion, between Q2 and Q3 2023.

FUEL PRICES



Local fuel prices decreased by 5.8% during Q4 2023. During the quarter, domestic fuel prices were adjusted three times, upwards in October and downwards in November and December 2023. In contrast to 2022, when fuel prices rose significantly, local fuel prices have fallen by 2.7% in 2023, influenced by the downward trend movement in international fuel prices. Over the past two years, growth in international prices was driven by post-COVID economic recovery and Russia's invasion of Ukraine, and deliberate attempts by some oil exporting countries to restrict output. Despite this, global fuel prices have fallen during 2023, in part due to weak demand, despite the sharp rise in uncertainty resulting from conflict in the Middle East. As at December 2023, (regulated) domestic fuel prices were still showing an over-recovery relative to costs, indicating scope for a modest further reduction.

NEWS HIGHLIGHTS

1st October	De Beers moves forward on Botswana diamond deal. (Rapaport News)	De Beers and Botswana Government have signed a "heads of terms" document, the next step in signing a new contract for their joint Debswana mining venture. The heads of terms, or letter of intent, resolves some of the key issues between the parties regarding the mining deal, which will include a new 10-year sales agreement for Debswana's rough-diamond production and extend De Beers' mining license in Botswana until the end of 2054.
5th October	De Beers halts online rough auctions as sales slide. (Rapaport News)	De Beers suspended all online rough diamond auctions until the end of the year to stabilize the subdued market. De Beers' year-on-year rough sales slid for the eighth consecutive cycle, hitting their lowest point this year. Sales at the September 2023 sight totalled USD200 million, representing a 61% drop from the same period in 2022, and 46% from August 2023. According to the company, reducing rough diamond supply could contribute to lowering stock accumulation in the midstream industry and reestablish equilibrium between wholesale supply and demand.
9th October	Jindal breaks ground to kickstart new coal power plant. (Energy Central)	Jindal Steel and Power Ltd held the groundbreaking ceremony for the multi-billion Pula Mmamabula coal project. Botswana Power Corporation (BPC) and Jindal signed a 30-year Power Purchase Agreement (PPA) in which Jindal will build, run, and maintain a new coal-fired power station and sell the power to BPC. The project, which includes the development of a new coal mine, is estimated to be completed in 2028 and at an estimated cost of approximately USD1 billion.
9th October	Starlink has applied for operating license in Botswana, says BOCRA. (BW TechZone)	The Botswana Communications Regulatory Authority (BOCRA) has confirmed that Starlink has applied for an operating license to launch its low-orbit satellite internet service in Botswana. According to Starlink, the satellite internet service is scheduled to launch in Botswana in Q3 2024.
18th October	Lotus' acquisition of A-Cap approved by Botswana officials. (Mining Weekly)	Lotus Resources has received government regulatory approvals required for its proposed schemes of arrangement with investors in A-Cap Resources, Under the terms of the deal, Lotus will acquire 100% of A-Cap's issued shares and listed options in the Letlhakane uranium project.
26th October	Bank of Botswana maintains monetary policy rate. (Bank of Botswana)	The Bank of Botswana's Monetary Policy Committee (MPC) decided to maintain the Monetary Policy rate (MoPR) at 2.65% at its October meeting. Inflation is forecast to remain within the Bank's objective range of 3-6% in the medium term. Possible upward movement on inflation could be because of increase in international fuel prices, but could be offset by subdue domestic demand.

NEWS HIGHLIGHTS

26th October	De Beers records a 23% decline in Q3 diamond production. (Diamond World)	De Beers' rough diamond production for Q3 2023 decreased by 23% to 7.4 million carats from 9.1 million carat in Q3 2022, attributable to the planned reduction in South Africa as Venetia transitions to underground operations. Production decreased in other mines. In Botswana, Q3 production decreased by 12% to 5.8 million carats, driven by planned maintenance at Orapa. Q3 production in Canada fell by 9% to 0.7 million carats while in Namibia it was flat at 530,000 carats.
26th October	Okavango pauses sales in latest sign of rough slowdown. (Rapaport News)	Okavango Diamond Company (ODC) has cancelled its November sale amid weak market conditions. The global diamond industry is experiencing a period of high rough and polished inventories due to slow demand in the US and China and competition from lab-grown diamonds. India recently began a two-month voluntary freeze on rough imports to reduce surplus of goods.
30th October	Citizen firm participates in ODC's first exclusive tender. (Mmegi)	About ten citizen companies participated in the Okavango Diamond Company's (ODC) first exclusive tender to buy rough diamonds. ODC Managing Director, Mr Mmetla Masire, noted that the number at the recent auction was impressive as this was the first offer exclusively for citizens, even though no company managed to buy goods during the auction.
30th October	Economic fears heighten as Botswana diamond deposit diminish. (Sunday Standard)	According to officials at Jwaneng mine, Debswana has mined over half of the total diamond deposit. It has been revealed that over 58% of total diamond deposits has been mined with 42% still to be extracted. This indicates the eventual end of diamond mining, the country's principal export and GDP contributor.
30th October	Masisi worried about growth of lab-grown diamonds. (Mmegi)	President Mokgweetsi Masisi has expressed concern over the rise of synthetic lab-grown diamonds (LGDs), stating that they present both challenges and opportunities, and that effective segmentation and marketing are crucial for maintaining a thriving natural diamond market.
31st October	Botswana's Debswana rough diamond sales down 21% on weak demand. (Reuters)	Sales of rough diamonds at Debswana Diamond Company fell 31% in the nine months up to September 2023, as demand for gems slowed amid global economic uncertainty. Both ODC and De Beers have experienced lower demand, hence, cancelling some of their auction sales. De Beers Sightholders are allowed to defer up to 100% of their contracted purchases for the remainder of 2023.

NEWS HIGHLIGHTS

1st November	Tati Nickel Mine up for grabs by auction. (Business Weekly)	Tati Nickel mine will be sold through an auction before the end of 2023 by WH Auctioneers. The mine will first be offered on auction in its entirety, allowing prospective buyers the opportunity to bid on the complete Tati Mine assets as one lot. Should there not be an acceptable bid, there will be an auction of individual lots which comprise some 600 assets. Some of the key infrastructure components are processing plants and sections, mine equipment, storage and warehousing, workshops and maintenance facilities, electrical infrastructure, mineral processing, office facilities, tailings & DMS facilities.
5th November	Moody’s maintains Botswana’s Credit Rating. (Sunday Standard)	Moody's Investors Service has affirmed Botswana's sovereign credit rating at "A3" for the year, with a "stable outlook" retained. The rating is based on Botswana's low debt levels, robust institutional framework, and limited vulnerability to political, liquidity, and banking-related event risks. The agency anticipates continued growth in Botswana's diamond industry, despite a subdued global outlook for diamond prices. However, Moody's expresses concern about the nation's fiscal vulnerability due to the depletion of fiscal buffers. The agency outlines conditions that could trigger an upward revision of Botswana's credit rating, including enhancing the nation's capacity to withstand economic shocks, diversifying the economy, improving the business environment, and successfully implementing the government's development agenda without a substantial increase in the debt burden. The rating affirmation reaffirms Botswana's robust economic performance and prudent fiscal management, emphasizing the importance of maintaining strong institutions and policy frameworks that uphold macroeconomic stability.
7th November	Botswana's ban on imported vegetables is working, says its president as he seeks re-election. (News 24)	President Mokgweetsi Masisi said that the ban on vegetable imports has been successful. He noted that the vegetable import bill reduced from ZAR861.61 million in 2021 to ZAR247.34 million in 2022, and that there had been increased investment in the agriculture sector. Plans are underway to create a horticulture market which will promote industry produce and encourage more citizen participation in associated value chains. The President noted challenges of the import ban, such as low-quality products and shortages of some vegetables and varieties in the market.
8th November	De Beers sales slump to lowest since Covid-19. (Rapaport News)	De Beers’ rough-diamond proceeds plummeted to USD80 million at its latest sales cycle as the market slowdown persisted and India entered a voluntary import freeze. The total, including the October sight and auctions, was down 82% compared with the equivalent period a year ago and was the lowest since the peak of the Covid-19 crisis in 2020. Sales fell 60% from September’s USD200 million. De Beers is limiting supply and continued to offer flexibility to buyers to defer 100% of their allocations.

NEWS HIGHLIGHTS

9th November	EU to propose ban on Russian diamonds next week – report. (Rapaport News)	The European Union will move ahead with a ban on Russian diamonds after receiving approval from the Group of Seven (G7) countries. European countries including Belgium had demanded that the G7 give a degree of backing to sanctions plans. The bloc has not yet banned Russian diamonds because of disagreement over how to implement sanctions and prevent the goods from going to other trading centres instead.
10th November	Remote work reducing office space occupancy rates in Botswana, according to KnightFrank. (BW TechZone)	According to real estate data firm KnightFrank, the prominence of remote work in Botswana is leading to more vacancy rates in office real estate as employers scale back on office space. According to KnightFrank data, prime office rents in Gaborone are down by 14% compared to the end of 2020 because of an amalgamation of businesses working remotely and pandemic-induced economic slowdown. Nevertheless, the retail space sector is showing resilience as demand is still strong, underpinned by retailers who have improved their margins by boosting their online presence.
13th November	Lucara slashes outlook following severed HB Deal. (Rapaport News)	Lucara Diamond Corp. has lowered its full year forecast due to the termination of its supply agreement with HB, as well as the broader slowdown in the rough market. Lucara has revised downwards revenue and sales volume for 2023 from its initial forecasts. The revised revenue is expected to reach between USD160 million and USD190 million, compared with the initial USD200 million to USD230 million. Sales volume will fall to between 365,000 and 385,000 carats, rather than the initial estimate of 385,000 to 415,000 carats, while output will come to 395,000 to 405,000 carats, versus the original prediction of 395,000 to 425,000 carats.
20th November	Botala Energy's major move with BSE secondary listing. (Mmegi)	Botala Energy Ltd, an emerging gas producer, has announced plans for a secondary listing on the Botswana Stock Exchange (BSE). Botala Energy Ltd will list all its issued shares on the foreign main board of the BSE in accordance with the Listings Requirements. This move allows the company to expand its reach and potentially attract new investors in the Botswana market. The company's market capitalisation is currently USD10,885,083.
20th November	Solar power for Debswana Mines. (Idex Online)	Debswana has started using solar power at its head office, The grid-tied solar photovoltaic (PV) plant is the first of its kind and magnitude in the mining sector in Botswana. Debswana intends to scale up the use of solar energy in mining operations as part of a pledge to achieve carbon neutrality by 2030.
20th November	Lucara revenues defy market downturn. (Mmegi)	Lucara Diamond Corp's Q3 2023 sales increased by 14% compared to the previous year, reaching USD56.9 million, outperforming market expectations. The strong financial performance is attributed to operational efficiency, allowing the company to cut costs and enhance productivity, despite the subdued diamond market.

NEWS HIGHLIGHTS

20th November	De Beers and Botswana to seek new diamond deposits. (Idex Online)	Under the latest sales agreement, De Beers and the Botswana government will work together to find more diamond deposits outside of Botswana. According to the Minister of Minerals and Energy, Botswana mines are aging and hence the need to look beyond and continue generating wealth for the country.
21st November	MMG to acquire Botswana copper/silver mine. (Mining Weekly)	MMG has entered into an agreement to acquire Khoemacau's copper and silver mine. Khoemacau and MMG noted that about USD1 billion has been invested in the development of the Botswana mine over the past 12 years. Current output at the mine is 60,000 tones per annum of copper and 1.6 million ounces a year of silver.
23rd November	Botala to start production by end of 2024. (Sunday Standard)	Botala Energy predicts starting production of gas in late 2024. The company is investigating coal bed methane (CBM) seams in a 420 km2 area near Serowe. The CBM will be used to generate electricity, with estimated resources of 320 billion cubic feet (8.96 trillion kg) of gas underground. Botala Energy plans to achieve full production by 2026.
23rd November	Sekaname signs deal to supply power to BPC. (Botswana Gurdian)	Sekaname Energy, a local coal bed methane gas power production company, has signed a power purchase agreement to supply 6MW of power to Botswana Power Corporation (BPC). The company has been working on the project for 18 years. Construction of the power line will begin soon, and full supply is expected after 18 months. Sekaname is also in the process of launching a Liquified Natural Gas (LNG) project and a Hydrogen project concurrently with this power project. The company plans to spend over USD500 million to reach its target of a 90 MW powerplant. The government has undertaken that BPC will buy the generated electricity at reasonable tariffs, providing cash flow to developers for gas extraction development.
24th November	Trans-Kalahari Railway gets 12 expressions of interest. (Construct Africa)	The Trans-Kalahari Railway Project Management Office (TKR-PMO) has revealed that 12 companies or groups submitted expressions of interest to develop the Trans-Kalahari Railway between Botswana and Namibia as a public-private partnership. The objective is to secure a contractor to design, build, finance, run and maintain a new railway between the two countries. The railway will run for about 1500km from Mmamabula coalfields to Walvis Bay port in Namibia.
30th November	Giyani secures USD16 million financing for Botswana manganese project. (Mining.com)	Giyani Metals has secured USD16 million financing from the Industrial Development Corporation of South Africa (IDC) to fund the development of its K. Hill battery-grade manganese project in Botswana. The IDC funding is part of the USD26 million funding package and the remaining USD10 million funding will be secured from a strategic investor.

NEWS HIGHLIGHTS

10th December	BoB's first rate cut is not the deepest. (Sunday Standard)	Bank of Botswana's MPC has reduced the MoPR by 25 basis points from 2.65% to 2.40% at its December meeting, marking the first cut since August 2022. The MPC predicts the economy to operate below full capacity in the short-term. Annual GDP growth is forecast to slow to 3.8% in 2023 and recover to 4.4% in 2024.
15th December	Minister Moagi commissions Bobonong 3MW Solar PV. (Weekend Post)	Botswana has launched the Bobonong 3MW Solar PV plant in Bobirwa, marking a significant milestone in the country's energy security and sustainability journey. The plant, part of BPC's Maduo 2026 Strategy, can power 220 households and is part of a 25-year Power Purchase Agreement between Botswana Power Corporation (BPC) and Sturdee Energy. The BPC is also procuring solar PV projects at ten additional sites.
15th December	Scatec prepares for Botswana solar plant construction after reaching financial close. (Scatec)	Scatec ASA has secured the first 60 MW of the 120 MW Mmadinare Solar Complex in Botswana, marking the country's first utility-scale solar project. The plant will reduce CO2 emissions and power 20,000 households annually. Scatec owns 100% of the project and will be the designated engineering, procurement, and construction (EPC) company, asset manager, and operations and maintenance (O&M) service provider.
24th December	Government seeds P1 billion towards fuel security. (Mmegi)	Botswana Oil Limited (BOL) has kick-started the construction of a 60 million litre storage facility in Gantsi at an expected project cost of P1 billion. The facility will be located along the Trans-Kalahari Highway and is meant to strengthen the security of fuel supply in the country. BOL officials noted that while the international threshold for a nation to be regarded as fuel secure is gauged on its ability to withstand supply shocks for up to 90 days, Botswana's strategic storage capacity currently stands at only 18 days. The local commercial buffer stock, which indicates private storage capacities, stands at less than five days against a desired minimum standard of 14 days.
25th December	US (finally) removes origin loophole for Russian diamonds. (Rapaport News)	US President Joe Biden has signed an executive order banning Russian diamonds, even if they were manufactured in a third country. The order amends a March 2022 order that prohibited the import of nonindustrial Russian diamonds into the US. It removes the loophole of "substantial transformation," which allowed Russian stones polished in India or other cutting centres to enter America legally.
28th December	Pula's downward crawl maintained at 1.51%. (Mmegi)	The Ministry of Finance has announced the rate of downward crawl of the Pula against the basket will be maintained at 1.51% per annum for 2024. Similarly, the Pula basket weights are maintained at 55% Special Drawing Rights and 45% South African rand. The maintenance of the rate of crawl is due to expectations that local average inflation will be higher than major trading partners.

MACRO-ECONOMIC DATA

Key Economic Data	unit	2017	2018	2019	2020	2021	2022	2023Q1	2023Q2	2023Q3	2023Q4
Annual Economic Growth											
GDP	%	4.1	4.2	3.0	-8.7	11.9	5.8	5.2	4.8	3.6	..
Mining	%	6.3	8.4	-3.7	-26.5	29.8	7.5	5.1	7.3	3.9	..
Non-mining private sector	%	3.7	2.9	4.2	-6.7	8.8	5.5	6.0	4.3	3.4	..
GDP current prices	P bn	166.65	173.73	179.90	171.39	207.74	251.73	6.39	6.71	6.18	..
GDP 2016 prices	P bn	171.18	178.35	183.76	167.72	187.63	198.48	5.21	5.03	5.07	..
Money & Prices											
Inflation	%	3.2	3.5	2.2	2.2	8.7	12.4	9.9	4.6	3.2	3.5
Prime lending rate	%	6.50	6.50	6.25	5.25	5.25	6.76	6.76	6.76	6.76	6.51
BoBC 7/14-day	%	1.45	1.52	1.41	1.04	1.10	2.65	2.65	2.65	2.65	2.40
Trade & Balance of Payments											
Exports - total goods	P bn	61.67	67.17	56.33	49.12	82.28	102.51	21.80	23.15	19.61	..
Exports - diamonds	P bn	54.38	60.41	51.01	43.30	74.13	89.22	18.17	19.52	15.17	..
Balance of payments	P bn	-4.28	-4.20	-12.02	-20.06	-2.87	4.49	-1.70	7.54	..	..
Foreign Exchange											
Exchange rate BWP per USD	end	9.87	10.73	10.63	10.79	11.74	12.77	13.18	13.48	13.66	13.42
Exchange rate ZAR per BWP	end	1.256	1.344	1.330	1.356	1.355	1.328	1.381	1.392	1.382	1.380
FX reserves	$ bn	75.02	66.57	61.71	49.41	48.06	4.22	4.29	4.89	4.68	..
FX reserves	P bn	73.69	71.43	65.23	53.36	56.02	54.53	55.89	66.11	63.87	..
Financial Sector											
Deposits in banks	P bn	63.58	69.27	75.71	80.54	84.36	90.93	95.18	96.02	102.66	..
Bank credit	P bn	54.18	58.33	62.77	65.55	68.92	73.05	76.27	79.23	80.20	..
BSE index		8,860	7,854	7,495	6,879	7,010	7,726	7,954	8,055	8,662	8,930
Business Indicators											
Diamond production (a)	mn cts	22.96	24.38	23.67	16.87	22.70	24.48	6.99	5.92	5.94	..
Copper production (b)	'000t	1.24	1.46	0.00	..	11.74	34.20	14.87	14.10	13.08	..
Electricity consumption	GWh	3,772	3,919	3,906	3,842	3,928	4,265	1,166	1,125	1,272	..
Crude oil (Brent)	$/bar	66.73	50.57	67.77	51.22	77.24	82.82	79.19	74.51	95.86	77.69
Employment (formal) (f)											
Government		129,009	156,785	156,785	152,973	152,225	143,022				
Parastatals		19,444	23,497	23,497	18,933	21,056	18,674				
Private sector		193,745	250,778	*305,242*	*305,810*	*321,176*	*324,680*				
Total		342,198	431,060	*485,524*	*477,716*	*494,457*	*486,376*				

Govt Budget		2019/20	2020/21	2021/22	2022/23 Preliminary (d)	2023/24 Revised (e)	2024/25 Projection (e)
Revenues	P bn	54.30	49.37	68.57	74.10	81.67	83.69
Spending	P bn	65.40	65.79	68.68	74.09	87.38	88.78
Balance	P bn	-11.10	-16.41	-0.11	0.01	-5.71	-5.09
Public debt & guarantees	P bn	38.18	42.37	49.81	58.28	58.95	59.53
Govt deposits at BoB	P bn	19.86	6.20	12.82	14.02	..	..
GDP	P bn	180.94	171.91	216.76	259.75	284.71	308.31
Revenues	%GDP	30.0%	28.7%	31.6%	28.5%	28.7%	27.1%
Spending	%GDP	36.1%	38.3%	31.7%	28.5%	30.7%	28.8%
Balance	%GDP	-6.1%	-9.5%	0.0%	0.0%	-2.0%	-1.6%
Public debt & guarantees	%GDP	21.1%	24.6%	23.0%	22.4%	20.7%	19.3%
Govt deposits at BoB	%GDP	11.0%	3.6%	5.9%	5.4%	..	

Sources: BoB; MFED; Statistics Botswana; Department of Mines; CIPA; BSE; US Energy Information Administration; Bloomberg; Econsult

Notes:
(a) Figures include production from Lucara Diamonds (Karowe mine) and Debswana. In 2016 and 2017, figures also include production from Gem Diamonds (Ghaghoo) and Lerala mines. (no longer operational)
(b) Copper production starting Q2 2017 for Mowana mine and Q2 2022 for Khoemacau
(c) Numbers in Italics reflect revisions from the previous review.
(d) Preliminary budget outturn for 2022/23
(e) Budget forecast/MTFF
(f) Employment figures up to 2018 are not comparable with those from 2019 onwards due to changed methodology of data collection and reporting

POWER INVESTMENTS AND THE RENEWABLE ENERGY TRANSITION[1]

1. Introduction

The COP28 Conference held in December 2023 in the United Arab Emirates has once again focused the world's attention on the need to phase out the use of fossil fuels in order to reduce emissions of greenhouse gases (GHGs)[2] and contain the risks of highly destructive global warming and climate change[3]. While there is broad agreement on this objective, and the need to contain global warming at 1.5^{0}C above pre-industrial levels as agreed at COP21 in Paris, 2015 – there is much less agreement on the specifics of how to achieve this, in terms of actions and binding timelines. There is considerable evidence that the 1.5^{0}C target is not going to be achieved on the basis of current trends, and that the adverse impact of climate change in terms of extreme weather patterns, and the impacts on agriculture, food security, disease, habitation and migration will be that much worse. Hence the dissatisfaction, in some quarters, with the COP28 concluding statement that made rather weak commitments to reducing the use of fossil fuels – notably coal, oil and gas – which are the major cause of global warming.

Notwithstanding the lack of binding international commitments, all countries have to make domestic policy decisions in the context of global warming and the changing global environment regarding the use of fossil fuels. Such policy decisions are often complex, not least because of the long time horizons and high levels of uncertainty involved, and the fact that market prices – e.g. for commodities and investments – do not fully reflect economic, environmental and social costs and benefits, in part due to a wide range of explicit or implicit subsidies. In this note we explore the policy choices facing Botswana, and make proposals for how better policy decisions can be made that reflect the long-term interests of Botswana. This is particularly relevant for decisions relating to achieving long-term energy security in a cost-effective manner, at a time when significant resources are being invested in the expansion of coal-fired power generation.

The note is structured as follows. The next two sections consider Botswana's greenhouse gas emissions and its "Nationally Determined Contribution (NDC)", laying out intentions regarding the country's GHG emissions, the mitigation of those emissions, and adaptation to climate change, as submitted to the UNFCCC. Given that the NDC is a national document, this section also discusses the need for policy consistency across different branches of government. Sections four and five consider decision-making around investment in power generation, notably choices between investment in coal-fired power generation and the use of renewable energy. Section five discusses how these issues affect the private sector, while section six concludes by looking at prices and subsidies relevant to fossil fuel use, and the need for a level playing field regarding investment decisions.

2. Botswana's GHG emissions

Botswana's GHG emissions are caused mainly by the energy sector, specifically by coal-fired electricity generation and transport. The most recent GHG inventory exercise dates back to 2015, which derived total GHG emissions of 13,057Gg CO_2eq (excluding emissions from land use)[4] . Of this, fuel combustion by the energy sector contributed 71%, including 39% from coal-fired power generation, 19% from transport, and 11% from commercial, institutional and household fuel use. The second largest contributor was agriculture, at 14% of total emissions. This is mainly from livestock, as the sector is a large emitter of methane (a particularly powerful GHG). The third largest contributor was industry, mainly from the production of soda ash. Other notable contributors are solid waste disposal (mostly methane), and cement production. Emissions from land use are negative, with CO_2 emissions from the conversion of undeveloped land to farming land more than offset by CO_2 absorption from forest land.

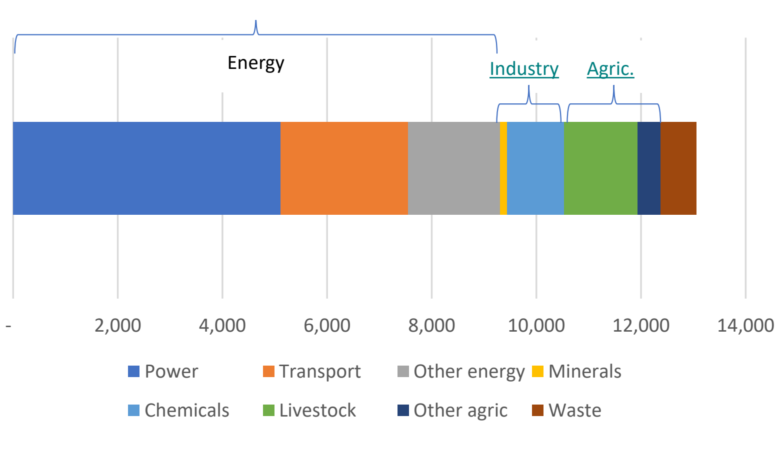
[1] Prepared with the assistance of Balazs Horvath, Resident Representative, United Nations Development Programme

[2] The main GHG is carbon dioxide (CO_2), but methane (CH4) is also an important contributor to global warming.

[3] COP stands for Conference of Parties, an annual UN Climate Change Conference that assesses progress on combatting climate change. The COP is the supreme decision-making body of the United Nations Framework Convention on Climate Change (UNFCCC).

[4] Botswana's National Greenhouse Gas (GHG) Inventories and Report for 2014 and 2015, UNDP.

Figure 1: Botswana's GHG emissions, 2015 (excl. land use) ($GgCO_2$ equivalent)



Source: Botswana's GHG Inventory, 2014 and 2015, UNDP

Given the structure of CO_2 emissions, initiatives for reducing those emissions (or reducing the growth rate of those emissions) are likely to focus on electricity generation and transport.

3. Botswana's NDC

Although there are no binding international commitments relating to the mitigation of GHG emissions, countries that are members of the United Nations and have signed up to the UNFCCC have committed to reporting on their national plans for the mitigation of GHG emissions and adaptation to the impact of climate change. These plans are laid out in each country's "intended Nationally Determined Contribution (NDC)", submitted to the UNFCCC. Botswana submitted its first and to date only NDC to the UNFCCC in 2016. This document stated that "Botswana intends to achieve an overall emissions reduction of 15% by 2030, taking 2010 as the base year. Base year emission estimation is 8,307 Gg of CO_2 equivalent". This implies an absolute reduction in GHG emissions. Subsequent documents suggest, however, that this is not exactly what was intended, and that the intention is to reduce the growth rate of GHG emissions, which will still increase in absolute terms. Botswana's Third National Communication to the UNFCC presented in 2019 confirms that GHG emissions will continue to grow, to a total of around 26,000 $GgCO_2eq$ by 2030 under the "Business As Usual" (BAU) Scenario, or around 23,000 $GgCO_2eq$ under a mitigation scenario (p.164); the mitigation scenario envisages a roughly 12% reduction in GHG emissions as compared to the BAU scenario. The BAU scenario envisages coal continuing to be used for almost all power generation, while the mitigation scenario envisages a significant shift to renewable energy, amongst other mitigation actions.

An updated NDC has been in the process of preparation since 2021, but has not yet been finalised for submission to the UNFCCC. The draft Second NDC contains similar projections, but with stronger mitigation actions that add up to a 15% reduction in GHG emissions by 2030, relative to BAU.

4. Energy Investment Plans

With power generation making the largest single contribution to Botswana's GHG emissions, efforts to reduce those emissions will be crucially dependent upon the types of energy investments made in the coming years. However, energy investment decisions should not just be driven by GHG and global warming issues, but by the need to develop energy sources for the Botswana economy and population that can deliver energy in a sustainable manner at the lowest cost over the long term. In this regard, it is important to note that energy investments are capital intensive, and as a result have high upfront capital costs and a long lifespan. Energy investments, once made, lock in particular technologies, fuel uses, costs and methods of operation for a long period of time. Making appropriate decisions therefore requires consideration of likely long-term trends, including likely price, cost, tax and policy developments, and not being solely influenced by current circumstances.

Botswana's energy plans are set out in the Government's Integrated Resource Plan (IRP), originally prepared in 2020 and then revised and updated in 2022[5] . The IRP sets out projections of domestic electricity demand over the period to 2030, and lays out the intended set of investments in energy generation to meet this domestic demand. It also anticipates that eventually there will be surplus power generated to enable electricity exports.

The new-build energy projects laid out in the 2022 revised IRP are set out in Table 1 next page, along with their contributions to power generation capacity and intended timelines. Baseline power generation is the existing capacity from Morupule A and B coal-fired power stations, as well as the Orapa and Matshelagabedi diesel plants.

[5] Ministry of Minerals and Energy, Revised Integrated Resource Plan for Electricity for Botswana, July 2022

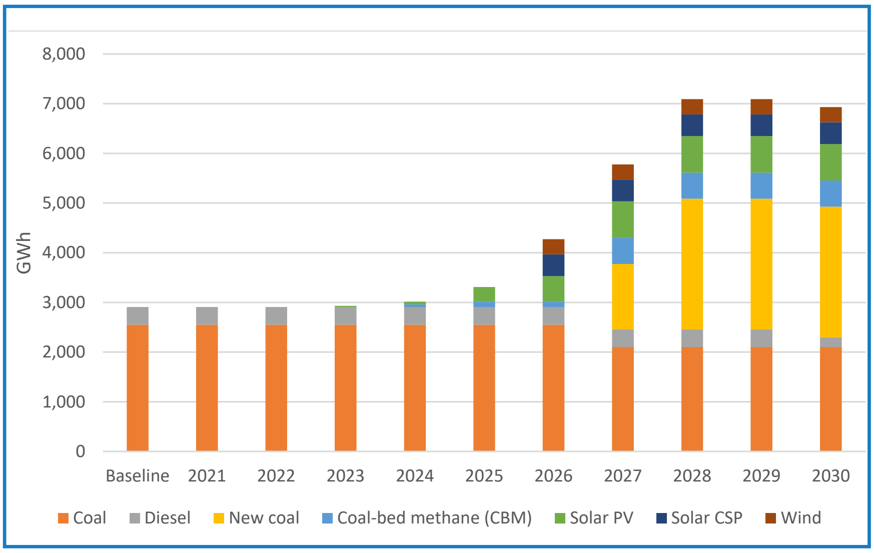
Table 1: Botswana's Energy Investment Plan, 2021 – 2030 (MW)

	EXISTING		NEW BUILD PROGRAMME					
Date	Coal	Diesel	New coal	Coal-bed methane (CBM)	Solar PV	Solar CSP	Wind	Total installed capacity
Baseline	728	163						891
2021	728	163			0			891
2022	728	163			235			1126
2023	728	163			235			1126
2024	728	163			235			1126
2025	728	163		100	335		100	1426
2026	728	163	300	100	335	200	100	1926
2027	600	163	300	100	335	200	100	1798
2028	600	163	300	100	335	200	100	1798
2029	600	163	300	100	335	200	100	1798
2030	600	90	300	100	635	200	100	2025

Source: IRP, 2020 and Revised IRP, 2022

Despite only being published in 2022, the revised IRP is already to some extent outdated. The first large-scale solar photovoltaic (PV) plants, with capacity of 200MW, are well behind schedule, with commercial operation for the first one now only likely in 2025, as compared to the original proposal of 2022. There are also questions as to whether some of the other procurements will proceed on schedule. Perhaps more importantly, it has been announced that the proposed new 300MW coal fired power station included in the IRP will be doubled in size to 600MW. It is now planned that by 2030, the total installed power generation capacity of 2,025MW will comprise approximately 69% fossil fuels (coal, diesel and coal-bed methane) and 31% renewables (solar and wind power). With respect to actual power generation, this translates to approximately 21% from renewable sources while 79% will remain from fossil fuel sources[6] .

Figure 2: Projected Power Generation by Source (based on updated build programme) (GWh)



Source: calculations based on revised IRP updated with public information

[6] The reason for the difference between power generation capacity and actual power generated is that different sources of power have different capacity factors. For instance, solar PV (without storage) only generates power during the daytime, while coal-fired power can in principle generate power 24/7 (even though, in practice, the ability of Botswana's existing coal-fired power stations at Morupule to actually generate power has been well below their "nameplate" capacity due to a wide range of operational and performance problems.

5. The Key Question: Coal vs Solar

Coal has always been the backbone of Botswana's energy system. Discussions on its future role need to take multiple aspects into account. These include the cost profile of mining and burning coal to generate power, the subsidies causing final user prices to deviate from the actual cost of coal-based power, energy security, and the externality costs of burning coal in terms of air pollution and climate change—now borne by society at large, including unborn generations. Such discussions also need to consider power generation based on renewables as the alternative; most promisingly, solar.

The playing field for energy investment decisions is not a level one, due mainly to a high level of subsidies for coal. First, coal-fired power generation entails high levels of CO2 emissions, which have an environmental and social cost. Although society bears this cost, the producers of coal-fired power do not (unless a carbon tax or other measures are in place). A second implicit subsidy arises because coal-fired power stations are now almost impossible to finance commercially, due to the risks involved; the provision of government guarantees, whether explicit or implicit, needed to unlock coal financing is another hidden subsidy. A third subsidy arises from the subventions paid to the Botswana Power Corporation (BPC) by Government, given regulated tariffs that do not cover the cost of coal-fired power generation.

Even without including the cost of externalities, solar PV provides cheaper electricity, costing less per kWh, when taking into account the cost of creating generation capacity and that of running this capacity over the lifetime of the asset (levelized cost; see Box 1). Solar assets hold a near-certain potential to be able to pay for themselves, while investments in coal-based power generation will almost certainly be unable to recover their costs. Coal-based power generation will become increasingly uncompetitive as cheaper renewable energy sources become available, resulting in a stranded asset that will need to be written off or further subsidised by governments. Renewable power also reduces exposure to volatile fossil fuel prices[7] by shifting reliance to free and steadily available sunshine—a boost to energy security. Finally, the climate change impact of solar is minimal and one-off (related to construction), compared with massive, ongoing adverse impact from using coal.

Box 1. Relevant Excerpts from IRENA's 2022 Report on Renewables[1]

- By 2022, **solar PV's global weighted-average levelized cost** declined to **USD ˚0.049/kWh—29% lower than the cheapest fossil fuel-fired option.**
- Around **86%**, or **187˚ gigawatts** (GW), **of newly commissioned, utility-scale renewable power generation projects commissioned in 2022 had a cost of electricity lower than the weighted-average fossil fuel-fired cost by country/region** (the 2021 figure was 174˚ GW).
- Between 2010 and 2022, **1,120˚GW of renewable power generation with a lower Levelized Cost of Energy (LCOE) than that of the weighted-average fossil fuel-fired LCOE by country/region was deployed.**

[1] IRENA (2023) Renewable power generation costs in 2022, International Renewable Energy Agency, Abu Dhabi. ISBN 978-92-9260-544-5

The main argument used to support the investment case for coal is that it can provide reliable base-load power over long periods, while power from solar PV cells is variable in a not fully predictable way[8]. Furthermore, traditional electricity distribution grids can handle a share of variable renewable energy (VRE) in total power supply of up to around 15% without significant upgrades; while smart grids are required (at the cost of additional investments) to handle larger shares. Battery storage can be used to store excess solar energy generated during the daytime for use at night. Current battery technologies are too costly for large-scale storage, although they can be cost effective in off-grid situations for smaller settlements, releasing power as needed during periods when generation levels fall short of demand (much like water towers store and supply water for an area). However, the likelihood is that within a decade, battery technology would have improved sufficiently to make it a cost-effective option for grid-scale storage of energy from solar sources.

Other measures can help to increase the renewable energy share. First, if a small grid connects to a larger neighbouring one for which the joint share remains easily manageable, especially if demand and supply peaks across countries or across sources of power (e.g. hydro versus solar PV) occur at different times. Second,

[7] Fossil fuel prices vary substantially over time owing to geopolitical shocks, changes in seasonal demand, shifts in industrial production cycles, and supply-side constraints.

[8] Solar PV cells can only generate power during the daytime, and are also subject to reduced generation capacity on cloudy days

supplementing solar PV with energy from Concentrated Solar Power (CSP) units (heat from solar CSP can easily be stored for half a day, and can then be converted into power at night using steam turbines). A third option is to strike an offtake agreement with a large producer of clean hydrogen to take any excess electricity and provide hydrogen in return. This is a relevant example for Botswana, with neighbouring Namibia investing in large-scale green hydrogen production and infrastructure. Finally, natural gas-based power is often used as a flexible generation capacity to cover volatile peak demand, to complement variable renewables-based power generation as a transitional fuel used on the path toward decarbonization.

All in all, coal is no longer the cheapest source of power in Botswana even with current subsidies and without carbon taxes. Since the likely direction of both coal subsidies and carbon taxes is toward making coal more expensive to use, decision-makers with foresight would reject investments in coal going forward. In fact, if the trend of increasingly effective carbon pricing continues, most fossil fuels will cease to be competitive in a decade, especially given the falling price of battery storage. Once the falling price of solar PV plus battery storage falls below the rising price of coal-fired power (first in economic terms, then in financial terms), then coal-fired power really is obsolete and creates stranded (obsolete) assets. While the timing of this crossover point cannot be predicted with any certainty, it is likely that it will occur quite early on in the lifespan of any new coal-fired power investments.

Pricing is a critical component of this comparison. The key measures to get carbon pricing right are to phase out all fossil fuel subsidies; auction emission permits for large emitters in an aggregate amount aligned with Botswana's climate targets; and implement a broad-based carbon tax for small emitters. Since these steps would substantially reduce ill-targeted, regressive budgetary spending or raise revenues, they would create recurrent fiscal space that can cover the resource needs of supporting policies to make the carbon price shift economically and socially sustainable.

A further factor to consider is that carbon taxes or similar means of pricing (and discouraging carbon emissions) are being increasingly used around the world, perhaps most comprehensively in the European Union (EU). The EU has also committed to introducing a Carbon Border Adjustment Mechanism (CBAM), a tariff on carbon-intensive imports to avoid EU producers (who pay a carbon price) being undercut by imports from countries whose producers do not pay a carbon price. For countries exporting the relevant products to the EU, it then becomes rational to impose their own carbon tax (and retain the proceeds) rather than have their exporters to the EU pay the tariff, with the proceeds retained by the EU.

These developments in the EU are being mirrored by "green" criteria being applied to other goods and services, for instance in industries such as mining. This is particularly acute in diamond mining, where natural (mined) diamonds are competing with synthetic diamonds that often make claims of being produced with "clean" electricity (i.e. from renewable energy sources). This is one reason why Debswana is shifting away from the use of coal-fired electricity from BPC to generating its own power from solar sources. A decision such as this from the country's largest energy consumer – being followed by other mining companies - illustrates the extremely high risk of coal-fired power generation capacity becoming a stranded asset (and hence a financial liability for government).

6. The Role of the Private Sector

Implementation of the IRP entails a significant change in the way in which power generation projects are undertaken. Previous power station projects have been undertaken directly by BPC, which has financed, constructed, operated and maintained the Morupule A and B power stations. The new implementation model is that BPC contracts with a private sector company – an Independent Power Producer (IPP) - to build, finance, operate and maintain a new power station and sell the power to BPC under agreed terms, including pricing, availability and offtake commitments, contained in a Power Purchase Agreement (PPA), typically for a period of 25 or 30 years. This is now a widely used model, and means that the government, through its state-owned enterprise, BPC, no longer has to take capital financing, construction and operational risks; these are now taken by the private sector.

BPC retains some risks, however, notably market risk, in that it has to be able to sell the power at a price that enables it to cover the price paid to the IPP for the power that it is obliged to purchase. There are some potential pitfalls here. First, it must have the demand for that power (either from the domestic or export markets); second, electricity tariffs are regulated by the Botswana Energy Regulatory Authority (BERA), and BPC faces the risk that BERA will not allow BPC to charge cost-recovery tariffs, which is currently the case, given that electricity tariff decisions are highly politicised.

To date, there appears to be considerable demand from the private sector to participate in the Botswana electricity market as IPPs. Several contracts have been signed for

IPP projects, including 5 small scale solar PV projects, one large-scale solar PV project, and a new coal-fired power station. Luckily, BPC has an investment-grade credit rating from Moody's, and it is seen as a reliable partner in a PPA. What has not been publicly disclosed is whether the private sector IPPs have required any formal government guarantees to back up BPC's financial commitments under the PPA contracts. It is possible that these have not been required, at least for the solar projects, but ultimately any financial shortfalls faced by BPC will have to be met by government, not least because BPC's credit rating is entirely based on what Moody's considers to be an implicit government guarantee to BPC, in that GoB would never let BPC default on its financial commitments. So far, Government has always been ready to bail out BPC – in part because BPC's losses are in part due to the Government regulator's refusal to allow BPC to charge cost-recovery tariffs.

7. Policy Implications

Botswana's power generation investment decisions are critical, long-term and expensive. Appropriate decisions need to factor in (i) likely price trends for different types of power generation technology and the risk of lost public funds stemming from stranded assets; (ii) trends regarding carbon taxation; (iii) trends regarding the application of environmental, social and governance (ESG) criteria by financiers, investors and customers, in particular from a carbon-emission and green growth perspective; and (iv) Botswana's international commitments.

Given all of the above, the proposed doubling of the capacity of the new coal build programme from 300MW to 600MW is somewhat puzzling. As noted above, Botswana has made international commitments to a 15% reduction in GHG emissions below the BAU base case, to be achieved by reducing reliance on coal to generate electricity, and its substitution by renewable energy. The draft updated NDC provides considerable detail as to how this mitigation target can be achieved; doing so allows a maximum of 300MW of new coal fired power. Doubling this to 600MW will involve a significant increase in GHG emissions, make it impossible to achieve the NDC target, and breach Botswana's international commitments to the UNFCCC and the COP.

Therefore, there seems to be an inconsistency in Government policy, on the one hand pushing for a faster and larger rollout of coal fired power, while at the same time making international commitments to targets based on minimal new coal-fired power generation. These actions are inconsistent with each other. Hence a more co-ordinated approach to investment in power generation and GHG emissions reduction is required across government. This must extend to BERA, which should not license any new coal-fired power generation projects that are inconsistent with Botswana's international commitments regarding GHG emissions – which essentially means a compete moratorium on any new coal-fired power stations.

It will also be necessary to invest in the national electricity grid to enable it to accommodate VRE. To some extent this is included in the Transitional National Development Plan public investment programme, but it needs to be scaled up and accelerated as NDP 12 is prepared.

A simple step that can be taken overnight toward levelling the playing field for renewables-based energy is to apply shadow carbon pricing, i.e., factor in the full economic, environmental, and social costs of burning coal when making investment decisions. This means not using current prices, but an approximation of the prices that will prevail in the future—defining the economic conditions in which the assets created by the investment will operate. This would help shift investment decisions, accelerate the shedding of obsolete high-carbon technology, and incentivize innovation in low-carbon technologies including carbon capture—all needed to help avert catastrophic climate change.

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