

# Ghana Green Fiscal Policy Assessment

September 2022

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## Recommendations

This report looks at the opportunities for incentivising a green fiscal recovery in Ghana, in the aftermath of the Covid-19 pandemic as part of the UN Partnership for Action on Green Economy (PAGE) initiative in Ghana and its workstream looking at influencing and supporting a green recovery in the country.

The recommendations made in the report are not new – they build on previous analysis and recommendations of PAGE – and are mainly focused on opportunities for driving low-carbon development and mitigation of current and future emissions in the energy and transport sectors. Most of these have been in some way discussed by the government and some efforts have been made towards implementing them. However, challenges remain, especially given fiscal and bureaucratic challenges in this agenda as well as aligning the incentives of various stakeholders to ensure buy-in.

They are not proposed as alternatives to, nor are they in competition with, a range of measures that can be taken to better-prepare Ghana for adapting to the impacts of climate change. Recommendations around providing an enabling environment for green finance are discussed in a second report<sup>1</sup>, published in conjunction with this one.

The reforms identified below that would support a green recovery in Ghana take into account the particularly challenging fiscal context. Nevertheless, with Ghana moving out of the emergency phase of the COVID-19 pandemic, there is a limited window of opportunity to influence the trajectory of the recovery. Actions taken over the next 18-24 months will determine whether Ghana's future growth path will be a climate compatible one. Because of this urgency of action, the following recommendations first focus on those reforms that could be implemented in the short-term.

In the context of fiscal tightening, rising debt and resistance to fiscal policy measures that are likely to increase prices, there are likely to be no simple solutions and most options will incur costs in some form, at least in the short-term. All the actions will therefore require strong political leadership and awareness-raising to generate public acceptance of the proposed measures. Both broad public information campaigns and dedicated outreach to private sector actors will be required, as well as a thorough assessment of the distributional impacts of the reforms and supporting measures to remedy any negative outcomes for the worse-off. **Further exploration of the prospects for introducing these reforms should be undertaken with key stakeholders to identify the most promising areas for rapid action.** Measures that may gain most support are likely to be aligned with broader objectives, such as job creation and local sector development, by providing economic incentives to back green initiatives, as well as helping to finance (e.g. through any resulting increase in domestic revenues) further green investment and compensatory transfers to mitigate the negative short-term impacts on the most affected.

### *Immediate reform measures that can help a green recovery:*

- **Continue to lift the national moratorium on additional energy capacity for renewable energy generation.** While moratorium has been relaxed in circumstances when a need for power

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<sup>1</sup> The Enabling Environment for Green Finance in Ghana, UNEP Ghana [2022]

arises, it still appears to be holding back private sector interest in investing in renewable energy. The moratorium was designed to address over-capacity issues among existing thermal power operators and so should continue to hold for new thermal power projects.

- **Strengthen the fiscal framework through import duty and VAT reform for the national manufacture of solar PV panels.** This in turn will support a green recovery through job creation. There appears to be a strong case to review the tax impact on the local manufacture of solar PV by businesses and mini-grid operators. Such change would remove distortions relative to imports and ensure the efficient operation of the VAT system along the supply chain. This type of reform, which strengthens the enabling environment, is vital if the planned private sector-led green recovery strategy is to be successful.
- **Explore the introduction of an emissions-based feebate system on imported vehicles and sustainable cocoa production.** Evidence (e.g. Mauritius) suggests these provide powerful incentives to switch towards more efficient technologies and feebates can be designed to be revenue-neutral, which is particularly important where there is limited fiscal space. However, there are likely to be technical challenges that will require immediate attention in ensuring the accurate and consistent measurement of the applied emissions standards.
- **The prospect of raising additional government revenue from a Green Bond sovereign issuance appears good.** However, the timing of such an offer on the international market is key to delivering sustainable finance.

***Medium-term measures:***

- **If an increase in fuel taxes is not politically viable in the short term, the medium- to longer-term options should still be considered, starting initial preparations and design of compensatory measures.** Food and energy prices are historically high globally and Ghana is no exception<sup>2</sup>, leading to a loss of real income and erosion of living standards. Fiscal reforms, such as tax rises, that push prices further are therefore likely to meet strong resistance, such as that seen in response to the national budget 2022 tax measures. There is a good case to be made for carbon taxes in Ghana, particularly for diesel, both in terms of revenue generation and curbing emissions. However, recent political tensions would appear to block further roll-out of fuel taxes (or a wider carbon tax) at the present time.
- **There may be a role for consolidating existing levies under a broader carbon tax framework in future, and preparation could start now.** Short-term political resistance to tax reforms does not preclude the government from beginning consultations on future reforms and exploring options (such as revenue-neutral reforms, including feebates as above) for introduction when an opportunity arises. The effective implementation of such a reform can take a long time to introduce<sup>3</sup> and will depend on building public support and setting out a clear positive strategy for revenues, including measures for mitigating equity and economic impacts. Carbon markets

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<sup>2</sup> . In Ghana, for example, prices for cassava escalated by 78 percent in 2020-21, reflecting higher production costs and transport constraints, among other factors ([IMF, 2022: https://www.imf.org/en/Blogs/Articles/2022/09/26/africa-food-prices-are-soaring-amid-high-import-reliance?utm\\_medium=email&utm\\_source=govdelivery](https://www.imf.org/en/Blogs/Articles/2022/09/26/africa-food-prices-are-soaring-amid-high-import-reliance?utm_medium=email&utm_source=govdelivery))

<sup>3</sup> For example, South Africa's carbon tax took almost a decade from initial consultations to its introduction in 2019.

are also a great opportunity to generate revenue that can be put towards achieving clean energy and other key development aims.

# 1 Introduction

As a country responsible for a very small share of global emissions, Ghana's key climate change-related priorities in the lead-up to COP27 are primarily focused on adaptation and finance, along with many other developing and climate-vulnerable countries. Alongside this crucial agenda, Ghana grapples with the challenges of growing its economy sustainably while delivering on other priorities such as job creation, development of local industries, and provision of social services.

Set against this background, and as part of the PAGE initiative workstream influencing and supporting a green recovery in Ghana, this study provides an exploratory analysis of the alignment of the fiscal policy framework in Ghana with green recovery objectives, in the context of the country emerging from the disruption of the COVID-19 pandemic. In Ghana, as elsewhere, the past two years has seen recent development gains undermined by the unprecedented global upheaval caused by the pandemic. What began as a health emergency quickly transformed into a phenomenon that brought about widespread economic and social disruption. Although no country proved immune to COVID-19, the impacts of the pandemic have fallen disproportionately on the most vulnerable.

This short-term crisis has also played out in the context of the long-term global crisis that is climate change. Global climate action is not yet at a level to provide confidence that the observed global temperature rise will be limited to a safe level. Temperature increases in countries such as Ghana will likely lead to the dislocation of economic activity and undermine social welfare. How governments face the twin challenges of responding to the COVID-19 pandemic and climate change will determine the prospects for sustainable national development over both the near and medium-term.

The overall objective of this study is to assess those opportunities that would leverage green fiscal policy instruments to raise much needed public revenues at the same time as making substantial progress on climate change, biodiversity loss, and pollution concerns. The study builds on the 2015 UNEP report *Green Economy Fiscal Policy Analysis – Ghana* that proposed options in the energy and transport sectors considered to have the most potential to improve environmental quality and create the preconditions for green economy investment in the country (UNEP, 2015).

This report begins by reviewing the present economic and fiscal situation in Ghana, as these relate to the COVID-19 response. National climate change targets are also briefly described. Section 2 then provides a review of the reforms recommended in the 2015 UNEP study and a detailed account of what has happened since, with a focus on the energy sector. Section 3 maps relevant subsidies, the tax regime, and possible new revenue sources, with an analysis of the scope for reform. The report's recommendations draw from this analysis to identify the most promising fiscal policy reforms for Ghana, contextualized for the socio-economic realities post-COVID-19.

## 1.1. The economy pre-COVID-19

Prior to the COVID-19 pandemic, the Ghanaian economy had enjoyed a period of high economic growth (see Table 1). This growth was underpinned by the strong performance of Ghana's main commodity exports: gold, petroleum and cocoa products, accounting for 36%, 31% and 11% of exports, respectively (Trend Economy, 2022). These three commodities collectively made up approximately 84% of total exports revenue and contributed 31.4% to GDP in 2019 (World Bank, 2020) (OEC, 2019).

Government policies aimed to support a shift towards formalising the economy, widening the tax base, and expanding basic social protection to promote growth and stability. Industrial diversification, investment in electricity generation to boost manufacturing and production capacity, and reduced interest rates for capital intensive firms also led to wider socio-economic benefits, with lower poverty rates and increased job creation (Oxford Business Group, 2017 and 2019).

**Table 1: Gross Domestic Product, 2015-2019**

	2015	2016	2017	2018	2019
<b>Population (million)</b>	27.67	28.31	28.96	29.61	30.28
<b>Exchange Rate (Gh¢ /US\$)</b>	3.78	3.92	4.36	4.59	5.22
<b>GDP Current Prices (million Gh¢)</b>	180,399	215,077	256,671	300,596	349,480
<b>GDP Current Prices (US\$)</b>	47,767	54,858	58,920	65,556	66,984
<b>Non-oil GDP Current Prices (million Gh¢)</b>	175,707	214,050	248,226	289,988	334,632
<b>Per Capita GDP (Gh¢)</b>	6,520	7,597	8,863	10,150	11,541
<b>Per Capita GDP (US\$)</b>	1,726	1,938	2,035	2,214	2,212
<b>Rates of Change in % (Year on year)</b>					
<b>GDP Current Prices</b>	16.1	19.2	19.3	17.1	16.3
<b>GDP at Constant 2013 prices</b>	2.2	3.4	8.1	6.3	6.5
<b>Non-oil GDP at Constant 2013 prices</b>	2.2	4.6	4.6	6.5	5.8

Source: Ghana Statistical Service, 2020

However, Ghana struggled to retain these economic gains due to escalating fiscal deficits and increasingly unsustainable debt. Ghana's ratio of domestic revenues to capital expenditure of 9.7% and 11.5% in 2018 and 2019, added to the fiscal deficit from previous years (IMF, 2019). In 2019, 99.7% of domestic revenue was utilised to pay for just two expenditure items: public employees' compensation and debt servicing, leaving the country with next to no ability to support development expenditures. By this time, the fiscal deficit stood at 7% of GDP, whereas the public debt worsened from 59% in 2018 to 63% of GDP in 2019, the highest it had been in five years. Reasons for this deteriorating situation included the accumulating energy sector legacy debt and financial sector clean-up costs that involved closing several banks, insurance companies and microfinancing companies due to poor solvency and liquidity quality and capital shortfalls (Ackah, 2021). Poor petroleum revenue utilisation and the weak linkage between petroleum revenue management and the non-oil sector was another factor (IMF, 2019). The expected fiscal space that was to be generated from the inflows of oil revenue did not happen.

This situation resulted in an increasing public debt to GDP ratio since 2017. Ghana also fared weakly on its debt sustainability indicators in 2019, with public debt to revenues and grants ratio at 456%, and debt servicing to revenues and grants ratio at 94% (IMF, 2019). This outcome hampered Ghana's ability to achieve sustainable socio-economic growth (IFSA Assessment, 2020). While Ghana's revenue performance had improved slightly over recent years to 2019, with the overall tax-to-GDP ratio rising from 10.7 percent in 2011 to 12.3 percent in 2019, revenues still fell consistently below those required to match expenditure during this period.

Taxes in Ghana are typical of other countries around the world, with corporate income tax (CIT) and personal income tax (PIT) applying to corporate profits and individual earnings respectively, and value added tax (VAT), import duty, petroleum taxes and excise duties making up the indirect taxes. Tax revenues are collected almost equally between direct and indirect taxes, contributing 48% and 52% respectively in 2019 (Iddrisu et al., 2021). Most revenue under indirect taxes comes through VAT, customs collection, and import duties. Table 2 shows the composition of tax revenue as a share of GDP.

**Table 2: Structure of the Tax System in Ghana, 2011-2019 (%GDP)**

2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Corporate Income Tax</b>								
2.1	2.3	2.2	2.6	2.1	2.0	2.4	3.2	3.0
<b>Personal Income Tax</b>								
1.8	2.3	2.0	2.1	2.0	1.7	2.0	2.2	2.2
<b>Indirect Taxes</b>								
6.3	6.2	5.9	6.2	7.5	8.6	8.1	7.7	5.8
<b>Trade Taxes</b>								
1.9	2.0	1.9	2.0	1.9	2.0	2.1	2.0	1.6
<b>All Taxes</b>								
10.7	11.0	10.3	10.9	11.7	12.4	12.7	13.2	12.3

Source: *UNU-WIDER Government Revenue Dataset'. Version 2021*

At less than 13% of GDP, Ghana's tax-to-GDP ratio has remained below the average for the Sub-Saharan Africa (SSA) region of 15% for over a decade (see Table 3). There are several reasons for this, which have been investigated in recent studies. Iddrisu et al. (2021), for example, found that Ghana's customs and VAT collections were below average. The same result was found even after taking account of differences in rates compared to the rest of SSA, suggesting that this could be due to tax exemptions and/or weak compliance. Estimates of compliance tax 'gaps' in Ghana suggest that just 15-20% of Corporate Income Tax revenue potential is currently collected, as well as a gap of 39% in VAT and 32% in import duty, due to compliance and policy gaps in the tax system (World Bank, 2020). Based on these comparisons, there may be significant unmet potential for revenues to expand (IMF, 2019). However, there may be many factors limiting revenue reforms to meet this potential, such as institutional, political, or structural economic factors. Nonetheless, diversifying and strengthening the tax base through both policy and administrative reforms could provide an important improvement to support medium-term growth.

**Table 3: Total Taxes to GDP, Ghana and Sub-Saharan Africa, 2011-2019 (%GDP)**

	2011	2012	2013	2014	2015	2016	2017	2018	2019
<b>Ghana</b>	10.7	11.0	10.3	10.9	11.7	12.4	12.7	13.2	12.3
<b>Sub-Saharan Africa</b>	15.1	15.8	15.7	15.8	15.3	14.8	15.2	15.0	16.2

Source: *UNU-WIDER Government Revenue Dataset'. Version 2021*

## 1.2 The impact of COVID-19

A preliminary analysis in March 2020 by the Ghanaian government of the macro-fiscal impact of the COVID-19 pandemic showed that GDP growth had slowed down significantly ([Ministry of Finance,](#)



2020). There was also a drop in petroleum revenues, tax revenues, and import duties. Health expenditures increased amidst tighter financing conditions with consequences on the 2020 Budget. The additional expenditure in 2020 included US\$100 million support to the health sector for test kits, hospital beds, and medical utilities and equipment. US\$51 million was provided to the National Health Insurance Agency to support crisis frontline workers and pharmaceutical companies ([Ministry of Finance, 2020](#)). Extra budgetary expenditures also included the provision of hot meals and care packages to about one million people in need, along with electricity and water bill waivers at a cost of Ghc 6.8 billion. An additional Ghc 2.0 billion was spent with help from external funding on providing medical equipment and treatment, hiring health employees, and providing infrastructure and staff benefits (IMF, 2021).

Table 4 shows that Government revenue dropped to 12.3% of GDP in 2020 from 13.8% in the previous year, at the same time that expenditure increased to 28.2% from 21.2% percent in 2019. The performance of oil revenues in percentage of GDP fell by 50% in 2020 due to the falling international price of oil at the outset of the COVID-19 pandemic. Total oil revenue in 2020 was Ghc 2,918 million in comparison to Ghc 4,194 million in 2019 (IMF, 2021). However, oil revenues can only marginally reduce the revenue imbalance, given the country's commitment to set aside most of its oil revenue under the Ghana Stabilisation Fund (Gyeyir, 2019).

**Table 4: Central Government Budget Scenario, 2017-2022 (% of GDP)**

	2017 Actual	2018 Actual	2019 Actual	2020 Projected	2021 Projected	2022 Projected
<b>Total Revenues and Grants</b>	<b>13.9</b>	<b>14.5</b>	<b>14.0</b>	<b>12.9</b>	<b>14.9</b>	<b>15.0</b>
<b>Revenues</b>	13.3	14.2	13.8	12.3	14.5	14.7
<b>Of which tax revenue</b>	12.4	12.9	12.5	12.0	13.4	13.5
<b>Direct Tax Revenue</b>	5.1	6.1	6.3	5.8	6.1	6.1
<b>Indirect Tax Revenue</b>	5.1	4.7	4.6	3.9	4.6	4.7
<b>Oil Revenue</b>	0.9	1.5	1.2	0.8	1.4	1.4
<b>Total expenditure</b>	<b>18.7</b>	<b>21.5</b>	<b>21.2</b>	<b>28.2</b>	<b>28.9</b>	<b>25.4</b>
<b>Of which wages</b>	5.6	5.7	5.5	6.4	5.8	5.7
<b>Interest Costs</b>	5.3	5.6	5.5	6.4	8.0	9.1
<b>Subsidies</b>	0.0	0.0	1.0	2.7	2.7	1.0
<b>Overall Balance</b>	-4.7	-7.0	-7.3	-15.2	-13.9	-10.5

Source: ([IMF, 2019](#)) (IMF, 2021)

These budget expenses further shifted Ghana's debt situation and budget deficit, challenging the country's long term fiscal sustainability. The fiscal situation was exacerbated by the negative effect of the COVID-19 pandemic on the two major hubs of economic activity of Accra and Kumasi ([Ministry of Finance, 2020](#)). The impact from the COVID-19 pandemic severely affected the earlier years of Ghana's economic gain, as the country's GDP growth rate was revised down for 2020 from 6.8% to 0.9% ([IMF World Economic Outlook, 2020](#)).

Fiscal revenues from production and the export of oil products, cocoa, and gold, and their import duties, were hit. Ghana projected an estimated US\$ 1.0 billion loss in cocoa revenue and US\$ 977

million loss from crude oil revenues, amid international price falls during the early stages of the COVID-19 pandemic ([Onoja, 2020](#)) ([IMF World Economic Outlook, 2020](#)). As well as international price and demand shocks, domestic economic activities were also hampered by COVID-19 pandemic preventive measures such as social distancing and lockdowns, with repercussions on revenues from domestic taxes and social contributions. Additionally, the cost of many public services, particularly healthcare, went up due to rising demand.

The fiscal challenges posed by the COVID-19 pandemic exacerbated the already fragile debt sustainability position of Ghana in pre-COVID years. In 2020, Ghana's projected fiscal deficit amounted to 15.2% of GDP, which was a sharp increase from 2019 when it stood at 7.3%, and its external debt burden stood at 79% of GDP (IMF, 2021). Early in the pandemic, fiscal policy options were largely deployed to stabilise the health sector and public health facilities. The government then began to target response measures that would accelerate the economic recovery of the country from the pandemic. Moreover, the government waived the fiscal targets for 2020 and does not expect to return to fiscal sustainability until 2024 ([Ministry of Finance, 2020](#)).

Despite these measures, the Ghanaian economy was looking at a 6.6% fiscal deficit of the revised GDP in 2020. International borrowing was relied upon to buoy up Ghana's monetary and fiscal responses. The IMF approved the disbursement of about US\$ 1.0 billion as a rapid credit facility and approximately US\$ 100 million was disbursed by the World Bank ([World Bank, 2020b](#)). The Central Bank of Ghana also secured US\$ 1.0 billion under the Foreign and International Monetary Authorities (FIMAs) Facility of the US Federal Reserve.

This precarious fiscal position and the sharp decline in Ghana's economic growth will likely show its effect on socio-economic development, job creation, and employment in both the near and long term. Ghana was already in a fragile fiscal state as the country was trapped in a debt cycle due to an imbalance between its revenue and expenditure. This situation forced the country to rely on external borrowing to meet other budgetary expenditures (IFS, 2020). Therefore, the shock from the pandemic rendered the country fiscally exposed, with few policy options to support businesses and individuals against the economic impact of COVID-19 compared to the scale of financing available in higher income countries. Small businesses, specifically in the tourism, education, manufacturing, and transport sector were the worst hit, thus impacting employment and revenue generation. As of December 2020, an estimated 17% of businesses and more than 500,000 jobs were lost, the majority of them in the informal sector ([Apinga, 2020](#)).

Short and medium-term recovery efforts primarily focused on immediate health and socio-economic interventions. Government provided support to affected small and medium-sized enterprises (SMEs) and individuals by reducing the communications service tax, subsidising electricity bills, and providing care packages and free water. Nonetheless, the impact of these measures has further weakened the fiscal situation.

The key features of the COVID-19 crisis and the government's fiscal response mean that in the short to medium-term, at least, there will be very limited fiscal space for further capital investments to support green recovery measures. It has also highlighted the importance of social protection and equitable policies to support vulnerable groups most affected by the economic and health effects of the crisis. According to the Global Recovery Observatory, out of the US\$ 1.45 billion spent on recovery measures through to November 2021, a marginal 0.05% was allocated for green recovery measures

(being a project funded by the Green Climate Fund). The bulk of recovery support was made up of a US\$ 1.31 billion road and bridge construction programme.<sup>4</sup>

### 1.3 Contextualising a Green Recovery

The COVID-19 pandemic has presented a unique challenge for the Ghanaian economy to shift its current growth trajectory from carbon resource-intensive development towards an environmentally sustainable and socially inclusive one as part of the economic recovery from the pandemic. This requires the government to incorporate green fiscal policy decisions at both the national and sub-national levels. Defining a green recovery and the role that fiscal policy can play in promoting it are outlined in Text Box 1.

However, although Ghana has signaled its interest and commitment towards a green recovery, the country's environmental footprint has not improved in recent years, and the challenges posed by climate change add to the severity of the issue. Current estimates suggest that the cost of environmental degradation to Ghana is approximately 10.7% of its GDP (World Bank Ghana Environmental Analysis, 2020).

#### **Text Box 1: Defining a Green Economy and the role of Fiscal Policy**

UNEP (2010) defined a green economy (GE) as one that “results in improved human well-being and social equity, while significantly reducing environmental risks and ecological scarcities. A GE is characterized by substantially increased investments in economic sectors that build on and enhance the Earth’s natural capital or reduce ecological scarcities and environmental risks”.<sup>1</sup> Although this definition was developed prior to climate change emerging as a major public policy concern, it encapsulates those actions that are needed to secure a climate-neutral and climate-resilient future.

Fiscal policy is seen to play a critical role in promoting a GE, since the means by which tax revenues are generated and how spending is allocated have a fundamental effect on the structure of incentives facing businesses and households (in both consumption and investment decisions). Although it has proved difficult to demonstrate robustly in an empirical way, fiscal frameworks conducive to promoting a GE are similar to those that underpin equitable and efficient tax and spending systems as a whole, such as broad-based, progressive taxation systems with few exemptions (which can be costly and ineffective), relatively low, uniform rates of consumption taxes, and efficient, equitable public expenditure regimes. An efficient tax system also ideally captures in market prices the hidden costs to society (externalities) of harmful activities, such as environmental pollution, as well as wider benefits of positive activities such as technological innovation.

Fiscal policy measures, particularly environmental taxes, are therefore essential to creating underlying incentives for more sustainable economic activity. Nonetheless, many fiscal reforms to date have been weakened by exemptions and rate reductions, often due to political economy concerns over adverse effects on key industries or vulnerable groups. A successful transition to a GE will therefore likely require a wider package of measures, including information and regulatory policies and compensatory spending, to balance competing government objectives.

<sup>1</sup> UNEP (2010) Green economy. Driving a green economy through public finance and fiscal policy reform. UNEP working paper v.1.0. Nairobi: UNEP

<sup>4</sup> See: <https://recovery.smithschool.ox.ac.uk/tracking/>

## **1.4 The impact of COVID-19 on previous climate-related national targets**

The Ministry of Environment, Science, Technology and Innovation (MESTI) published Ghana's Updated Nationally Determined Contribution (NDC) under the Paris Agreement in September 2021, well over a year following the outbreak of the COVID-19 pandemic in the country. Despite the economic and social upheaval created by the pandemic, the NDC outlines an ambitious strategy of climate-related actions. A total of 47 adaptation and mitigation programmes are identified, an increase of 16 actions over Ghana's first NDC, published in 2015, reflecting the continuing national political commitment to address climate change.

As a non-Annex I<sup>5</sup> party to the UNFCCC, Ghana's NDC adopts the approach of many other such countries by distinguishing between those actions that the country will fund domestically and those where international support is required for implementation. Although it is unclear whether the figures are directly comparable, the 2015 NDC stated that US\$ 6.3 billion would be mobilized domestically, whilst the 2021 NDC records a much lower figure of US\$ 3.9 billion (both for the period 2020-2030). This reduction in estimated domestic resources may in part be an impact of the pandemic, although the updated NDC benefited from more precise cost estimates. Overall, the NDC investment requirement for 2020 - 2030 decreased from an estimated US\$ 22.6 billion in 2015 to US\$ 9.4 - 15.5 billion in 2021. This range in cost estimates demonstrates the need to prepare a detailed investment strategy for the NDC (as acknowledged in a footnote in the 2021 NDC).

The 2015 NDC provided an insight into the expected sources of finance (something that is missing in the 2021 NDC). In 2015, the national budget was expected to contribute 6.2% of total investment needs, with the domestic private sector (between Corporate Social Responsibility and commercial facilities) contributing an additional 21.7%. The remaining balance of 72.1% was envisaged to come from international sources. This breakdown reflects the longstanding lack of fiscal space within the national budget to direct resources to new areas of public expenditure such as climate change. It also reflects a broadly held expectation of the significant role to be played by the international community in general, and the Green Climate Fund (GCF)<sup>6</sup> in particular, in supporting climate action in non-Annex I countries. 22.1% of total investment for the 2015 NDC was expected to come from the GCF. It should be noted, however, that country NDCs are national positions in the UNFCCC negotiations and as such they represent political aspirations. The empirical evidence of GCF and, more broadly, international commitments on climate finance since 2015 suggests that these expected contribution levels will not be realized, placing many of the NDC conditional actions at risk.

The role of government's fiscal policy in supporting both the public and private sectors to undertake climate actions is referenced in the 2021 NDC, through mention of the CARES programme.

## **1.5 The CARES programme**

The Ghana COVID-19 Alleviation and Revitalisation of Enterprises Support Initiative (CARES) programme was launched in November 2020 as a government flagship policy. It aims to stabilize and then transform the economy in the agricultural, manufacturing, and construction sectors, all of which have climate impacts in terms of emitting greenhouse gases and offering opportunities to strengthen climate resilience. The CARES programme aims at stabilizing the economy through the provision of a

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<sup>5</sup> Non-Annex I countries are synonymous with developing countries.

<sup>6</sup> <https://www.greenclimate.fund/>

loan facility to MSMEs, a credit guarantee scheme, an unemployment insurance scheme, and the provision of reduced cost or free utilities during the first phase of the programme (the stabilization phase), targeting social and economic upliftment. During the second (revitalization) phase, between 2022 and 2023, the CARES initiative aims to focus on increasing revenue generation thus accelerating the implementation of the Ghana Beyond Aid Agenda.

The CARES programme during its stabilization phase has sought to strengthen financial security. Ghana's MSMEs have been supported through increased funding under the Coronavirus Alleviation Programme- Business Support Scheme (CAP-BuSS). Additionally, the Bank of Ghana has launched a Guarantee Scheme to provide secure funding to businesses at low interest rates to help retain jobs.

The revitalization phase seeks to come into effect between 2022 and 2023, with financial sustainability as its main agenda. This phase will seek to make progress in sectors like the digital economy, technology, agro-processing, textiles and garments, and the light manufacturing sectors. Fiscal sustainability will be sought by ensuring critical enabling factors for private investments and increased production, jobs, and exports. The CARES programme will also leverage the African Continental Free Trade Area (AfCFTA) (see Text Box 2 below) to establish Ghana as a key financial hub by strengthening the Ghana Investment Promotion Centre and the Ghana Free Zones Authority and establishing an International Financial Services Centre.

**Text Box 2: African Continental Free Trade Area (AfCFTA)**

The African Continental Free Trade Area (AfCFTA) is one of the flagship projects of Agenda 2063, Africa's development framework of the African Union (AU). The initiative aims at accelerating intra-African trade and boosting Africa's trading position in the global market by strengthening Africa's common voice and policy space in global trade negotiations. AfCFTA was signed on 21st March 2019 in Kigali, Rwanda and entered into force on 30th May 2019. Trading under the AfCFTA regime commenced on 1st January 2021.

The objectives of the AfCFTA include:

- Creating a single market for goods, services, facilitated by movement of persons to deepen the economic integration of the African continent.
- Contributing to the movement of capital and natural resources and facilitate investments, building on the initiatives and developments being undertaken by State Parties and Regional Economic Communities.
- Promoting industrial development through diversification and regional value chain development, agricultural development, and food security.

Mene, W. (2020). Statement of H.E. Mr. Wamkele Mene on the Occasion of Swearing-in as the Secretary General of the AfCFTA Secretariat. Available at: <https://au.int/en/speeches/20200319/statement-he-mr-wamkele-mene-occasion-swearing-secretary-general-afcfta>.

However, the costs for CARES are substantial. It is a US\$ 17 billion initiative, amounting to approximately 25% of the 2019 GDP. The Government expects 70% of this funding to come from private sources, yet both foreign direct investment and public private partnership financial resources are constrained because of the pandemic. Such a heavy reliance on private capital for implementation represents a high risk for the programme.

Enhancements and investments in various State-run initiatives through the CARES programme present opportunities for the Ghanaian government to use these interventions for green recovery, if they are

given policy priority. By creating green jobs, efficient manufacturing and production processes, sustainable value chains, and socio-economic upliftment, the Ghanaian government could promote green and just development.

## **2 Retrospective Review**

### **2.1 An update on the Green Economy Fiscal Policy Analysis – Ghana report**

As of 2015, Ghana was on the verge of becoming a significant oil and gas producer. The country had also implemented several green fiscal policy reforms on taxes and electricity tariffs. The 2015 UNEP study focused on the energy and transportation sectors, which are responsible for the largest contributions to both local and global pollution in Ghana, and are considered to provide the best options for generating additional fiscal space for green investment. The core proposal advanced in the 2015 study was to reform the energy policy of Ghana through (i) the effective removal of the system of administered pricing that had created oil production subsidies; and (ii) the reform of energy product taxation based on a correction for the externalities they produce.

The proposed reforms were expected to contribute substantially to the creation of much-needed fiscal space for green economy investments. A tax correcting for global and local damages produced by fossil fuels in the generation of electricity and in transportation was estimated to provide almost one additional percentage point of revenue collection on GDP, representing an increase of about 7% over revenue collection in 2013.

Consideration was given to vehicle taxation in view of its strong complementarity with fuel taxation. One suggestion made in the study was the introduction of a feebate system aimed at stimulating higher fuel efficiency with no cost to taxpayers as a whole, but with a redistribution of the burden between owners of high fuel-efficient vehicles and owners of low fuel-efficient vehicles. However, no evidence has been found of this policy recommendation having been adopted in the last five years.

### **2.2 The removal of the system of administrative fuel prices**

In 2015, the Government of Ghana introduced a deregulation policy with support from the World Bank and the International Monetary Fund (IMF), which aimed at removing restrictions on the petroleum downstream sector (Bediako et al., 2020). This reform included removal of restrictions on the importation of crude oil and petroleum products, unrestricted operations of petroleum facilities, and price liberalisation. Under the removal of administrative fuel pricing, the policy permitted importers and marketers of petroleum products to set their own prices (Bediako et al., 2020).

Prior to this, since 2001, the National Petroleum Authority (NPA) had been responsible for determining the petroleum price using a set formula. However, the administrative-based fuel pricing formula turned out to be problematic due to its asymmetrical calculation of prices. Petroleum prices generated using the formula usually increased in line with rising world fuel prices. However, it rarely decreased when world fuel prices fell (Park, 2015).

The pricing formula was used by the NPA to regulate and monitor fuel prices to ensure government revenue generation, price uniformity, and full cost recovery based on the import parity pricing (IPP) benchmark, including contributions to the Unified Petroleum Price Fund (UPPF) (Acheampong and Ackah, 2015). The bulk distribution companies (BDCs) paid the price based on the IPP benchmark that included the free-on-board (FOB) price, exchange rate, freight charges, taxes and duties, and insurance and losses. The cost price was then determined based on the average of two-week FOB prices and the exchange rate of the Cedi to the US dollar. Ancillary charges such as customs and import duties were added to arrive at the ex-refinery price.

The introduction of the deregulation policy also aimed at removing the subsidies offered on petroleum products (Acheampong and Ackah, 2015; Park, 2015). In 2013 alone the Ghanaian government spent 3.2% of GDP, that is approximately GHc 2.4 billion, on petroleum subsidies (Ministry of Finance, 2021a). Before the deregulation policy, these subsidies continued to rise on a year-on-year basis, increasing the fiscal deficit and threatening the fiscal sustainability of Ghana. Subsidies also encouraged illegal exports of petroleum products from Ghana to low-subsidy neighbouring countries. Removing subsidies through the policy reduced the price differential and dampened the illegal trade that had led to the loss of tax revenue.

The deregulation policy and the removal of administrative pricing aimed to de-politicise the petroleum sector, with the NPA limited to overseeing and regulating the quality of petroleum products (Acheampong and Ackah, 2015, Park, 2015). The major driver of petroleum prices is now market demand and supply. The government no longer releases fuel prices every two weeks and relies on the oil marketing companies (OMCs) and BDCs, albeit using the NPA pricing formula (Yire, 2021). Various taxes and levies also apply, including the Energy Fund Levy, the Price Stabilisation and Recovery Levy, the Energy Sector Recovery Levy, the Sanitation and Pollution Levy, the Road Fund Levy and the Special Petroleum Tax, imposed on consumer fuel products by the government through parliamentary approval (National Petroleum Authority, 2021; Yire, 2021). In summary, the 2021 petrol price per litre breakdown was: Ex-pump - 54%, Taxes - 30% and Margins - 16%.

An objective of the deregulation policy was to end government subsidies on fuels. Another reason for the removal of Government controlled petroleum prices was to attract private investment into the sector through liberalisation and deregulation to develop the sector and its infrastructure in the medium to long term (Bediako et al., 2020). The policy was also expected to increase efficiency and promote competition within the petroleum sector, as companies would be expected to offer lower prices to consumers. However, since 2020 the deregulation policy has been facing unpopularity due to extremely high fuel prices set by the OMCs, despite low global prices of crude products in the immediate aftermath of the pandemic. Fuel prices in Ghana have increased by 161% from 2015 to 2021 (Ghanaian Times, 2022; Modern Ghana, 2015). It is claimed that these high costs are mainly due to the falling exchange rate of the Cedi in comparison to US the dollar and the high taxes and levies imposed (Business, 2021).

### **2.3 Taxes and levies on transport and energy**

The government has introduced several reforms to income tax, indirect taxes, and customs in recent years (Iddrisu et al., 2021). Tax changes to attract investment from the private sector have included the removal of Value Added Tax on financial services and securities gains; import levies on machinery and raw material; and levies on public lighting and electrification schemes. Other VAT reforms have included the introduction of a simplified flat rate scheme for smaller businesses. In 2018, the Government fully implemented the ECOWAS Common External Tariff and reduced import benchmark values applied to tariffs by 50% in 2019, accounting at least partly for the reduction of revenues from trade taxes (see Table 2).

In addition to these recent reforms, some tax reforms have partially addressed the recommendations of the 2015 UNEP report. Ghana still does not have an explicit carbon tax, nor a CO<sub>2</sub> emissions trading system. However, it does collect taxes on emissions-producing petroleum products, including gasoline, diesel, kerosene, LPG, and fuel oil. The Special Petroleum Tax (SPT) was introduced in 2014



at a rate of 17.5%, reduced to 15% in 2017. The excise tax on petroleum products was converted to a specific duty in 2015 and consolidated several levies into one Energy Sector Levies Act, reducing the number of levies from six to four. Petroleum excise duties were abolished in 2018 and the SPT further reduced to 13%. In addition to taxes on fuels, Ghana collects tax on imports of vehicles and fees for vehicle registration. These taxes are discussed further below.

### **Transport fuel tax reform**

Since 2015, the rate of tax levies on gasoline has increased from GHc 0.23 per litre of gasoline and GHc 0.15 per litre of diesel to GHc 1.90 and 1.88 respectively. This represents an increase in the tax burden per litre of fuel from 11% of the retail price in 2015 to 40% in 2020. Table 5 summarises the taxes on transport fuels. Since 2020, fuel prices have increased by around 45%, effectively reducing the tax burden on a litre of fuel to around 27% of the retail price. Public reactions to rising prices have placed the Government under pressure to cut taxes to ease the burden on consumers and, in response, the government suspended the Price Stabilisation and Recovery Levy (PSRL) on petroleum products for two months from November 2021<sup>7</sup>.

**Table 5: Taxes imposed on transport fuels, 2022**

Levy	Legislation (Source)	Gasoline (GHc/Litre)	Diesel (GHc/Litre)	Purpose & Earmarking
<b>Energy Debt Recovery Levy</b>	Energy Sector Levies (Amendment) Act, 2019 (Act 997)	0.49	0.49	To facilitate debt recovery of TEMA oil refinery, downstream petroleum sector foreign exchange under recoveries, and power generation and infrastructure support.
<b>Road Fund Levy</b>	Energy Sector Levies (Amendment) Act, 2019 (Act 997)	0.48	0.48	To finance the Road Fund for road maintenance.
<b>Energy Fund Levy</b>	Energy Sector Levies Act, 2015 (Act 899)	0.01	0.01	Paid to the Energy Commission to support Energy Commission activities.
<b>Price Stabilization and Recovery Levy</b>	Energy Sector Levies (Amendment) Act, 2019 (Act 997)	0.16	0.14	Buffer for under-recovery or subsidies to stabilise petroleum prices for the consumer (paid to Price Stabilisation and Recoveries Account).
<b>Energy Sector Recovery Levy</b>	Energy Sector Levies (Amendment) Act, 2021, (Act 1064)	0.20	0.20	Financing the Energy Sector Recovery Account to support the payment of: capacity charges in the energy sector; and energy sector bills (i.e., fuel utilised by a power plant to generate or produce energy).
<b>Sanitation and Pollution Levy</b>	Energy Sector Levies (Amendment) Act, 2021, (Act 1064)	0.10	0.10	Sanitation and Pollution Account to be used to: improve air quality in urban areas; support for solid and liquid waste treatment and disposal facilities; sanitation facilities; support disinfection, disinfection and fumigation of public spaces, schools, lorry parks, health centres and markets; and support for the maintenance and management of major landfill sites and other waste treatment plants.

<sup>7</sup> For example: <https://www.ghanabusinessnews.com/2021/11/22/fuel-prices-to-hit-ghc27-per-litre-by-end-of-year-ies/>

Levy	Legislation (Source)	Gasoline (GHc/Litre)	Diesel (GHc/Litre)	Purpose & Earmarking
Special Petroleum Tax	Special Petroleum Tax (Amendment) Act, 2018 (Act 965)	0.46	0.46	Tax on petroleum products charged on supplies by oil marketing companies.
<b>Total Taxes (GHc)</b>		<b>1.90</b>	<b>1.88</b>	

### **Electricity generation tax reform**

In addition to adjustments to the transport fuel taxes, the 2015 UNEP report suggested introducing a tax on fuels used for electricity generation (natural gas and fuel oil). Since 2015, the government has introduced taxes on fuel oil (part of the Energy Debt Recovery Levy and Energy Fund Levy) and natural petroleum gas under the Special Petroleum Tax (see Table 6).

**Table 6: Taxes levied on petroleum products for electricity generation**

Levy	Legislation (Source)	Fuel Oil (GHc/Litre)	Natural Petroleum Gas (GHc/Litre)	Purpose & Earmarking
Energy Debt Recovery Levy	Energy Sector Levies (Amendment) Act, 2019 (Act 997)	0.04	-	To facilitate debt recovery of TEMA oil refinery, downstream petroleum sector foreign exchange under recoveries and power generation and infrastructure support.
Energy Fund Levy	Energy Sector Levies (Amendment) Act, 2015 (Act 899)	0.01	-	Paid to Energy Commission to support Energy Commission activities.
Special Petroleum Tax	Special Petroleum Tax (Amendment) Act, 2018 (Act 965)	-	0.35	Tax on petroleum products charged on supplies by Oil Marketing Companies.

### **Vehicle ownership and use reform**

The government of Ghana has not introduced any feebate system on vehicles, but does impose taxes on the import, ownership, and use of vehicles. These taxes include the Vehicle Importation Duty and VAT on vehicles (including the Ghana Education Trust Fund Levy and National Health Insurance Levy). Domestic passenger transport by road, rail, or water is exempt from VAT. The Government also imposes a Vehicle Income Tax, which is collected from commercial transport operators on a quarterly basis. Customs duty on vehicle imports is levied at rates standardised under the ECOWAS Common External Tariff, using the Harmonised System of Classification. The vehicle income tax (VIT) sticker system is a mechanism for collecting tax from owners of commercial vehicles. Where the person is an individual, the payment is set off against annual PIT liability on filing the end-year tax return. The tax is paid in quarterly instalments that depend on the class of vehicle (Iddrisu et al., 2021). Vehicle ownership is also subject to an initial registration fee, as well as driver licensing fees and each owner or driver pays an annual (or 6-monthly in the case of commercial vehicles) road worthiness charge to the Driver Vehicle Licensing Authority (DVLA).

## **2.4 Renewable Energy development**

Much has changed in recent years regarding market conditions for renewable energy technologies. When the Renewable Energy Act (Act 832) was passed in 2011 it aimed to create an enabling

regulatory environment to attract private sector involvement in the development, management, and utilisation of renewable energy in Ghana in an efficient and environmentally sustainable manner. Among the key provisions in the 2011 RE Act was a feed-in-tariff scheme to provide an incentive for renewable energy generators. However, rapid technological development since then has resulted in a steep reduction in the cost of electricity from renewable energy sources. The continuing application of the feed-in-tariff regime has therefore resulted in higher costs to consumers compared to what the market can deliver. Considering these changing conditions, a Renewable Energy (Amendment) Bill was presented to Parliament in 2020 to remove the feed-in-tariff scheme and allow renewables to operate under more open market conditions.<sup>8</sup>

Despite the significant cost reduction in renewable energy technology, the contribution that renewables make to national installed generation capacity is presently less than 1% (see Table 7). There was some growth in renewables (on-grid utility solar) in 2015 and 2018, but from a tiny base. The significant change that has been observed since 2015 has been the strong growth in thermal power, which in 2019 provided 69% of national installed generation capacity and 59% of national electricity generation (Energy Commission of Ghana, 2019).

**Table 7: Installed Electricity Generation Capacity and Grid Electricity Production in 2019**

Type of Generation Plant	Fuel Type	Installed Capacity (MW)**	Production (GWh) for 2019 **
Hydro	Water	1,580 (30%)	7,252 (40%)
Thermal Power Plants	Oil and Gas	3,549 (69%)	10,885 (59%)
Renewables	Solar, Wind	43 (<1%)	52 (<1%)
<b>Total</b>		5,172	18,189

\*\* Percentage share in parentheses

Source: [Energy Commission of Ghana, 2020](#)

Prior to the Renewable Energy Master Plan (REMP) in 2019, government had no clear integrated roadmap for the long-term development and promotion of renewable energy resources. The REMP provides such a roadmap, aiming to achieve an increase in renewable energy in the national energy generation mix from the 2019 level of 43 MW to 1,364 MW (with grid connected systems totalling 1,095 MW) by 2030 (Government of Ghana, 2019). This would represent approximately 10% of total generation capacity. This is an ambitious policy goal, recognising the limited penetration of renewables to-date, and the country's reliance on thermal power generation.<sup>9</sup>

Unfortunately, the Master Plan has suffered on two fronts. First, the challenges brought about by the COVID pandemic in 2020, with reduced global investments in renewables. The second issue is the national moratorium set by the government on additional energy capacity, which has been in place

<sup>8</sup>

<https://www.parliament.gh/news?CO=98#:~:text=The%20Government%20of%20Ghana%20in,to%20purchase%20part%20of%20their>

<sup>9</sup> The role of large hydro in meeting the 10% target appears somewhat ambiguous. Whilst the 2011 Renewables Act excluded large hydro, the Act was subsequently amended to include this category as a renewable source. If large hydro is included in the overall 10% target for renewables, then it is clearly already being met.

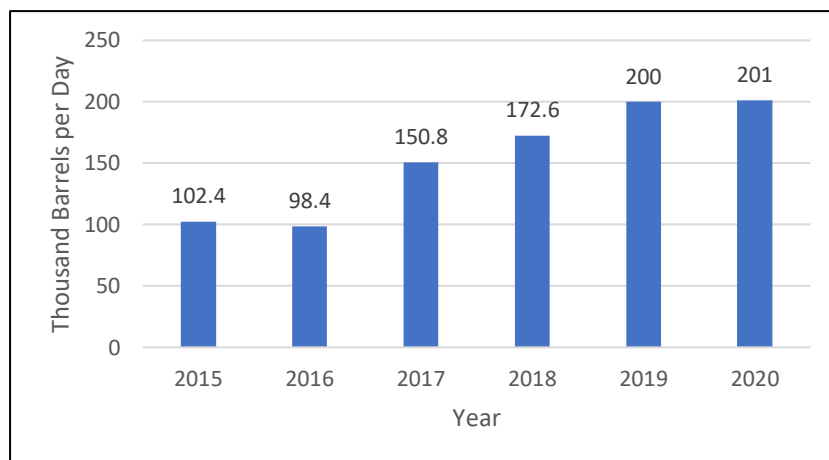
since 2017.<sup>10</sup> The moratorium automatically put a break on the ability to expand RE generation. Hence, targets that were needed to be met were suspended, as even if there had been interest in making new investments there was no opportunity to invest. The moratorium had been put in place because when the economy was struggling contractual obligations with Independent Power Producers (IPPs) meant that every month the government had to pay for idle electricity capacity. This has had a huge impact on Government’s fiscal position due to the debts incurred.

The investment costs associated with REMP are considerable. It is an US\$ 5.6 billion investment master plan, with more than 80% expected to come from the private sector. This translates into annual investments of an estimated US\$ 460 million. REMP is silent on how this level of investment will be secured. Moreover, several constraints on RE development have been identified that have contributed to the slow growth in the RE sector. First, was the issue of cost, as for all new technologies initial costs tend to be high (although this constraint has now largely passed). Second, is the legal and regulatory regime that has yet to ‘catch-up’ with the business opportunities that investment in RE offer. And third, is a continuing limited awareness, particularly of off-grid technologies.

## 2.5 Oil exploration and production

Ghana’s oil production almost doubled from 102,400 barrels per day in 2015 to 201,000 barrels per day in 2020 (see Figure 1 below). Crude oil production performance was relatively steady throughout 2020, despite the COVID-19 pandemic (Energy Commission, 2021).

**Figure 1: Ghana Crude Oil Production, 2015 - 2020**



Source: (Ghana Energy Commission, 2021), (The U.S. Energy Information Agency, 2020)

Within the oil and gas sector, total raw gas production increased in 2020 by 40.3% (Energy Commission, 2021). The gas industry in Ghana has come a long way since 2014 when natural gas production commenced in the country. Given the abundant availability of natural gas, Ghana has prioritised the use of gas from its own gas fields. Gas is the most reliable and cost-friendly fuel option for affordable power in the country. However, a key challenge facing the gas industry is continuity of

<sup>10</sup> <https://www.ghanabusinessnews.com/2021/08/10/ghana-must-lift-ban-on-ppas-for-renewable-energy/#:~:text=Lifting%20the%20ban%20on%20renewable,and%20growth%20post%20COVID%2D19.>

supply from international sources, due to persisting fiscal deficits both on the domestic and international front (Energy Commission, 2020).

In terms of production capacity within the country, total petroleum production has increased by 551% since 2015, when Ghana saw production of about 89 kilotonnes. In 2020, Ghana produced 580 kilotonnes of petroleum products, although this was down from 669 kilotonnes in 2019. The deceleration in production is a combination of factors including the COVID-19 pandemic and financial shortages to procure crude oil for the state-owned Tema Oil Refinery (Energy Commission, 2021).

Oil and gas commodity trading is one the major contributors towards government revenue generation, in addition to gold and cocoa. Global crude oil price fluctuations have been stated as one of the reasons for reduced revenues, contributing to the fiscal deficit in Ghana. In 2020, average Brent crude oil price declined 32% in comparison to 2019. However, the crude oil price is expected to bounce back in 2021 with an average crude oil price per barrel of US\$ 50,<sup>11</sup> and similar market prices are being set for crude oil from Ghana's domestic fields (IMF, 2021).

Total revenue generated from petroleum receipts in 2021 was GH¢ 3,627 million (US\$ 618 million). For the same period in 2020 Ghana generated GH¢ 2,151 million (US\$387 million). Oil revenues contributed 0.8% of GDP in 2020 and 1.2% of GDP in 2021 (Energy Commission, 2021) (Ministry of Finance, 2021b). Basing the calculations on increased production and an increased price of crude oil in 2022, the revenue from petroleum activities is expected to be 1.3% of GDP or GH¢ 6,628 million, representing 23.6% growth in comparison to the outturn in 2021 (Ministry of Finance, 2021b).

Of the total revenue from petroleum product sales, the annual budget-funding amount (ABFA) receives 70% or less of the generated revenue. The remaining 30% of the revenue is marked for two funds: the Ghana Stabilisation Fund (GSF) (21%) and the Ghana Heritage Fund (GHF) (9%). The GSF is used to cushion government expenditure when there is a petroleum revenue shortfall, and an excess of the cap on the fund is provided for debt repayments and contingency funds, whereas the GHF is an endowment for future generations. The extreme situation brought about by COVID saw both funds utilised to support pandemic measures, although the removals from the GHF are now being returned.

The Ghanaian economy has also benefitted from oil exploration and production in terms of increased income generation for petroleum sector workers, job creation, and a boost to local companies.

## **2.6 Fossil fuel subsidies**

In Ghana, energy policies led to heavy subsidization of petroleum products based on administrative fuel pricing combined with subsidies, along with levies and taxes that did not have a defined environmental objective and little to no contributions in terms of revenue (Wesseh and Lin, 2016). This led to a huge burden on public financial resources and high fiscal deficit.

The Ghanaian government ended the subsidies on petroleum products in 2005 and further removed the administrative fuel price setting system in 2015. An assessment of the distributional impact of various reforms and policies on different communities highlighted the unfairness of the subsidies programme on poor communities (Ibrahim, 2022). The government subsequently implemented several social policies targeting vulnerable communities. These policies included a price ceiling on public transportation, the elimination of fees for state-owned schools, increased healthcare delivery

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<sup>11</sup> As of 17 February 2022, the Brent crude oil price was in the region of US\$ 90 per barrel

systems, an increment in the daily minimum wage from US\$ 1.24 to US\$ 1.50, and cross-subsidization of LPG and kerosene (Wesseh and Lin, 2016).

Levies introduced in 2015 under the Energy Sector Levies Act (ESLA) 2015 (Act 899) after the removal of administrative pricing were geared toward environmental objectives and social benefits. The funds raised were earmarked for several actions, including power generation, the clearance of legacy debts in the energy sector, support for road maintenance, and funding provided for the regulation, management, development, and utilisation of sustainable energy resources under the Energy Commission. As for the Price Stabilisation and Recovery Levy (PSRL), this was established to stabilise the petroleum prices, buffer for under-recoveries in the petroleum sector, and subsidise premix petroleum products and residual fuel oil (RFO) (Ministry of Finance, 2021).

The total collection under the ESLA in 2020 was GH¢ 4.6 billion (see Table 8). Out of the total ESLA, PSRL contributed GH¢ 484.3 million (Ministry of Finance, 2021). GH¢288.43 million was utilised on Premix Subsidy, Residual Fuel Oil Subsidy, and related expenditure from the PSRL in 2020 in comparison to GH¢ 233.8 million in 2019 (Ministry of Finance, 2019). However, the PSRL was removed in early 2020 from the price build-up to insulate consumers from rising fuel prices and the high cost of fuel at pump stations. This resulted in a significant drop in revenues, thus leading to it being subsequently reinstated in the fuel price (Ministry of Finance, 2021).

**Table 8: Energy Sector Levies in 2020 (GH¢ million)**

Levy Type	Projected	Actual
Energy Debt Recovery Levy	1,874.49	2,040.27
Price Stabilisation and Recovery Levy	558.78	484.31
Public Lighting Levy	181.90	133.87
National Electrification Scheme Levy	121.12	90.27
Road Fund Levy	1,659.52	1,779.93
Energy Fund Levy	41.49	38.38
Total ESLA	4,437.31	4,567.03

Source: Ministry of Finance, 2021

Despite the progress on fossil fuel subsidy reform, and the introduction of energy sector levies, it is important to note that subsidies to fossil fuels continue.

### 3 The Way Ahead

Since early 2020, the government's various fiscal discipline plans have been derailed due to the pandemic. The 2020 budget had to be revised during a mid-year review, with a shift in focus towards relief measures and recovery. The 2021 budget aimed at introducing new revenue measures yielding 1.4% of GDP, including VAT and National Health Insurance Scheme (NHIS) rate increases, as well as higher fuel excise tax. The 2021 budget also sought to reduce COVID-related spending by 1.3% of GDP in comparison to 2020 (IMF, 2021). However, despite these new measures, a budget deficit of 13.9% of GDP was expected in 2021.

The 2021 medium-term plan aims to rely on spending cuts to bring the fiscal balance in to surplus by the start of 2024 (IMF, 2021). The plan includes capping spending on civil service salaries through reducing the number of recruitments, reduced capital expenditures, and grants and fiscal consolidation. Recurrent and capital payments remain the dominant categories under Ghana's budget expenditure, making up almost 70-80% of the expenditure costs.

The highest levels of subsidies have been to petroleum products and electricity consumption. In 2020, petroleum subsidies amounted to GHc 229.3 million, increasing to GHc 247.7 million in 2021 (equalling 0.1% of the GDP). Electricity subsidies of GHc 150.1 million were provided to vulnerable communities under the COVID-related spending (ISSER, 2021) (Ministry of Finance, 2020), although the COVID-19 Health Recovery Act (Act 1068) that was passed in March 2021 aims to allow government to recoup these expenditures.

It is in this context that any consideration of fiscal support for climate compatible development has to be framed. There is effectively no fiscal space within the budget that would support new public expenditure on climate action. The private sector has also experienced very difficult operating conditions over the past two years. Government support for a green recovery will therefore require careful targeting to maximise the limited opportunities available, at least in the short-term. Yet, change in the growth trajectory of the country, as recognised by the 2021 NDC, is necessary. To begin, fiscal policy needs to turn attention to how it might support the move away from the existing dependency on fossil-fuel power generation.

#### 3.1 The prospects for Renewable Energy subsidies and tax incentives

An impact of the pandemic has been a slowdown in the uptake of renewable energy (RE) technologies in the country. As the pandemic took hold in early 2020, the Energy Commission was not able to push the agenda to increase penetration of RE technology, as business incomes and revenues were affected by the economic downturn. Private enterprise interest waned in investing in RE technology, reflected in a reduced level of license applications. However, since mid-2021 there have been some tentative signs of renewed interest in the renewables sector, with additional capacity coming on stream, mainly through off-grid investments.

##### ***The Renewable Energy Fund***

The Renewable Energy Fund (REF) was established in 2011 under the Renewable Energy Act to support renewable integration into the electricity production mix (Kuamoah, 2020; Ali, Anufriev and Amfo, 2021). The REF subsidises the capital and technological cost of renewable energy projects in Ghana, as well as providing financial resources for innovation and infrastructure. Funding for the REF comes

from a variety of sources, including the premium payable under the Renewable Energy Act, 2011 (Act 832), funds approved by the parliament and Ministry of Finance, and the Energy Fund levy on petroleum products. The Fund also receives a contribution from the ancillary service charge on per kWh of electricity transmitted. Through the REF, the government can provide support to attract investors in renewable energy projects. However, the REF is operating at low capacity due to limited funding (Aboagye et al., 2021). The Energy Fund Levy applied on petroleum products has been the main source of funding for the REF, but currently it is not receiving sufficient funds mostly due to reduced petroleum consumption brought about by the restrictions on movement in the country (Ministry of Finance, 2020a). The prospects of the REF providing significant additional resources in the near-term to support RE investments therefore appear limited.

### ***Prospects for Further Tax Incentives for Renewables***

The possible application of tax incentives to renewable energy is mostly focused on the expansion of Solar, including the use of, and investment in, solar energy generation (on and off-grid) and to boost local production of renewable energy (e.g., assembly of solar PV units). For example, the Energy Commission has recently advised the Finance Ministry on an import waiver to support local assembly to compete with imports. The Renewable Energy Master Plan 2019 outlines proposals for accelerating local production to supply the local market and for export, including an incentive structure to support plans for locally assembled panels to be competitive in the local and international markets.

Currently, there are concerns of a price differential between imported solar PV and locally assembled products, partly due to taxes and duties imposed on materials, so there may be a case for providing some relief on materials used in local assembly. There is limited scope for further tax incentives to reduce the cost of finished Solar PV panels, since they are already zero-rated for import duty and VAT on imports, according to the GRA.<sup>12</sup> Any further reduction in cost would likely require direct subsidy or tax credit.<sup>13</sup>

While in some countries the lifetime return on Solar may be positive, in terms of cost savings on alternative fossil-fuel-based electricity services, the up-front cost is a problem for many households, particularly in Africa. Some countries have tackled this using community-level mini grid Pay-As-You-Go schemes (e.g., IRENA, 2020). Policy instruments that support investment in mini grids may therefore also help address this barrier (see Text Box 3 below).

For the case of local assembly of PV panels, machinery and parts used in manufacturing are already exempt from VAT, but final products sold would likely be subject to VAT, since there is no explicit exemption or special rate for such items. For businesses purchasing locally assembled panels, this creates a price distortion compared to imported panels, which are VAT-free. This is particularly

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<sup>12</sup> [https://gra.gov.gh/customs/hs\\_code/](https://gra.gov.gh/customs/hs_code/)

<sup>13</sup> For example, a scheme in Salvador offers a discount against local land tax for households generating 90% of energy from solar: <https://www.c40.org/case-studies/tax-incentives-for-solar-panel-usage-introduced-in-salvador/>.



problematic for mini-grid operators, as the supply of electricity to dwellings is also exempted in the VAT Act and they would be unable to reclaim the VAT paid on purchase of solar cells.

**Text Box 3: Renewables: the role of off-grid RE supply**

Presently, there are eight off-grid communities under the universal electrification programme that receive electricity generated through using solar panels. This has been a public-sector led programme, with Government partnering with development partners and donors.

15% of Ghanaians do not have access to modern forms of electricity. Equity demands every citizen should benefit from national development and this is what drives the Energy Commission to remain involved in such projects and activities. The national aim is to cover the remaining 15% of the population presently without modern electricity in the foreseeable future. However, providing on-grid electrical supply to lakeside or ‘overseas’ communities is not economically feasible due to their island locations. Off-grid solutions are also expensive, especially when delivered through a public-sector led venture. Therefore, there is need to have additional modalities in place where the private sector will be attracted to such projects, and hence the total project cost will not fall on the public sector.

To attract private finance in off-grid solutions requires serious stakeholder consultation. Such events as the annual RE fair organised by the Energy Commission are important for raising awareness. This fair has been helpful in steering discussion and bringing proposals to the table by the private sector on the best ways to take forward investment in RE. One such proposal is the Plug and Play concept. Under this initiative, Government assists by building the infrastructural network, with private enterprises then providing the electrical generation equipment. Hence, in terms of the subsequent private sector tariff calculation, the infrastructure network is not be included in the costs, making it economically feasible for the project to go ahead, as well as being affordable to the intended consumers.

There may therefore be a case for reviewing the tax impact on the local assembly and use of local solar PV by businesses and mini-grid operators to remove distortions relative to imports and ensure an efficient operation of the VAT system along the supply chain. In Kenya, the government re-introduced a VAT exemption on renewable energy generation equipment including solar and wind, after finding that the national benefits of reinstating the exemption far exceeded any tax revenues foregone by a factor of 7 to 1 or more, particularly through its impact on employment and education outcomes from the electrification of rural communities.<sup>14</sup>

An alternative (or additional) instrument available to support local assembly and mini-grid investment might be through income tax incentives. Income tax holidays are generally not recommended due to their inefficiency (since this is a tax on profit, any new enterprise that is initially loss-making would not be liable for income tax). However, additional allowances or accelerated depreciation for capital equipment can sometimes be a useful and efficient incentive for investment (James, 2014). Alternatively, if businesses can locate in designated Special Economic Zones, the Government provides general tax relief, including income tax holidays for 10 years (and a reduced rate thereafter) as well as 100% exemption from payment of direct and indirect duties and levies on all imports for production and exports from free zones. India, for example, provides an accelerated rate of depreciation for renewable energy generation equipment, which can be offset against income tax liability in the early

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<sup>14</sup> Africa Clean Energy Technical Assistance Facility (2021)

start-up phase. Various tax incentives are also offered in the Philippines, including accelerated depreciation, VAT zero-rated input and output and import duty waivers (KPMG, 2015).

### **3.2 The prospects for Electric Vehicle subsidies and tax incentives**

The potential role of tax incentives in the transport sector, apart from supporting the expansion of public transport through, for example, VAT and import duty exemptions for passenger transport and vehicles, is to incentivise the increased uptake of Electric Vehicles (EVs). The 2019 budget called for an import duty waiver to support the Drive Electric Initiative to increase uptake of electric vehicles through increased affordability. The Government also plans to promote local assembly of EVs that may require fiscal incentives. Similarly, in the case of the government's ambition to expand local EV assembly, the same issues described above apply, as well as the option for tax relief under free zones. For imports of parts for assembly, knocked down vehicles for assembly are currently subject to import duty at 5% plus VAT. For consumer purchase of EVs, the current tariff code imposes import duty of between 5% and 20% on imported electric and hybrid vehicles, plus VAT at 13%.

However, the scope for adjusting import tariffs may be limited following the full implementation of the ECOWAS Common External Tariff (CET), which sets rates on all items imported into the ECOWAS region. During the initial transition phase of CET implementation, member countries can designate special protection measures, such as the Import Adjustment Tax (IAT), to adjust tariffs on a limited number of individual items for a period of five years. Since Ghana fully implemented the CET in 2018, this option is likely now closed and further adjustments would be subject to negotiation with ECOWAS. Nonetheless, the ECOWAS Renewable Energy Policy (ECOWAS, 2013), provides for 20% of all renewable energy technology equipment installed to be manufactured within the region by 2030. This may therefore provide an opportunity for the introduction of further region-wide measures to support the development of the sector.

Overall, there may be a case for targeted tax incentives for EVs, combined with complementary policies, such as the regulatory reforms needed to invest in renewables and infrastructure investment for EV charging. However, given their likely cost and Ghana's limited fiscal space, any new tax incentives should follow a review of existing ones, with a view to replacing ineffective incentives with more productive ones. There may be scope, for example, for reform of VAT and import duty on locally manufactured EVs, and/or import duty relief on (finished) EVs. For these incentives to be effective it will be important to mitigate the risks of abuse, including ensuring adequate targeting in the design and legislation, effective and transparent monitoring and evaluation, and use of relevant conditions to ensure the desired outcomes are achieved.

### **3.3 The prospects for Carbon Taxes**

In the recovery phase from the COVID-19 pandemic, especially in the context of Ghana's expanded fiscal deficit, there is a need for fiscal consolidation, including domestic revenue mobilisation measures. Any revenue raising measures will need to be targeted carefully in the short to medium-term to ensure that they do not dampen demand in the economy during the recovery. Targeted measures, such as environmental taxes have been discussed internationally in this context as offering

potential to achieve the double objective of both raising potentially significant revenue as well as addressing environmental externalities needed to support a green recovery.<sup>15</sup>

Emissions taxes, or taxes on fuels are typically imposed per unit of emissions, at a level estimated to reflect the ‘external’ costs, such as the social cost of carbon emissions, or estimates of health and environmental impacts of local pollution, traffic accidents or congestion. Carbon pricing is a broader form of emissions tax, which captures the full external and internal price of carbon emissions at all levels of the supply chain from production to consumption and can be achieved through a carbon tax or Emissions Trading System.

As discussed in Section 2, Ghana has not made any commitment to introduce a carbon tax but has made progress towards this aim by removing the administrative pricing of fuels and increasing duties on transport and energy generating fuels. The 2015 UNEP report recommended adjusting fuel duties towards an efficient tax rate that would capture both global and local emissions and environmental damages. Since then, the estimated damages and efficient tax rates for transport fuels have been updated for Ghana, as summarised in Table 9 below (Parry et al., 2021).

**Table 9: Comparison of Estimates of Damages and Efficient Tax with Current Tax (US\$ per litre)**

	Estimate of Damages (Sep 2021)			Actual vs Efficient Tax	
	Global (carbon)	Local air pollution	Vehicle externalities	Efficient Tax	Actual Tax
Gasoline	0.16	0.03	0.18	0.37	0.33
Diesel	0.18	0.17	0.11	0.46	0.33

Source: Author’s elaboration on data from Parry et al. 2021

Comparing the estimated efficient tax with the current rates of taxes on transport fuels indicates that the current tax burden on gasoline is already close to the efficient rate. There is a wider gap in diesel taxes, although the present tax level still represents a significant increase in tax burden compared to 2015 (as discussed in Section 2.4). By updating the methodology used in the 2015 UNEP report, using the above tax rate adjustment for diesel, we estimate (see Table 10) that adjusting the tax rate on diesel could generate additional revenues of GHc 1,394 million (US\$243.3 million), which represents an almost 40 percent increase compared to existing revenue collection. With a low (assumed) price elasticity of demand, consumption of diesel will likely diminish by a small amount (approximately 1.4 percent) over the short-term and approximately 6.5 percent over the longer-term.<sup>16</sup>

While this may sound a positive reform to consider in principle, there would be winners and losers from such a policy. Figure 2 represents the share of household expenditure on transport fuels across different income quintiles and shows that transport fuel consumption is higher among the upper quintiles, suggesting that such a reform would be progressive. Nonetheless, there would be negative impacts on lower income households as well, which might need support through some form of compensating transfer.

<sup>15</sup> For example, de Mooij et al., 2020, cite estimates of a carbon tax of \$75 per ton—necessary to meet the Paris Agreement climate objectives—expected to generate between 1 and 2 percent of GDP in some countries over the medium term.

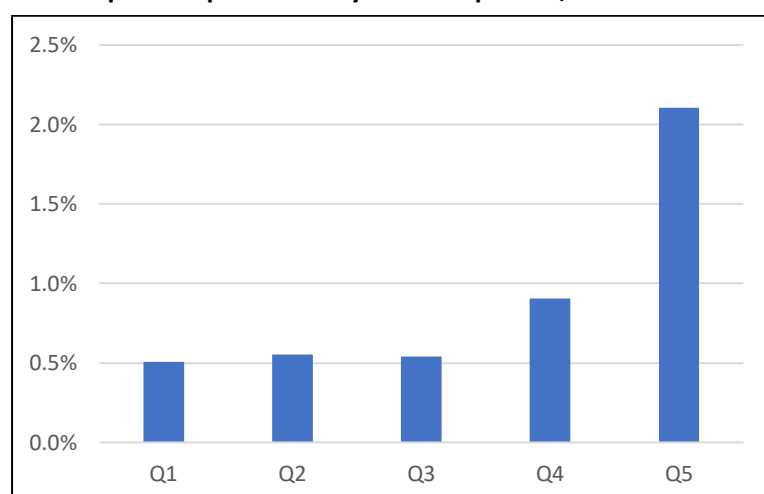
<sup>16</sup> Depending on the elasticity assumptions used.

**Table 10: Simulation of Change in Fuel Levies on Diesel to Adjust for Global and Local Environmental Externalities**

	Diesel
Current taxes and levies (GHc/litre), 2021	1.88
Price (GHc/litre), Feb 7, 2022	6.94
Adjustment for global and local damages (GHc/litre)	2.63
New price (GHc/litre)	7.69
% Change in price	10.8%
Short-term elasticity*	0.13
Consumption (2020, Litres)	1,953,531,956
Consumption adjusted for tax change	1,926,048,478
Short-term % change in consumption and damages	-1.4%
Long-term elasticity**	0.6
Long-term % change in consumption and damages	-6.5%
Estimated tax collections before tax reform (Ghc)	3,672,640,077
Estimated tax collections after tax reform (Ghc)	5,067,316,205
Additional collections (GHc)	1,394,676,127
GDP, 2021 (GHc million)	439,381
Additional collections (% GDP)	0.32%
% Change in tax collections	38%

Source: \*Dahl (2012); \*\*Based on Labandeira et al. (2016); Based on analysis in UNEP (2015) and updated with Parry et al. (2021); Globalpetrolprices.com; Energy Sector Levies Act 2015; Energy Sector Levies (Amendment) Act, 2021, (Act 1064); Energy Commission (2021b); Budget Statement 2022.

**Figure 2: Shares of transport expenditure in total household consumption expenditure by income quintile, 2017**



Note: Households are ranked by equivalised consumption, used as a proxy welfare measure in Ghana, since income is not captured well in GLSS7

Source: Ghana Living Standard Survey (GLSS7), 2017

The 2015 UNEP report also proposed an adjusted rate of tax on fuels used for electricity generation (natural gas and fuel oil). Applying the same approach as for the analysis for transport fuels, we estimate that the current rate of tax on natural gas (GHc 0.35/Kwh) is above the estimated tax rate adjusted for global and local emissions (approximately GHc 0.08/Kwh). For fuel oil, the current rate (GHc 0.05/Kwh) is below the adjusted rate (GHc 0.66/Kwh) and could, in principle, be raised further. Adjusting the tax rate on fuel oil could raise in the region of GHc 290 million (US\$50 million) per year, reducing consumption by about 12 percent in the short term. According to statistics from the GLSS 2017, such a measure would also be progressive, since higher income households consume relatively more electricity: 4% of household expenditure in the top expenditure decile compared to 2.5% in the bottom decile (Advani et al. 2021). However, the distribution is less unequal than that of transport fuel consumption presented above.

Two other studies have modelled the potential impact of carbon taxes in Ghana. Advani et al (2021) estimated the tax base of a carbon tax (measured by the carbon dioxide equivalent (CO<sub>2</sub>e) embedded in fossil fuels in 2018) to be almost 14.7 million tonnes, equivalent to revenue potential of close to 0.7% of GDP. The World Bank (2021) estimated the effect of a 'moderate carbon charge' (US\$25 per tCO<sub>2</sub> in 2021, rising to US\$50 by 2030) would reduce Ghana's emissions by approximately 4% by 2030 and raise about US\$0.6 billion in additional revenues. Nonetheless, the impact of such energy price increases appears particularly severe: gas prices would rise by 60%, oil by 24%, diesel by 9%, petrol by 7%, and LPG and Kerosene by 6%.

To date, among sub-Saharan African countries, a carbon tax has only been implemented in South Africa. Such a tax carries important risks: the capacity to deliver an effective compensating transfer to protect those on lower incomes who may be affected; higher costs of energy, at least during the transition to low-carbon technology, which may limit economic growth potential more broadly; and increasing fuel costs may prompt some households to shift consumption towards locally sourced (and largely untaxed) fuel sources, such as firewood and charcoal, which would undermine the potential environmental benefits of a carbon tax (Advani et al. 2021). For these reasons, among others, taxes on fuels are often extremely unpopular and raise significant political risks. As discussed in Section 2.2, the deregulation of fuel prices has prompted a surge in fuel prices, leading to calls for cuts in taxes to protect consumers from further cost increases. Therefore, any further increase in tax does not appear politically viable in the short term. Over the medium-term, if the retail price stabilises there may be opportunities to consider reforms, but this is likely to require considerable investment in public communications, private sector consultation, and credible compensating mechanisms to make them acceptable.

Overall, while in principle there is a good case to be made for carbon taxes in Ghana, particularly for diesel, both in terms of revenue generation and curbing emissions, yet with recent reforms to fuel taxes and the political tension that has created due to rising fuel prices, the scope and appetite for further reform of fuel taxes (or a wider carbon tax) does not appear to exist. There may be a role for consolidating existing levies under a broader carbon tax framework in future, as a means to support the transition to low-carbon electricity generation and use of renewables as the sector develops. The effective implementation of such a reform will likely depend, however, on building public support and setting out a clear positive strategy for revenues including mitigating equity and economic impacts.

### 3.4 The prospects for 'Feebates'

Whilst introducing new taxes may be politically unpopular, especially during the COVID-19 recovery phase, there may be a role for options that can be designed to be revenue neutral and incentivise consumer or producer choices to switch to more sustainable products or production methods. 'Feebates' are one such option. The principal features of a feebate are fees or taxes imposed on the supply of goods or services, ideally at a rate commensurate with the carbon intensity of production or consumption, with a rebate or subsidy provided for the low-carbon activity or goods, usually based on evidence of an approved (or certified) standard.

Examples from international experience include the French feebate system for vehicle manufacturers who receive a subsidy for producing vehicles with low emissions financed by cars with emissions above the threshold<sup>17</sup>; and the introduction in Switzerland of a default rate of tariffs on imported palm oil with a reduced rate granted when the palm oil is certified deforestation-free.

Recent studies have proposed feebate options for Ghana. For example, the 2015 UNEP study proposed a feebate scheme for imported vehicles that would not require any adjustment to tariff rates. Rather, the reform would superimpose a system of fees and rebates offered according to CO<sub>2</sub> emissions. The scheme could be designed such that the 'pivot point' (the standard on a continuous scale at which the fee turns into a rebate) would be set to ensure that the scheme is revenue neutral and could be adjusted as technology changes over time. Revenue neutrality would still mean there would be winners and losers, but it would involve a redistribution from owners of low fuel-efficient vehicles to high fuel-efficient ones.

Currently, imported vehicles are subject to Import Duty at a rate of 5%, 10% or 20% depending on engine size and passenger capacity, with special 0% or 5% rates for vehicles used for specialised purposes e.g., agricultural tractors. Most vehicles are also subject to VAT and several levies.<sup>18</sup> However, none of these taxes reflect the level of carbon emissions or wider environmental externalities of vehicle use. While in the case of Mauritius (see Text Box 4 below), there was already an excise duty regime levied on vehicles, which could be adapted for the purpose of offering rebates, Ghana does not impose excise duty on vehicles. Nonetheless, they could be added to the schedule of excisable items or to introduce a special environmental levy that could provide for a default rate and a reduced or 0% rate depending on the level of emissions.

Lessons can be drawn from other country experiences. Uganda, for example, imposes an 'Environmental Levy' of 20% on imported vehicles that are 8 or more years old. This is a very simple scheme to implement and was successful in reducing imports of the target group. But as a rather blunt instrument, in terms of its overall incentive effect on consumer choices between low and high-emitting vehicles, it was also found to have unintended substitution effects towards much older vehicles (16+ years) due to price and local preferences (Forster and Nakyambadde, 2021). This suggests a need for a more continuous (progressive) set of rates based on emissions, or an outright ban for much older vehicles. The experience of Mauritius suggests that an emissions-based feebate system is feasible, although there are likely to be challenges in ensuring that it is revenue neutral and in the accurate and consistent measurement of the emissions standards applied (Granger et al., 2021).

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<sup>17</sup> See for example, Yang (2018) for a review of the French Feebate system

<sup>18</sup> GETFund, AU Levy, ECOWAS Levy, EXIM levy, and Special Import Levy

#### **Text Box 4: The experience of Mauritius' Feebate Vehicle Tax Scheme**

Mauritius was the first middle income country to introduce a 'feebate' system based on the emissions ratings of imported and first registration motor vehicles. Introduced in 2011, the tax was intended to incentivise the use of energy-efficient vehicles. Initially, a threshold ('pivot point') of 158g/km was introduced, above which importers would pay an excise duty commensurate with the efficiency level of the vehicle, and below which an emissions rebate was granted against the standard excise duty paid.

The system was effective in increasing the use of higher efficiency vehicles and increased the number of hybrid cars imported to Mauritius from 43 in 2009 to 1,829 in 2014 (Ally, 2016). The average fuel efficiency of the vehicle fleet in the country improved from 7 litres per 100km (which corresponds to CO2 emission of 186g/km) in 2005 to an average of 6.6 litres per 100km (a reduction in CO2 emission of 169g/km) in 2013.

The feebate was initially designed to be revenue-neutral, but due to the increase in consumption of higher efficiency vehicles, the feebate had a net cost to Government. The emissions threshold for the rebate was therefore lowered to 150g/km. By 2016, further adjustments were necessary, and the rebate was estimated to have exceeded the levy on a cumulative basis by more than US\$28 million (Ally, 2016).

There were also operational challenges related to the measurement of emissions levels of imported vehicles, particularly for used vehicles imported from outside EU, where the UNECE certification standard was not implemented. As a response to this challenge, the government adjusted the rates of rebate to introduce a second tier (lower) rate for non-conforming emissions certificates (see Table below). In 2019, to incentivise further the take up of efficient vehicles, a mandatory requirement for a fuel consumption and carbon dioxide emission label in all vehicles was introduced as well as a country-wide information awareness campaign.

#### **Mauritius Vehicle Emissions Import Excise Feebate Schedule, effective November 2013**

<b>CO2 Emission Range (g/km)</b>	<b>Fee/Rebate Rate (Rs)</b>	<b>Fee/Rebate Rate (US\$)</b>
>290	5000	142
226-290	4000	114
191-225	3000	85
151-190	2000	57
91-150	<i>Conforming to UNECE Regulation 101:</i> -1000 <i>Non-conforming:</i> -350	<i>Conforming to UNECE Regulation 101:</i> -28 <i>Non-conforming:</i> -10
<91	<i>Conforming to UNECE Regulation 101:</i> -3000 <i>Non-conforming:</i> -1000	<i>Conforming to UNECE Regulation 101:</i> -85 <i>Non-conforming:</i> -28

Source: Ally (2016)

Another example, proposed by the World Bank (World Bank, 2021), would be a feebate scheme for sustainable (low carbon) cocoa farming practices.<sup>19</sup> Crop production and deforestation contribute a significant share of Ghana's greenhouse gas emissions. A cocoa feebate would mean placing a tax per tonne of cocoa unless (or until) a producer could produce certification to prove that it was deforestation-free. This is argued to disincentivise deforestation and promote practices that protect vulnerable ecosystems and have wider benefits for the nutrient content of the soil. Since sustainable

<sup>19</sup> For example, more long-term productive and sustainable agro-forestry, rather than the short-term, cheaper but more destructive 'slash and burn' practices.

producers would be able to compete more on price, the cheaper, greener cocoa would also create demand for certified deforestation-free cocoa.

Underpinning this feebate scheme would need to be an effective, independent certification process, either through existing third-party standards agencies or a new government certification scheme. If the tax were to be applied while the certification scheme was still being rolled out, Ghana's cocoa exports could become less competitive, in addition to the likely added cost burden to producers of transitioning to more sustainable, but likely more expensive production practices. As well as requiring capacity in the sector to undertake third party assessments, the certification scheme would need to be enforced effectively and efficiently, including sufficient levels of take-up. Experience from other countries suggest that this comes with considerable risks. For example, Indonesia's Sustainable Palm Oil Certification Scheme has experienced implementation challenges since introduction. All plantations were expected to be certified by 2014, but in 2021, uptake was still just 38%. Furthermore, the effectiveness of the scheme depends on appropriate enforcement and application of the national laws and regulations, which have been found to have serious weaknesses. For example, Indonesia's Audit Board found that 81 per cent of palm oil plantations have illegalities in 2019.<sup>20</sup>

Nonetheless, Ghana already has experience of delivering third party standards certification of cocoa through, for example, the Rainforest Alliance UTZ and Fairtrade standards. It may be possible to review these processes to incorporate sustainability certification for the purpose of a feebate scheme (World Bank, 2021). Furthermore, Ghana's key export markets, such as the EU<sup>21</sup>, are expected to introduce stricter regulatory measures to curb the import of deforestation-linked products. It may therefore benefit Ghana's exports to get ahead of the curve by incentivising the sector to begin the transition to meet such requirements through a domestic feebate scheme.

Overall, feebate systems should be possible to introduce in Ghana and could have a potentially significant impact on greenhouse gas emissions. Further consultation would be needed with both the cocoa and transport sectors to assess the feasibility and potential of these measures. Careful attention to the design (e.g., revenue neutrality) and implementation (effective and accurate independent certification) will also be important for success.

### **3.5 The prospects for Green Bond issuance**

Ghana's national budget has had to grapple with debt sustainability issues for many years, as previously described. The national tax base is much smaller than in many middle-income countries. This places a severe limit on public investment programmes, including those that promote a green economy. With the progression of the 'Ghana Beyond Aid' agenda, and with it the decline in official development assistance, greater emphasis is being directed at debt instruments as a source of revenue to balance the budget. In particular, the country has recent experience in raising finance from the international capital market through several sovereign bond issuances. The Government's objective has been to borrow at least cost and minimum prudent level of risk.

Sovereign bonds are traditional fixed income instruments that allow governments to finance specific investment themes such as health, education, and more recently, climate change. It is a global market

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<sup>20</sup> Reported by the Environmental Investigation Agency (2021): <https://eia-international.org/news/indonesia-must-act-to-protect-forests-and-root-out-corruption-and-illegality-from-its-palm-oil-sector/>

<sup>21</sup> [https://ec.europa.eu/environment/publications/proposal-regulation-deforestation-free-products\\_en](https://ec.europa.eu/environment/publications/proposal-regulation-deforestation-free-products_en)



that is currently showing significant growth, with over US\$ 700 billion in global sustainable debt issued in 2020, with much of it in the Green Bond market segment. This is despite the disruption brought about by the COVID-19 pandemic. Strong investor demand is driven by macroeconomic and market dynamics that are favouring bond issuance.

In October 2015, the Ghana Government issued its fourth sovereign bond, which was over-subscribed by US\$ one billion. The 15-year tenor of the bond was the first by any Sub-Saharan African country besides South Africa (Ministry of Finance, 2015). More recently, in March 2021, government issued a 4-tranche Eurobond valued at US\$ 3 billion, with half of the proceeds to be used to fund domestic and external liability management operations. The remaining proceeds were used to support the implementation of the 2021 Budget. The success of this Eurobond transaction reflects Ghana's ability to raise multi-billion dollar financing. This transaction marked the first and largest sub-Saharan African sovereign US\$ bond issuance since the onset of the COVID-19 pandemic (Ministry of Finance, 2021e).

It is in this broader context that interest in the potential of Green Bonds has come about, where spending of bond proceeds is limited to identified actions that comply with climate compatible objectives. Country experiences with Green Bonds is a recent phenomenon. Indonesia was an early mover, issuing its first Green Bond in 2018 (see Text Box 5 below).

#### **Text Box 5: The experience of Indonesia's Green Bond**

An early mover in the sovereign Green Bond market is Indonesia. Indonesia issued its first Green Bond in March 2018, with US\$2.75 billion raised on global capital markets to advance climate action in the country. Following the success of its first issuance, the Government issued another Green Bond in February 2019 for US\$750 million. During the COVID-19 pandemic, the government continued with its bond programme, issuing its third sovereign Green Bond in June 2020. Prior to this third global issuance, it also issued the world's first retail Green Bond in November 2019 for domestic investors. This was followed by a second in November 2020, broadening the investor base as well as tapping into the growing demand for green and sustainable investment within the country. This succession of these bond issuances demonstrates the resilience of this instrument during the early stages of the pandemic.

Indonesia's Green Bond is consistent with the Green Bond Principles.<sup>1</sup> These are international voluntary process guidelines that recommend transparency and disclosure, and promote integrity in the development of the Green Bond market. In accordance with the Green Bond Principles, it is mandatory for any Green Bond issuer to publish annual impact reports, disclosing the use and management of proceeds on its financed projects. Indonesia first annual Green Bond impact report was published in January 2019, with subsequent reports for 2020 and 2021; these were not interrupted by the pandemic. The three reports provide investors with assurance that the proceeds have been allocated to projects consistent with the Green Bond Framework (and documents the specific exclusion of any project finance going to new fossil-fuel, large hydro, or nuclear power generation).

Indonesia's experience in working in Green Bond issuance is now being extended to the broader framing of SDG bonds. A challenge in moving away from the focus on climate action to all SDGs lies in retaining credibility over the proceeds of sale. Investor credibility has been safeguarded in the Green Bond issuance by publishing the climate-related projects supported; however, with sustainability-linked bonds issuers do not face the same restrictions on how proceeds are used, rather the issuer agrees to environmental, social and governance targets. Consequently, the potential for 'greenwashing' is much higher.

<sup>1</sup> [Green Bond Principles \(icmagroup.org\)](https://www.icmagroup.org/green-bonds/)

The rationale for government's engagement in Green Bond issuance is that it reflects a long-held understanding that private capital must be deployed as part of countries' response to climate change. Concessional public finance is insufficient to fund the action needed. Access to finance at a much larger scale is made possible using this market mechanism, albeit on non-concessional terms. This new source of finance also allows the government to move away from funding individual projects to adopt a more programmatic approach that can help finance national strategies and action plans through the budget.

The process of Green Bond issuance involves several general stages. First, a Green Bond Framework is needed to establish the parameters for future issuances and the management of the bond proceeds. Second, relevant climate-related projects need to be identified. And third, allocation and impact reports must be prepared to report on the use of proceeds.

The Government of Ghana has made progress with respect to the first two stages, albeit by adopting a broader Sustainable Financing framework rather than a Green Bond framework. The Ministry of Finance published the "Sustainable Financing Framework" in October 2021 to demonstrate how it will identify programmes and projects with green and/or social credentials (Ministry of Finance, 2021d). This framework provides guidance on the sectors and projects that are eligible to receive the proceeds of sustainable bond issuances in Ghana. Eight categories eligible for green expenditures are identified (e.g., renewable energy, energy efficiency, clean transportation) with examples of eligible budget expenses listed. The 36 budget expenses represent a national green taxonomy that is aligned with the country's National Determined Contributions to the UNFCCC. Nuclear power generation, fossil fuel production, and fossil fuel power generation are explicitly excluded. The Framework is accompanied by a Second Party Opinion, which provides an independent opinion on the alignment of the Framework with current market standards (including the Green Bond Principles 2021) (Sustainalytics, 2021).

Overall, with the publication of the Sustainable Financing Framework, the government in Ghana appears to be in a good position to proceed with a Green Bond issuance, when market conditions are opportune (either domestically or internationally). The process of project evaluation and selection will be overseen by an inter-ministerial working group, with the Ministry of Finance taking the lead on allocation and impact reporting.

### **3.6 The prospects of additional revenue from global climate funds**

Ten years ago, expectations were raised that countries such as Ghana would receive significant support from the international community to help implement their national response to climate change. This was a key element of the global climate negotiations hosted by the UNFCCC Secretariat. It is reflected in the structure of many countries' NDCs (including Ghana's), where significant elements of these national targets are conditional on receiving support from the international community (specifically from Annex II countries of the UNFCCC). However, this finance has not been forthcoming at scale, reflected in the failure of Annex II countries to meet their commitment to raise US\$100 billion/year by 2020.

Much of the available international support is small-scale and project based, often operating outside the national budget (e.g., funding provided by the Adaptation Fund). Two global climate funds that have received much attention because of the larger scale at which they operate are the Green Climate

Fund (GCF) and the Climate Investment Funds (CIF). Both funds have supported climate action in Ghana in recent years, although accessing funding has proved to be a long drawn-out process that is not geared to making a rapid response to unforeseen circumstances such as the conditions created by the COVID-19 pandemic.

Ghana had high expectations of the GCF. However, as of February 2022, the GCF reports only five projects in Ghana, with total GCF project financing of US\$82.4 million.<sup>22</sup> Three of these projects cover multiple countries, where the element of project activity in Ghana is unclear. The two national projects are both very recent investments and are limited in scale (see Table 11 below). Recognising the cumbersome business model of the GCF, where the issue of accessing funds has been a long-held frustration of many countries, there is little evidence that the GCF will be a source of significant additional funding to Ghana in the near future.

**Table 11. GCF projects operating in Ghana**

GCF project nos.	Name of project	GCF Board approval date	Total project value (US\$ million)	GCF financing (US\$ million)	Project co-financing (US\$ million)
FP114	Program on Affirmative Finance Action for Women in Africa (AFAWA): Financing Climate Resilient Agricultural Practices in Ghana	July 2019	25.6	20.0	5.6
FP137	Ghana Shea Landscape Emission Reductions Project	Aug 2020	54.5	30.1	24.4

Source: <https://www.greenclimate.fund/countries/ghana>

The second large-scale international fund is the Climate Investment Funds (CIF), which employs a very different business model to that of the GCF. The CIF is delivered through a set of thematic programs that have national investment plans as their starting point. This allows for more programmatic delivery, drawing on the expertise of multilateral and regional development banks as the CIF implementing partners. Table 2 lists the two CIF programs that are currently operational in Ghana.

**Table 12. CIF programs operating in Ghana**

CIF program	CIF approval date	Total program value (US\$ million)	CIF financing (US\$ million)	Program co-financing (US\$ million)
Forest Investment Fund	Nov 2012	117.6	74.2	43.4
Scaling Up Renewable Energy	May 2015	69.2	28.5	40.7

Sources: <https://www.climateinvestmentfunds.org/country/ghana> and [African Development Fund extends \\$27.39 million grant to support development of mini grid and solar PV net metering in Ghana | African Development Bank - Building today, a better Africa tomorrow \(afdb.org\)](https://www.afdb.org/en/news-and-events/story/african-development-fund-extends-27.39-million-grant-to-support-development-of-mini-grid-and-solar-pv-net-metering-in-ghana)

Global climate funds rely on donor funding for their periodic replenishment. The present global economic context suggests that donor funds will remain constrained in the near-term. Under these circumstances, it appears highly unlikely that global climate funds will provide the level of financial assistance foreseen in Ghana's 2015 NDC. However, these funds may still have a significant role to

<sup>22</sup> <https://www.greenclimate.fund/countries/ghana>, accessed 19<sup>th</sup> February 2022.

play by replacing earlier development assistance in supporting innovative technologies and new approaches to respond to climate change.

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