



Infrastructure & Cities for Economic Development

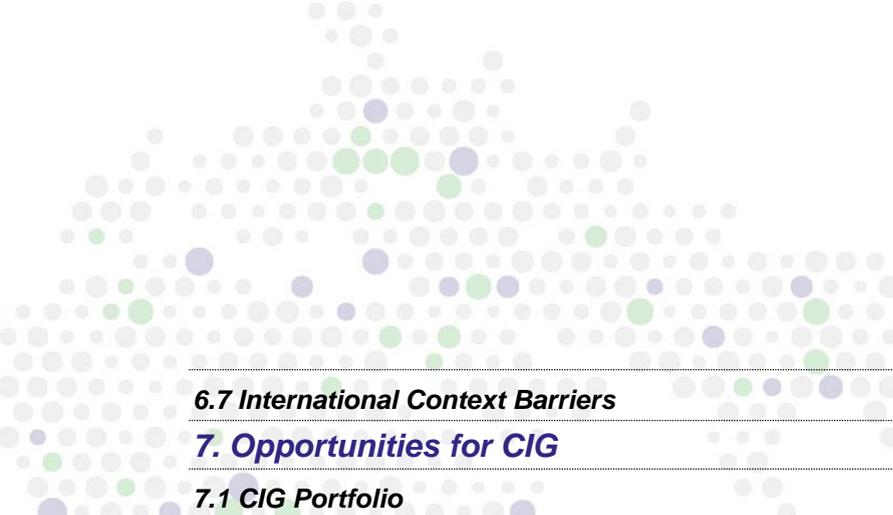
Cities and Infrastructure for Growth (CIG) High-level scoping in Sierra Leone

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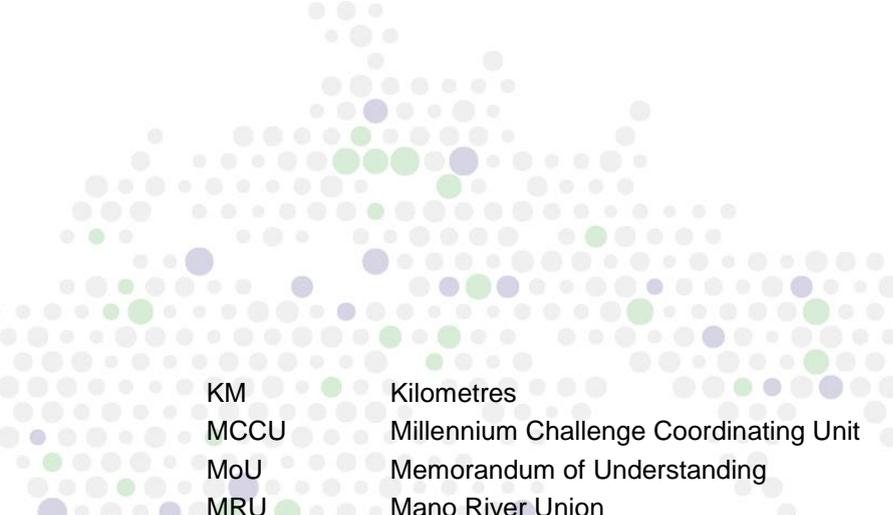
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Acronyms

AfDB	African Development Bank
AGOA	US's African Growth and Opportunity Act
AIDI	African Infrastructure Development Index
APC	All People's Congress
AU	African Union
BIO	Belgian Investment Company for Developing Countries
BRT	Bus Rapid Transport
CDC	CDC Group Plc (formerly Commonwealth Development Group), UK's development finance institution
CFTA	Continental Free Trade Agreement
CIG	Cities and Infrastructure for Growth
CLSG	Côte d'Ivoire, Liberia, Sierra Leone and Guinea
DEG	German Investment Corporation
DFID	UK Department for International Development
EAIF	Emerging Africa Infrastructure Fund
EBA	EU's Everything But Arms Initiative
ECOWAS	Economic Community of West African States
EDSA	Electricity Distribution and Supply Authority
EGTC	Electricity Generation and Transmission Company
EIB	European Investment Bank
EPC	Engineering, Procurement & Construction
EVD	Ebola Virus Disease
EWRC	Electricity and Water Regulatory Commission
FCC	Freetown City Council
FGM	Female genital mutilation
FMO	Netherlands Development Finance Company
GoSL	Government of Sierra Leone
GHG	Greenhouse gas emissions
GNI	Gross National Income
GVA	Gross Value Added
I2F	Innovation and Investment Fund
ICED	Infrastructure and Cities for Economic Development
ICT	Information and Communication Technology
IDA	International Development Association
IGC	Infrastructure Growth Centre
IMF	International Monetary Fund
IPP	Independent Power Producer
IVS	Inland Valley Swamp
JICA	Japan International Cooperation Agency
KfW	Kreditanstalt für Wiederaufbau



KM	Kilometres
MCCU	Millennium Challenge Coordinating Unit
MoU	Memorandum of Understanding
MRU	Mano River Union
NDC	Nationally Determined Contributions to the Paris Agreement
NEPAD	New Partnership for Africa's Development for Regional Economic Communities
NGO	Non-governmental Organisation
NST	National Strategy for Transformation
ODA	Official Development Assistance
PIDG	Private Infrastructure Development Group
PPP	Public Private Partnership
PSRP	Poverty Strategy Reduction Paper
PV	Photovoltaic
SLPP	Sierra Leone People's Party
SLRSA	Sierra Leone Road Safety Authority
SLURC	Sierra Leone Urban Research Centre
SME	Small and Medium Enterprise
SPV	Special Project Vehicle
TA	Technical Assistance
TAF	Technical Assistance Facility of the Private Infrastructure Development Group
UK	United Kingdom
UNDP	United Nations Development Programme
UNICEF	United Nations International Children's Emergency Fund
US	United States
USD	United States Dollar
VAT	Value Added Tax
WAPP	West Africa Power Pool (WAPP) line linking Côte d'Ivoire, Liberia, Sierra Leone
CLSG	and Guinea (CLSG)
WB	World Bank
WBG	World Bank Group
WEF	World Economic Forum
WTO	World Trade Organisation

1. Introduction

1.1 Overview

DFID's Growth and Resilience Department (DFID-GRD) has identified gaps in country-level funding and capacity to support an expanded urban and infrastructure programme which delivers inclusive and resilient economic growth. Accordingly, to help its partner countries realise the potential of cities and towns as drivers of transformative and inclusive economic growth, DFID has established the multi-country Cities and Infrastructure for Growth (CIG) programme that addresses the need to improve public sector capabilities to 1) manage urban development, power and infrastructure programmes and 2) facilitate increased investment from both the public and private sectors.

The centrally funded CIG programme provides selected DFID country offices with funding support for in-country technical assistance (TA) to help respond to the funding and capacity gaps in the urban and associated infrastructure sectors that are constraining inclusive, sustainable, economic growth. Specifically, the CIG programme addresses key constraints to enhanced urban productivity; helps facilitate improved access to reliable and affordable power for industrial development; and encourages increased investment into essential infrastructure.

Country programmes are complemented by a central Results, Management and Learning (RML) component to support coordination, results verification and learning across the CIG country programmes, and an Innovation and Investment Fund (I2F) that will be available to DFID country offices wishing to support innovative approaches to addressing urban and infrastructure challenges.

Between 2016-17, ICED supported DFID with recommended areas of potential TA support through the CIG programme in an initial three CIG phase one countries (Myanmar, Zambia and Uganda).¹ These recommendations were identified through a two-week in-country high level scoping visit and subsequently used to help DFID prepare detailed terms of reference for the procurement of the CIG phase one country programmes from service providers. The CIG programme is now successfully in implementation in all three phase one CIG countries.

ICED has since been asked to support DFID-GRD with options for the design of the CIG programme in a set of four CIG phase two countries through a similar high-level country scoping study in these countries. This report summarises the high-level scoping findings for a potential CIG country programme in Sierra Leone.

1.2 Report Structure

This high-level scoping study report is structured to help DFID prepare detailed terms of reference for the final design and implementation of the relevant CIG country programme and to help contractors interested in bidding for the programme to gain an informed understanding of the overall CIG programme. All reports will be made available to prospective bidders but are not intended for broader publication. This report covers suggested opportunities for possible CIG support in Sierra Leone, with the following structure:

¹ ICED also provided suggestions for the RML component and options for the structure and operations of the Innovation and Investment Fund (I2F). In addition, ICED prepared a suite of reports (the Evidence Review Vols 1-3) setting out information on pathways to economic growth and what approaches have been found to be successful and what have been less so, in the broad sectoral areas covered by CIG.

Chapter 2 – Sets out country context

Chapter 3 – Sets out governance structures

Chapter 4 – Sets out the current situation with infrastructure provision (covering water, energy transport and housing sectors)

Chapter 5 – Sets out the current role of donors and other financing agencies.

Chapter 6 – Covers some of the bottlenecks and barriers to urban productivity and economic growth

Chapter 7 – Concludes by indicating possible intervention areas for future support through the planned CIG programme (CIG) for Sierra Leone

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2. National and Urban Context

2.1 Economic Growth

Since the end of the civil war in 2002, Sierra Leone has experienced a significant period of growth, averaging 7.6% per annum between 2003 and 2014.² Despite high growth rates, there have been high levels of volatility, with growth fluctuating between +21% and -20% in the 2003-2014 period, as well as uneven performance across sectors. This volatility has restricted the country's ability to sustain investments that strengthen sectors and create jobs.

This volatility stems from the relatively undiversified nature of Sierra Leone's economy, which leaves the country vulnerable to macroeconomic shocks. For example, growth was crippled in 2014-2016 by a drastic fall in global iron prices, leading to a collapse in the mining sector (responsible for around 85% of gross value-added growth in 2014). The Ebola Virus Disease (EVD) epidemic struck over the same period of time, which not only impacted the economy but also resulted in major human and social costs (see Box 1). While growth faltered, most sectors recovered quickly, but longer term social and financing issues remain.

Nevertheless, the economy is making a steady recovery in recent years and the medium-term outlook for the economy remains positive. Growth in 2016 was reported nationally as 6.3% and in 2017 was 3.8% and is expected to reach 6.5 percent in the medium term.³

2.1.1 Composition of growth

Recent economic growth has not been accompanied by structural transformation of the economy. Overall, growth has been driven by steady increases in agricultural output, specifically rice production, supported by more volatile growth in iron ore extraction. Agriculture remains the dominant component of gross domestic product (GDP), at approximately 50% (see **Error! Not a valid bookmark self-reference.**)

According to the National Accounts, Rice was responsible for around 40% of annual gross value added (GVA) growth up until 2011, driven by steadily increasing yields (due to changing farming patterns) and expansion of areas harvested.⁴

Prior to 2014, iron ore had become a major source of growth for the economy. The industry had started to develop rapidly in 2011, growing to represent around 65% of

Box 1: Ebola Virus Disease Outbreak in Sierra Leone (from HerbertSmithFreehills, Investing in Sierra Leone)

The Ebola epidemic not only resulted in a devastating humanitarian crisis, but also caused very significant damage to Sierra Leone's economy. The necessary restrictions on movement of persons, and the commitment of many public resources (including donor resources and financial aid programmes) to the resolution of the crisis meant that normal economic activity became difficult. New foreign investment largely ceased, and many existing foreign investors were required to withdraw their expatriate personnel from the country and reduce or discontinue operations.

Sierra Leone was declared Ebola transmission free on 7 November 2015. To place the country back on its economic development trajectory, the Government of Sierra Leone (GoSL) published a Post-Ebola Recovery Strategy in 2015 with assistance from various international donors. This included a holistic review of the GoSL's priorities, policies and systems underpinning social betterment and economic growth. This strategy continues to be implemented as of the writing of this report.

² All data in this section are derived from the National Accounts - Statistics Sierra Leone (2010) Report on Real GDP 2009; (2015) GDP Analysis 2013-2014; (2018) GDP Analysis 2016-2017. Accessible: <https://www.statistics.sl/index.php/gdp.html>

³ World Bank (2018) Sierra Leone Economic Update

⁴ This has largely been through expanding production in the Inland Valley Swamp areas (IVS), rather than the highlands, which allows more continuous growing without the need for a fallow period.

GVA according to the National Accounts. However, this was halted prematurely due to the global crash in iron ore prices in 2014. As a result, prices fell by more than half, triggering the collapse of the two multinational iron ore mining companies (London Mining and African Minerals). Iron ore's contribution to annual export revenues plummeted from 60% in 2014 to just 15% in 2015.⁵ There are signs of a steady recovery of the industry in Sierra Leone, but global prices remain depressed, affecting profitability and the existing mines are now mired in legal issues, restricting further development.

Table 1: GDP structure at key points of the economy (Source: ICED analysis of Statistics Sierra Leone (2010) data.

Sector	Contribution to GDP (%)			
	2002	2011 (pre-iron ore)	2014 (peak iron-ore)	2017 (post-collapse)
Agriculture	45.5	54.3	40.4	52.2
Industry	9.4	8.8	30.6	9.6
Services	45.1	36.8	29.0	38.2

2.1.2 Employment

Growth in the economy has not yet generated meaningful employment, particularly for the country's growing young population. Nearly half the population below the age of 15.⁶ There are currently few formal-sector job opportunities for the average worker in Sierra Leone. An estimated 100,000 jobs will need to be generated annually over the coming years to absorb new entrants into the workplace.⁷

The link between economic output and employment is very weak: 86% of GVA growth came from the mining sector in 2014, whereas the sector only account for 1.4% of employment.⁸ There are also stark differences in labour productivity across sectors, with very low levels of productivity in agriculture and services, which employ the most people.

According to official statistics, employment in 2014 was around 62% with negligible differences between the numbers of women and men in employment. However, this masks underemployment; for example, around 30% of those employed work less than eight hours a day.⁹ There is limited gender data on the quality and type of jobs that women occupy.¹⁰

Informal employment is pervasive in Sierra Leone. According to the World Bank's recent Jobs Diagnostic, more than 35% of wage jobs and more than 88% of non-agricultural self-employment are informal. Further, approximately 90% of labourers work in the informal sector, predominantly in subsistence or other small-scale agriculture.

2.1.3 Trade

The quality of data on international trade in Sierra Leone is very poor, making it difficult to properly assess the country's trade position. Based on official data, Sierra Leone exported \$881m in 2016, of which minerals accounted for 53% (see Figure 1). This consisted mainly of iron ore exports to China, but also of rutile (13%, mainly to Europe and US), diamonds (10%, mainly to Belgium), and

⁵ Statistics Sierra Leone (2018) Export statistics (2016-2017)

⁶ Statistics Sierra Leone (2017) Thematic report on population structure and distribution.

⁷ This figure is quoted by various sources including UNDP and DFID. It has been derived from the central population growth forecast for Sierra Leone in the 2017 revision of World Population Prospects

⁸ World Bank (2014) Sierra Leone Labour Force Survey

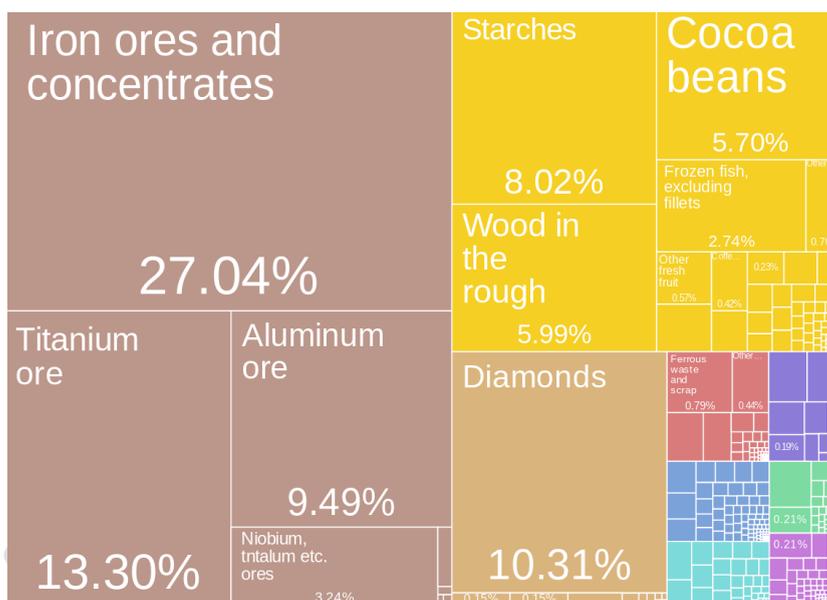
⁹ World Bank (2017) Jobs Diagnostic

¹⁰ World Bank (2016) Sierra Leone Labour Force Survey

bauxite (9%, to Romania).¹¹ The country has a large trade deficit, importing \$1.58bn in 2016. Around 33% of imports consisted of food - with rice accounting for 8% of imports. Refined petroleum products are also a significant import, the value of which can fluctuate dramatically depending on power sector demand and fossil fuel prices.

However, the country's porous borders hide a significant volume of under-reported Informal Cross-Border Trade (ICBT) with its neighbours (Guinea and Liberia). More women (65%) are engaged in cross border trade across formal borders than men (35%), while the opposite is true for informal borders. This can be explained by the easier terrain and fewer risks at the formal borders.¹²

Figure 1: Sierra Leone's product exports in 2016 (Source: Atlas of Economic Complexity, Harvard University)



2.1.4 Spatial and urban context

Sierra Leone has a high degree of urban primacy with Freetown more than four times the size of Bo, the second biggest city. Approximately 42% of the population is urban and this population is growing at 3% (compared with the national average of 2.5%).¹³ The country remains largely rural with the majority of the workforce in subsistence agriculture. By 2025, the urban population is projected to reach 46%.¹⁴

Population is unevenly distributed across the country, with more densely populated areas in the Western Area and the south-east of the country. There are sparsely populated areas in the north-east and south-west. Greater Freetown and the surrounding suburbs account for only 0.78% of the total land area, but around 25% of the total population.¹⁵

The civil war helped concentrate population growth in Freetown as people fled the fighting from the countryside. This means that Freetown has a high proportion of migrant groups that have gravitated around unplanned settlements and slums. Such groups are particularly vulnerable and excluded from planning decisions (both in physically and in terms of limited rights and access to services) and their needs should be considered in planning processes going forward.

Rapid population and urban growth in Freetown have not been accompanied by similar levels of economic growth. The unplanned nature of population growth has also in part contributed to the basic infrastructure deficit as government has struggled to manage the chaotic expansion. As a result, productivity in Freetown is low – only an estimated 4% of land in the central business district

¹¹ Source: Atlas of Economic Complexity, accessible at: <http://atlas.cid.harvard.edu>

¹² International Growth Centre (2018) The realities of cross-border trade between Sierra Leone and its neighbours. Policy Brief 39403

¹³ Statistics Sierra Leone (2017) Thematic report on population structure and distribution

¹⁴ Statistics Sierra Leone (2017) Population and Housing Census 2015

¹⁵ GOPA – CES Consultant & 3BMD Consulting (2010). A Spatial Development Strategy for Sierra Leone. Preparatory Components and Studies of the Freetown Development Plan: Support to the Freetown City Council and to the Urban Planning Authorities. MLCPE, funded by the European Union. Accessed online 10 October 2018 at: http://www.slurc.org/uploads/1/6/9/1/16915440/draft_final__nsdf__sierra_leone_october_2014.pdf

is used for commercial activity.¹⁶ Density is instead due to the proliferation of informal settlements and unplanned urban expansion. Counter to typical urbanisation patterns, as Freetown has grown, Sierra Leone has instead de-industrialised.

2.1.5 Future growth prospects

Sierra Leone faces a unique window of opportunity following a turbulent period. The newly elected administration promises to bring a longer-term developmental state approach to the economy. With a new, dynamic Mayor of Freetown who appears to be successfully bridging party lines, the prospects for the development of Freetown look promising. The incoming government under the Sierra Leone People's Party (SLPP) has a vision for the country, a 'New Direction' that will be further detailed in the forthcoming national development plan. This plan is likely to focus on diversifying the economy, particularly through transforming agricultural growth, stimulating tourism and enhancing fisheries' contribution.

Agriculture is a core growth sector. Despite its natural endowment, Sierra Leone's agricultural sector is underperforming and has substantial room to increase productivity – both through intensification of production and increased value addition.¹⁷ The country has been slow in developing most commercial crops, such as coffee or cocoa, despite their export potential. The previous government's National Sustainable Agriculture Plan (2009) identified the lack of agricultural infrastructure as a key limiting factor.¹⁸ This includes a lack of storage facilities; poor roads increasing time to market; and delays to processing due to the lack of rice and feed mills. Other infrastructure constraints are limited irrigation facilities; poor port facilities; and lack of landing sites for fisheries.¹⁹ There are limited facilities for value addition; investment is needed to establish agro-processing centres that can add value to agricultural products as well as improve quality assurance and food handling.

Fisheries can contribute significantly more to the economy if properly managed. Given its coastal location, the fisheries sector has huge potential for Sierra Leone. An estimated 80% of Sierra Leone's protein comes from fishing, but very little value is captured, and the sector is poorly managed.²⁰ The country urgently needs to regain control of its oceans or it risks losing this resource if fish stocks collapse. Critical issues include: over issuing of licences; weak enforcement (illegal licences and practices); and poor management of fish stocks (limited data and monitoring). If the government can get on top of the sector, it could generate a significant number of jobs in and around the Freetown area.

Tourism has potential to contribute if the right infrastructure is in place. Given its rich landscape and numerous beaches, tourism has a lot of potential and is another key strand of the government's diversification strategy. There are plans to smooth entry into the country, including minimising visa requirements and improving airport facilities and ferry services. The sector has the potential to contribute to generating more employment opportunities with local input. The prospects for tourism will depend upon progress in wider infrastructure issues, including water supply and sanitation as well as waste management.

¹⁶ Iyamide Joaque, Z. (2018). "Sierra Leone News: Electricity outages limit profits". Published 25 June 2018 online at Awoko. Accessed 10 October 2018: <https://awoko.org/2018/06/29/sierra-leone-news-electricity-outages-limit-profits/>

¹⁷ As part of its forthcoming Agricultural Transformation Strategy, the incoming SLPP government is now developing plans to target markets with preferential trade agreements such as the US's African Growth and Opportunity Act (AGOA) and the EU's 'Everything But Arms' Initiative (EBA). Cocoa, cashew and coffee (the three Cs), palm oil and ginger have been identified as priority crops. However, production data is limited, which limits the ability to measure performance and target policies.

¹⁸ JICA (2009) Sierra Leone National Rice Development Strategy

¹⁹ Sierra Leone loses an estimated 50% of its rice crop, 80% of vegetables and close to 90% of its fruit harvest (according to State House estimates).

²⁰ Source: FAOSTAT data (2016).

Mining will also play a role as a revenue generator. The mining sector is still recovering from the aftermath of poorly regulated junior mining companies that failed to generate lasting value in the iron ore sub-sector. There is still potential in the sector, even with lower commodity prices – but this depends on getting the right partners, finding ways to lower operational costs and improving regulation. Other mining sub-sectors, such as bauxite, rutile, diamonds and gold remain stable, providing a basis for continued development. Small-scale artisanal mining is also prevalent, but has not yet been properly harnessed and could provide employment opportunities for provincial communities. Overall, mining will continue to be a key sector for Sierra Leone, but with a greater emphasis on its role as a revenue raiser to create more room for government spending rather than as a sector that creates jobs or drives structural transformation.

Two economic growth clusters are emerging as political priorities. Through the early work of the President’s Infrastructure Initiative and the Economic Management Team, two primary geospatial projects have recently risen to prominence:

- *Lungi-Freetown Connectivity* – The main airport in Lungi is across the harbour from Freetown city centre. Improving the connectivity between Lungi and Freetown will help manage urban development and alleviate pressures on the capital; boost tourism and open up the opportunity to develop the under-used area around Lungi. Publicly the most visible aspect of this cluster is the proposed bridge across the harbour (as announced at FOCAC, with Chinese support) – however, other options are also under consideration (including improved jetty facilities and increased use of water transport).
- *Eastern Economic Cluster* – The fertile agricultural zones to the east and south of the country also house significant mining resources (rutile and bauxite). The development of a port on the southern shore and supporting rail/road infrastructure (using the existing infrastructure corridor created by the old railway), could create growth corridors for agricultural and mining produce. This growth cluster has not been formally named, but for convenience in this report, it is referred to as the Eastern Economic Cluster.

2.2 Infrastructure

Sierra Leone’s infrastructure is one of the least developed in Africa, with an African Infrastructure Development Index (AIDI) score of 9.94, placing it 47th out of the 54 countries covered (see Table 2).²¹ The country scores poorly against several other global indicators; the World Economic Forum’s (WEF’s) Global Competitiveness Index gives Sierra Leone an infrastructure score of 2.11 out of 7. The World Bank’s Logistics Performance Index gives the country a score of 2.07 out of 5 for its trade and transport-related infrastructure.

Table 2: AIDI Composite Indices for Sierra Leone, by sector (2016)

Composite Index	Rank (of 54 countries)	Index (maximum 100)
Transport	34	4.45
Electricity	48	0.34
ICT	40	10.66
Water Supply and Sanitation	43	32.29

²¹ The Africa Infrastructure Development Index (AIDI) is produced by the African Development Bank and serves to monitor and evaluate the status and progress of infrastructure development across the continent.

According to the African Infrastructure Country Diagnostic conducted by the World Bank, infrastructure added only around 0.51 percentage points to the per capita growth rate in Sierra Leone over 2003–07.²² Growth has been held back by key infrastructure weaknesses, in particular:

- The under-developed road network restricts access to markets and limits agglomeration effects, particularly in the provinces (including around the Eastern Economic Cluster);
- The lack of cold chain and processing facilities leads to significant post-harvest losses in agriculture;
- Power sector weaknesses means key sectors need to provide their own power supply, increasing operational costs.

If Sierra Leone could upgrade its infrastructure to the best practice levels in Africa, per capita growth rates could be boosted by more than three percentage points.²³ However, systems for prioritising, planning, financing, building and maintaining infrastructure are poor. There are good plans and strategies in place and there is good capacity in engineering and construction, but this is not well co-ordinated or used systematically. The sheer scale of the investment and reform required means that Sierra Leone needs to make difficult decisions to prioritise its infrastructure investment. This prioritisation needs to be founded on a clear understanding of critical infrastructure for the country's national development objectives, and this is expected to be captured in the new government's National Development Plan (to be published in December 2018).

There are promising signs, with President Bio recently appointing Dr John Tambi, a highly experienced and influential technocrat, as the Chairman of the Presidential Infrastructure Initiative. The emerging growth poles set out above will help sequence infrastructure development so that growth-enabling infrastructure is prioritised and properly planned out.

2.3 Investment Context

After a period of steady growth through until 2012, foreign direct investment (FDI) fell significantly due to the Ebola outbreak, falling to USD \$138 million in 2016, but recovering to USD \$560 million in 2017.²⁴ FDI levels remain below the 2011 peak of USD \$950 million (supported by the expansion of the iron ore industry). China has emerged as a major investor, financing the new airport, hospitals, dams, industrial production and rice cultivation and mining.²⁵

Sierra Leone is ranked 163 among 190 economies in the 2019 World Bank Doing Business survey.²⁶ This is a deterioration from its previous position of 160 in 2018 despite progress against a number of areas. The overall ease of doing business in Sierra Leone averaged 147.4 from 2008 until 2018. The Ministry of Trade and Industry is focusing on making the necessary changes to improve some of these ratings. For example, combining business registration procedures to facilitate starting a business; it has also tried to facilitate cross-border trading by eliminating export permits and introducing pre-arrival processing.²⁷ In 2016, the WEF ranked Sierra Leone 130 (out of 137 countries) in its “competitiveness” index, citing the most problematic factors for doing

²² Pushak, N & V. Foster (2011). Sierra Leone's Infrastructure: A Continental Perspective. Africa Infrastructure Country Diagnostic. World Bank, Washington, DC

²³ Ibid

²⁴ UNCTAD (2018). World Investment Report 2018

²⁵ Source: Santander Trade Portal. Available from <https://en.portal.santandertrade.com/establish-overseas/sierra-leone/investing-3>

²⁶ World Bank (2018). Doing Business 2019. Training for Reform. International Bank for Reconstruction and Development.

²⁷ Ibid

business as 1) access to financing, 2) foreign currency regulations, 3) corruption, 4) inadequate supply of infrastructure and 5) inflation.²⁸

Sierra Leone remains heavily aid-dependent, receiving around \$700m a year (2016) in ODA, around 21% of GNI (see Section 5 on Current Donor Focus). Around 60% of this is bilateral aid, including from DFID, the World Bank, African Development Bank, JICA, the Islamic Development Bank and others²⁹. Domestic public investment is also constrained by high levels of debt and under-collection of revenues.

The new government is focusing on shoring up domestic revenue performance and on mobilising other sources of finance, in particular, by encouraging more private investment into the country. Current private investment in infrastructure includes: the Wellington-Masiaka toll road (a 25 year Build-Own-Operate-Transfer PPP with the Chinese Railway Seventh Group); the QE2 Freetown container port (a 20-year concession managed by Bolloré Africa Logistics); the Holland Shipyard repair facilities (20-year concession). The telecommunications sector has seen the most active investment after the liberalisation of the sector in 2016.

To further promote private investment, several incentives are in place, with private infrastructure projects over \$20m exempt from income taxes for 15 years from start up. The tourism sector also has a 5-year income tax exemption, duty free imports and payroll tax exemption for a limited number of foreign employees³⁰. A PPP unit was also set up to facilitate deal flow - despite this, there have been very few successful PPP projects to date – which has been largely attributed to political interference and a lack of prioritisation among MDAs. The new Presidential Infrastructure Initiative will see the PPP unit move to the President's Office and be explicitly linked to high level decision-making in the form of the Economic Management Team – a ministerial level sub-committee of the Cabinet. This promises to address some of the issues and the Government is developing more transparent bidding processes to remove political interference, but its impact remains to be seen.

2.4 Social and Environmental Context

2.4.1 Gender, disability and inclusion considerations

Sierra Leone's macroeconomic growth has been accompanied by reductions in poverty, declining from 66.4% in 2003 to 52.9% in 2011.³¹ This reduction in poverty has largely been in rural areas where poverty declined to 66.1% from 78.7% in the same period. Urban poverty fell to 31.2% in 2011, from 46.9% in 2003. However, poverty in Freetown increased to 20.7% from 13.6%. Detail behind the data is poor, but reasons may include the civil war, and more recently the influx of rural poor looking for employment in Freetown, as well as richer households being less willing to participate in household surveys. Meanwhile, income inequality across the country has fallen; the Gini index fell by 18% from 2003 and 2011.³² Despite reductions in poverty, Sierra Leone remains one of the poorest countries in the world with a GNI per capita of USD \$490.³³

With a median age below 20, the majority of Sierra Leoneans are young, between 15-35 years old. Education levels across the country are low, particularly for girls and women, and in rural areas. However, young people are better schooled than older generations and over 50% are literate, compared with just 22% of 36-64-year olds. This reflects improvements in the accessibility of education. Vocational training is limited, however, and is harder to access with low levels of formal

²⁸ Schaub, K & X. Sala-i-Martin (2018). Insight Report: The Global Competitiveness Report 2017–2018. World Economic Forum.

²⁹ Source: OECD DAC CRS database

³⁰ Source: Sierra Leone Investment and Export Promotion Agency

³¹ Statistics Sierra Leone & World Bank (2011) A Poverty Profile for Sierra Leone, https://www.statistics.sl/images/StatisticsSL/Documents/poverty_profile_for_sierra_leone.pdf

³² Ibid.

³³ Source: Atlas of Economic Complexity, accessible at: <http://atlas.cid.harvard.edu>

education. Vocational training tends to be more accessible to young men than women, and to young people in urban Freetown than in rural areas.

Some 100,000 young people join the labour force each year, but lack opportunities to enter into productive, formal jobs. This has resulted in high underemployment, especially among young people and women, and likely growing informal employment (mostly self-employed). Nearly 50% of workers in Freetown would like to work more hours. Youth programmes appear cosmetic, as they are limited in scope; for example, a recent government youth initiative, the 'National Youth Service' has just 200 participants.³⁴ The Service is in its inaugural year (beginning in October 2018) and is focused primarily on promoting volunteerism, patriotism and national cohesion as opposed to youth skills development and job creation.

Entrepreneurial training opportunities are limited and there is a lack of technical vocational institutes (and those that exist rarely have the equipment to provide practical training). Sierra Leone has some good academic institutions such as Njala University and Fourah Bay College, West Africa's oldest university, yet many graduates still require basic project management and employability training to become productive members of the workforce.

Sierra Leone ranks 184 out of 189 on the UN's Human Development Index. It is in the bottom 10 countries on the global Gender Inequality Index, which is a composite measure reflecting inequality in achievement between women and men in terms of reproductive health, empowerment and the labour market. Female genital mutilation (FGM) is prevalent across Sierra Leone and closely tied to cultural traditions, with up to 90% of girls undergoing the procedure, among the highest rates in Africa (UN).³⁵ The practice was banned during the recent elections, but anti-FGM groups dismissed it as a political move rather than signalling progress towards eliminating it. More than half of women are married by the age of 18, while a third of those aged 15–19 are already mothers or are pregnant with their first child³⁶.

The civil war has also left scars on Sierra Leone's women and young. During the civil war, up to 250,000 women were victims of gender-based violence.³⁷ An estimated 10,000 children, mostly boys but also girls, were forced into becoming child soldiers during the civil war, making up 40-50% of the Revolutionary United Front's militia, and up to 20% of the government's army.³⁸ The Disarmament, Demobilization and Reintegration (DDR) process in Sierra Leone has been a partial success, but reintegration of former combatants into society has been a bigger challenge.³⁹ It is thus even more important for the country's stability that idle youth find opportunities to contribute productively to the society.

In the labour market, women do not have the same economic opportunities as men, who earn on average 2-3 times more. Given the relatively low age of marriage and child-bearing more than 15% of women in their twenties are engaged in household work or unpaid family work, compared with less than 5% of men in the same age group. The female labour force participation rate fell significantly after the civil war - to 57% in 2017 from 65% in 2004 – although the most recent Labour Force survey shows a negligible difference between men and women in employment, so it is not clear how the fall in female labour force participation compares to the fall in male labour force

³⁴ Awoko (2018). Sierra Leone News: The re-birth of National Youth Service. Awoko News. 4 October 2018. Accessed online 10 October 2018: <https://awoko.org/2018/10/04/sierra-leone-news-the-re-birth-of-national-youth-service/>

³⁵ UNFPA (2017) <https://sierraleone.unfpa.org/en/news/statement-United-nations-sierra-leone-international-day-zero-tolerance-female-genital>

³⁶ Mills et al (2015) The legacy of conflict and the struggle to end sexual and gender-based violence in Sierra Leone

³⁷ ReliefWeb (2014) Sierra Leone: country profile <https://reliefweb.int/sites/reliefweb.int/files/resources/acaps-country-profile-sierra-leone.pdf>

³⁸ Borgen Project (2017) 10 facts about child soldiers in Sierra Leone <https://borgenproject.org/10-facts-about-child-soldiers-in-sierra-leone/>

³⁹ Sesay, M. & M. Suma (2009). Transitional Justice and DDR: The Case of Sierra Leone. International Centre for Transitional Justice. Accessible at: <https://www.ictj.org/sites/default/files/ICTJ-DDR-Sierra-Leone-CaseStudy-2009-English.pdf>

participation. Among the economically active, women are more often found in lower-paid crop farming, agricultural and service jobs, while men hold more technical and administrative positions as well as jobs in forestry logging, fishing and mining.

Official statistics estimate 1.4% of the population has disabilities, but other estimates suggest a much higher rate - up to 15%, the majority of whom have no source of income. Yet looking at the 2015 Household and Population Survey, employment patterns for people with disabilities largely track the overall population, suggesting that they have access to many of the same jobs. Most are engaged in agricultural and fishing activities, reflecting in part the regional distribution of people with disabilities (over a third live in the rural Northern region). Unlike general population trends, however, youth with disabilities have less training than their older peers, which may be due to programmes set up for decommissioned soldiers in the aftermath of the civil war that are no longer available. The Persons with Disabilities Act of 2011 paved the way for the creation of a national disability commission in 2012, but it is under-resourced and its effectiveness has not yet been demonstrated.

2.4.2 Climate and environmental considerations

No systematic study on climate impacts has been done in Sierra Leone, yet it is ranked as the third most vulnerable country in the world.⁴⁰ Key risks for Sierra Leone include:⁴¹

- Increased temperatures will increase demand for power and increase health risks for the most vulnerable. Temperature sensitive crops (such as coffee) will be affected through quality, yields and viability.
- Shorter rainy seasons and growing seasons - affecting agricultural production.
- Generalised torrid, arid and semi-arid conditions - which will reduce growing areas.
- Longer dry spells - stressing water supplies.
- More intense extreme rainfall events - leading to flooding and landslides. This may also increase the intensity of cyclones and storm surges.
- Rising sea levels could damage coastal infrastructure, lead to flooding and the intrusion of saltwater into low-lying areas, and the loss of coastal agriculture due to soil salinization and inundation.⁴²
- Ocean acidification is a poorly quantified risk but could affect fish stocks.

Risks from intense rainfall are particularly relevant in Freetown due to recent large-scale landslides. The impacts are exacerbated due to the mountainous topography, limited storm water drainage and weak solid waste collection blocking many of the existing drains. Uncontrolled, informal housing construction on the hillsides and in low-lying areas, prone to floods and vulnerable to sea level rise, also contribute to land erosion and precarious living conditions. The poor waste and environmental controls also have negative spill over effects on fisheries and tourism.

The environmental management working group for the Freetown City Transformation Plan has identified three priority areas that the city should focus on over the next four years: disaster risk reduction (e.g. erosion control, flood mitigation), preserving natural beauty (e.g. tackling deforestation, ambient water) and preserving natural resources (e.g. noise, air and water). The working group brings together several stakeholders, including local councillors, NGOs and CSOs;

⁴⁰ Source: Maplecroft Climate Change Vulnerability Index, 2014

⁴¹ Mouhamadou, B.S. et al (2016) Climate Change over West Africa: Recent Trends and Future Projections in J.A. Yaro and J. Hesselberg (eds.) (2016), Adaptation to Climate Change and Variability in Rural West Africa, DOI 10.1007/978-3-319-31499-0_3

⁴² Boko, M. et al. (2007). Impacts, Adaptation and Vulnerability. Contribution of Working Group II to the Fourth Assessment Report of the Intergovernmental Panel on Climate Change. Cambridge University Press, Cambridge UK

ensuring that these priorities are heard, and supported, by key stakeholders in the central government remains a challenge.

Sierra Leone's Nationally Determined Contribution (NDC) to the 2015 Paris Agreement aims to maintain greenhouse gas (GHG) emissions at current levels until 2035, which equates to 7.6MtCO₂e. This is a supported target, that will require \$900m of external financing to achieve. The country also has an intensity-based target of a 25-35% reduction by 2050 compared to 1990. Sierra Leone's hydropower potential and the import of regional hydropower holds some promise in delivering against this ambition. However, there is no evidence of how this will be achieved or how realistic this is - it remains to be seen if this ambition will be integrated into national planning.

Sierra Leone has weak capacity to manage climate change and environmental impacts. The Environmental Protection Agency is understaffed and underfunded, relying on income from environmental licenses and sending environmental impact assessments to an academic institution in South Africa, which are less likely to have the necessary contextual understanding. Underdeveloped policy and legislation relating to environmental issues in certain sectors also creates challenges for legitimate companies engaged in natural capital projects.⁴³

⁴³ For example, in forestry, the government is slow to recognise the difference between logs produced through natural forest logging and plantation forestry, and introduces and occasionally lifts bans on log exports, with limited understanding of the need to engage with industry before making these changes.

3. Governance Structures

3.1 Regional Governance

Sierra Leone is a member of several international bodies including the World Trade Organization, the African Union (AU), the Economic Community of West African States (ECOWAS) and the Mano River Union (MRU). Set up in 1971 by Sierra Leone and Liberia and with the secretariat in Freetown, the MRU is an international association that now also includes Guinea and Côte d'Ivoire.

Collaboration between Sierra Leone's neighbouring countries, Guinea and Liberia, is particularly active around the power sector. Through the New Partnership for Africa's Development (NEPAD), the technical body of the AU, the country also participates in a number of joint African initiatives around agriculture, infrastructure and capacity development. Trade liberalisation measures and economic partnerships characterise many of Sierra Leone's engagements with ECOWAS. In July 2018, Sierra Leone also joined the Continental Free Trade Agreement (CFTA), which aims to break down trade barriers and create a single market for African goods.

Sierra Leone has strengthened its standing around regional peacekeeping operations in recent years, while its civil war in 1991-2002 influenced the reshaping of ECOWAS from a purely economic grouping to one also focused on security collaboration. President Julius Maada Bio holds two key posts within the AU, as chairman of the Committee of Ten on the Reform of the United Nations Security Council, and as chairman of the Peace and Security Council.

3.2 National Governance Structures

Sierra Leone held presidential, parliamentary and local council elections on March 8, 2018, amid a large voter turnout. Following a run-off vote on March 31, 2018, opposition candidate Julius Maada Bio of the Sierra Leone People's Party (SLPP) was sworn in as president. However, the previously ruling All People's Congress (APC) gained a majority in parliament. While legal uncertainty marred the run-off vote, international election observers broadly branded Sierra Leone's elections as transparent and inclusive. Despite a policy advocating for 30% women's participation across governance in Sierra Leone, women only make up 12% of the 146 parliamentary seats.⁴⁴

Although the governance structure is tripartite with Executive, Legislative and Judiciary branches, there are often concerns expressed about the effectiveness of the separation of powers with accusations of the Executive exerting undue influence on the other branches. There have been some high-profile cases involving the Executive's interference with the judiciary's affairs. Similarly, there have been credible accusations of laws passed being unfairly influenced by the Executive.⁴⁵

Other significant challenges remain in the transparency and inclusiveness of governance at the national level, however. The country ranks 130 out of 180 on Transparency International's Corruption Perceptions Index 2017. On the World Bank's Governance Indicators for 2016, Sierra Leone scores globally among the lowest 10-20% for regulatory quality and government effectiveness, among the lowest 20-25% for rule of law and control of corruption, and among the lowest 40-45% for voice and accountability as well as political stability. On the positive side, of the six indicators mentioned, all but government effectiveness improved between 2006 and 2016.

⁴⁴ Inter-Parliamentary Union (2018) Sierra Leone: Parliament https://data.ipu.org/content/sierra-leone?chamber_id=13524

⁴⁵ Kargbo (2014) Governance and the Three Arms of Government in Sierra Leone

The Agenda for Prosperity, Sierra Leone's third poverty reduction strategy paper (PRSP), will run out in 2018. Given the recent elections, exact priorities for the new president and parliament are still too early to determine, although the SLPP's comprehensive election manifesto is used by many actors as a guiding document in the interim. A new national development plan is under preparation by the Ministry of Planning and Economic Development, in coordination with the Ministry of Finance, and expected to be in implementation by January 2019. In contrast to previous PRSPs and development plans, the focus of the new one will be longer term, extending to a 10-15 year timeframe rather than the previous five years. Discussions of inscribing the new national development plan into law are also ongoing.

Capacity within and coordination between ministries and other government bodies is limited. The capacity challenges relate both to technical as well as basic project management skills. As the largest employer in Sierra Leone, government functions are spread far and thin. In terms of coordination, unclear and overlapping mandates add to the bureaucracy and slow down progress and implementation of multiple plans. The participatory process planned for developing the new national development plan could help alleviate some of the coordination challenges, if successful.

Attempts are being made to support inclusion in development planning. As mentioned in Section 2.4.1, the Persons with Disabilities Act of 2011 is not well implemented and needs to ensure that persons with disabilities have equal access to education, employment and basic services.⁴⁶

3.3 Local Governance Structures

The Local Government Act of 2004 gives councils in Sierra Leone executive political power at the local level. Chairmen hold executive power in the 15 district councils and elected mayors in the seven city and municipal councils (Freetown, Bo, Kenema, Makeni, Koidu and Bonthe).⁴⁷ The decentralisation process, backed by several donors over the years, has given local councils more revenue raising powers (mainly around property tax and market duties) and improved service delivery. However, the process has not been fully implemented, partly due to lack of political will at the central level, as well as limited capacity at the local level. Most local council staff - such as engineers, education and health officers - are still hired, assessed and fired by central government, resulting in sometimes high and unexpected turnover at the local councils.

There is a clash between formal and traditional structures in districts and rural areas, particularly concerning land and resources due to Sierra Leone's dual land tenure system. Private ownership of land through freeholding is recognised in the Western Province, including Freetown. In all other provinces, traditional chiefs across 190 chiefdoms are seen as custodians of land, which is owned by families that has been passed down for generations.

Local government decision-making around several issues including building roads or taxing property is more complex in rural districts and relies heavily on gaining the buy-in and goodwill of the gatekeeping paramount chief. The Chieftaincy Act of 2009 has only alluded to elections and made no outline of the functions of permanent chiefs and how these relate to the functions of local government. Politically-connected paramount chiefs often bypass local councils entirely. There are often schisms between local councils and Paramount Chiefs. Women have limited participation in local decision-making. Data on female councillors in local government has not been available for the 2018 elections, but women comprised 19% of 456 councillors following the 2012 elections.⁴⁸ Each ward also has a committee where half of the ten members should be women, however whether this happens in reality is unclear.

⁴⁶ See UNFPA (2017) for a discussion on disability challenges in Sierra Leone. Available at <https://sierraleone.unfpa.org/sites/default/files/pub-pdf/Disability%20Report.pdf>

⁴⁷ Commonwealth Local Government Forum (2017) Sierra Leone country profile http://www.clgf.org.uk/default/assets/File/Country_profiles/Sierra_Leone.pdf

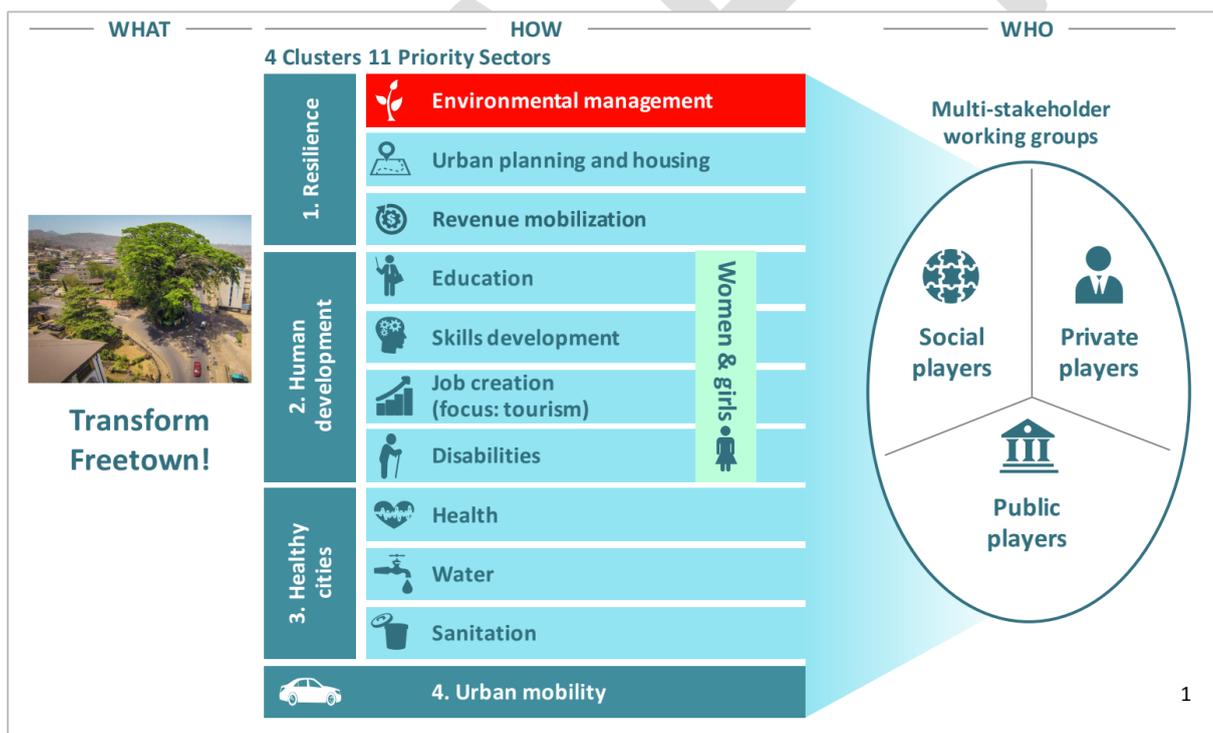
⁴⁸ Ibid

Local governments in Sierra Leone rely heavily on central government transfers of funds. While the 2004 Act gives councils the right to raise their own funding externally, in practice this is highly limited due to lack of capacity and capability, exacerbated by continued central government control over several areas of council operations. For example, corporate tax is collected at the level of central government, which then ties politics into the grants disbursed back to local councils depending on their priorities.

For example, Freetown City Council (FCC) generates only around USD \$1 per capita of its own revenue per year, well below any regional or continental peers.⁴⁹ The FCC does not employ an economist not a chartered accountant, and the only engineer and procurement officer, as well as chief administrator, report to the Ministry of Local Government and Rural Development, not the FCC.

However, the new Mayor, Yvonne Aki-Sawyerr, sworn in in May 2018, is looking at various options to gain more financial and operational independence. She has mobilised stakeholders around four key thematic clusters to come up with targeted interventions in 11 priority sectors that will form the **Freetown City Transformation Plan** (see Figure 2 below). She has set up a small delivery unit supported by external consultants from McKinsey and the Tony Blair Institute for Global Change and has an ambition to launch a municipal bond in the next four years.

Figure 2: Overview of Freetown City Transformation Plan⁵⁰



⁴⁹ Freetown City Council (2018). Transform Freetown Framework. Accessed 11 October 2018 online at: http://fcc.gov.sl/wp-content/uploads/2018/09/Transform-Freetown-Framework_160918.pdf

⁵⁰ Ibid

4. Existing Infrastructure Provision and Financing

4.1 Energy

DFID's Whole System Approach (WSA) has been deployed in analysing the energy sector for this scoping exercise. The WSA has been used to ensure that the analysis considers the complex interdependencies within the energy sector, and the pivotal role that it plays in enabling inclusive economic growth and job creation. WSA, and its application in this scoping exercise, is described further in Annex 9.2. This section presents an overview of the headline findings from this analysis.

4.1.1 Physical Infrastructure

There are no known indigenous supplies of oil, coal or natural gas in Sierra Leone. The country recently (as of September 2018) suspended its fourth licensing round for hydrocarbon exploration in five areas covering 31,653 square km of deep and ultra-deep water off Sierra Leone's coast. All fuel for thermal power plants is imported.

Generation capacity is small with less than 80MW of operational capacity (see Table 3), compared with an estimated unconstrained demand of 256MW in 2017. The main on-grid source is the 50MW hydropower station at Bumbuna which generates up to 48MW in the wet season and as low as 8MW in the dry season. There are plans for a further hydro plant on the same river known as the Bumbuna Phase 2 Project, however the project has not reached financial close. Sierra Leone has reasonable hydro (though minimal head exists which is a constraint) and solar PV resources, though minimal wind resource to develop on a commercial scale.

There is also a leased heavy fuel oil power plant on board a ship in Freetown (leased from Karpowership), the contract for which has recently been renegotiated. The new government has committed to paying for 30MW of capacity in the dry season (seven months) and 15MW in the rainy season for a two-year period with a one-year option for renewal. The government has the option to increase the power requirement to 100MW.

There is significant biomass capacity for power generation in Sierra Leone (estimated by GIZ at 2,706 GWh).⁵¹ The availability of biomass is also expected to increase as the agricultural sector expands. However, there is only one waste to power facility in Sierra Leone (Makeni) which is not currently operational for financial reasons.

Going forward, there is more than sufficient planned generation to meet demand projections and the grid is currently unable to deliver more generation to customers. The new hydro plant in the Bumbuna Phase 2 Project is now seen as the next IPP in line and it is expected to pave the way for standardised contracts and speeding future IPP deals. However, the project has experienced delays and changes to scope and is not expected to come online until 2023 at the earliest. Other IPPs in development include the 25MW Betmai run of river hydro (well advanced with government support) and the Planet Solar 50MW (competitively procured via the PPP unit).

In addition, many power users (residential, commercial and public sector) have their own generators which are used as back up or as an alternative to supplies from the utility (Electricity Distribution and Supply Authority). One source provides estimates that there are up to 33,000

⁵¹ See GIZ https://www.german-energy-solutions.de/GES/Redaktion/DE/Publikationen/Kurzinformationen/2016/fs_sierra-leone_2016-allg.pdf?__blob=publicationFile&v=3

generators providing 180MW of capacity.⁵² Such generators tend to be relatively inefficient as well as creating high levels of air pollutants and CO2 emissions.

Table 3: Generation capacity in Sierra Leone⁵³

Name*	Installed Capacity	Energy Source	Comments
Bumbuna	50MW	Hydro	Seasonal
Makeni (Addax IPP)	30MW	Biomass	Currently not operational ⁵⁴
Blackhall Road	16.5MW	Thermal	
Bo	11MW	Thermal	Currently 2MW available
Kingtom	10MW	Thermal	
Lungi	6MW	Thermal	
Kono (Koidu)	6MW	Thermal	Not operational
Goma	6MW	Hydro	
Makeni (diesel)	4.6MW	Thermal	
Lunsar	1MW	Thermal	
Magburaka	1MW	Thermal	

*Note - all plants are government owned and operated unless stated as "IPP"

Data are limited on distributed renewables. There are a number of projects supporting decentralised energy solutions such as solar mini-grids, building scale solar installations and solar street lights. The UK is the major sponsor of one of these programmes, the Rural Renewable Energy Project (2017-2020), which is developing mini-grids in rural districts (away from the CLSG line). As a result, solar street lighting has been installed in all the 14 districts of the country and different development partners have installed solar photovoltaics (PVs) in schools, hospitals, district councils and growth centres. The use of solar PV is increasing in the country. A few solar home systems are used for lighting and entertainment; some institutions are using it for water pumping and water heating.

The main transmission line above 33kV is the 161kV line that runs from Bumbuna to Freetown - which accounts for about 85% of total consumption **Error! Not a valid bookmark self-reference..** Outside of Freetown there are a few free-standing grids, for example between Bo and Kenema. The condition of such grids and their associated power plants is generally poor. However, the West Africa Power Pool line linking Côte d'Ivoire, Liberia, Sierra Leone and Guinea (known as WAPP CLSG) is under construction and should be complete in 2020. A Northern Link from Waterloo to Mange to Yiben has been financed (committed in 2016) by India's ExIm Bank,⁵⁵ which will serve to evacuate power from the planned Yiben hydropower plant (part of the Bumbuna Phase 2 Project) as well as connect to the CLSG.

The distribution network in Freetown is overstretched and outdated. Basic infrastructure elements are absent or non-functional. Delivering a fit-for-purpose distribution network is estimated to require

⁵² See Netherlands Enterprise Agency (2017) The Energy Sector in Sierra Leone <https://www.rvo.nl/sites/default/files/2018/07/sector-scan-the-energy-sector-in-sierra-leone.pdf>

⁵³ Power Sector Masterplan

⁵⁴ Biomass cultivation and bio-ethanol production stopped after the company ran into financial difficulties

⁵⁵ As of the writing of this report, the feasibility study for the link has been completed and the EPC tender is about to be launched

4.1.2 Governance and Regulation

The National Energy Policy was ratified in 2009 and recently reviewed. A JICA-funded Western Area Master Plan was also developed. The 2011 National Electricity Act unbundled the former state utility (NPA) into two separate companies - the Electricity Generation and Transmission Company (EGTC) and Electricity Distribution and Supply Authority (EDSA); regulated by the Energy and Water Regulatory Commission. In 2016, Parliament ratified the Renewable Energy Policy and Energy Efficiency Policy, as part of the commitment to the Energy Africa Policy Compact. More recently (August 2017), the Millennium Challenge Coordinating Unit (MCCU), together with the Ministry of Energy, launched the Electricity Sector Reform Roadmap 2017-2030, which builds on the JICA master plan and provides a clear and strategic approach for the future. The Ministry of Energy is now using the Roadmap (slightly revised to reflect the new government's priorities) as its basis for performance.

Critical institutions are generally weak, particularly regarding environmental and social studies and the application of safeguards. As with many countries undergoing power sector reform, the unbundled utilities are weak. With support from the World Bank, in 2016, a management agent (Khatib and Alami) was contracted to run EDSA. In general, it seems that the management contractor has been firefighting incessant problems at EDSA and has not been able to achieve a sustainable improvement in corporate or operational performance. The management contract runs until November 2019 and is unlikely to be renewed. EDSA needs to operate on a more commercial basis. The Electricity and Water Regulatory Commission (EWRC), Sierra Leone's regulator, is not yet fulfilling its role fully, particularly in tariff development.

4.1.3 Market and Commercial Operation

The energy sector requires significant investment but is not yet operating on a commercially sustainable basis, making it difficult to attract private sector capital. The financing requirement to deliver the Roadmap amounts to around USD \$1.9 billion. As a result, the annual financing requirement over the next 12 years will average USD \$158 million per year. However, the market and commercial mechanisms that would support the scale of investment are weak.

Upstream, the denomination of generation tariffs in USD but retail tariffs in Leone creates a very high exposure of electricity consumers to the rapidly devaluing local currency and forex shocks more generally. Retail tariffs do not currently reflect costs, although the (underpowered) regulator is planning the first increase in several years. EDSA is the critical institution to achieving a more viable power sector. Its financial position is weak, which in turn limits its creditworthiness and credibility as an offtaker. Similar creditworthiness issues hang over the Government's agreements to purchase power through the CLSG and any future IPPs.

However, private investment interest in generation is high. The enabling environment for IPPs is adequate as evidenced by the active engagement of many IPPs in the sector. However, this has yet to result in the completion of any new generation projects since Makeni. The sector is also not insulated from political risk - as evidenced by the recent suspension of the 57MW Salone HFO plant due to concerns about the process and transparency of the agreement signed by the previous government.

4.2. Roads & Transport

Sierra Leone's road network covers some 11,700 kilometres and is the main mode of transport, yet over half of the network is in bad condition or inaccessible during the rainy season. Few roads are all-weather and most only last one or two seasons, until dilapidated by a lack of funding and capacity for maintenance. The SLPP manifesto states as one priority to rehabilitate feeder roads linking farming communities to markets, and also to develop roads infrastructure linking neighbouring countries to Sierra Leone from all border districts.

The Trans-West African Coastal Highway is a major project linking 12 countries from Mauritania to Nigeria. In Sierra Leone, the Bo–Bandajuma and Bandujuma Mano River to Liberia sections are under rehabilitation / construction respectively. Progress is also being made on paving roads connecting district headquarter towns. Kenema-Pendembu was recently completed and Pendembu-Kailahun is under construction. Matotoka-Sefadu was segmented into two lots, both recently completed. In recent times the focus has been on rehabilitation and not maintenance. As a result, the network is in severe state of disrepair especially unpaved secondary roads which form the majority trunk road.

Sierra Leone’s 964mm narrow gauge government railway linking Freetown to Makeni and Kenema, through Bo, was decommissioned in 1974. An 84km long 1,067mm narrow gauge private railway line has been operational in recent years to transport iron ore from the Marampa mine to Port Pepel. Current thinking in the President’s Office is to re-open and extend the old railway, as well as roads around it, to improve market access for both mining and agricultural products to the natural deep-water port in Freetown, as well as to a new port planned further South.

Figure 4: Sierra Leone’s Road and Rail Network⁵⁸



Sierra Leone is connected by air with one international airport at Lungi, on the other side of an estuary from Freetown. As road transport from the airport to the capital can take up to 5 hours, it is mainly accessed by ferries, speedboats and smaller, local fishing boats. There is potential to improve existing jetties and expand water transport around Freetown to ease road congestion and mobility for people living in the eastern parts of the city, e.g. Waterloo, and working in the western parts, e.g. Aberdeen.

The previous administration was planning to build a new international airport at Mamamah, around a proposed new capital/government zone, with easier road access to Freetown. The new President has abandoned these plans, instead considering a bridge from Freetown to Lungi that could ease urban pressures and create economic opportunities near the airport. The Lungi development could

⁵⁸ WFP based on OpenStreetMap (road) and Digital Chart of the World (rail). Accessed via humanitarian data exchange <https://data.humdata.org/> and <http://diva-gis.org>

also include a special economic zone and provide a new route to market for the rice fields around Port Loko. Further pre-feasibility work is required for the bridge and where it might land in Freetown, and consideration of how the Chinese-backed project might be funded.

The World Bank Transport Strategy Study conducted for the Ministry of Transport and Aviation (MOTA) in 2012/13 identified the need for the government to establish a pro-active view on future export corridors. A study on resource corridors required some direction on the establishment of future ports and a desktop study was conducted into the preferred location for a new mineral resource extraction port in Sierra Leone. In order to determine the optimal port location a trade-off was performed between the identified locations and the transportation of selected commodities to the port facility.

A total of 22 long-listed port locations was produced and eight fatally flawed locations discarded. Further review resulted in a short list of nine locations. Based on high level considerations two locations emerged as the preferred locations namely Mama Point near Bonthe and Sulima in the extreme south east. Further work will be required to decide on the best option for the agricultural bread basket of the country and the mineral sector.

4.3 Water Resources, Water Supply & Sanitation

Sierra Leone is in the equatorial rainforest zone, with a hot and humid tropical climate. The country has a mean annual rainfall of 2,526 mm/yr, ranging from 1,900 to more than 4,000 mm/yr. There are two distinct seasons, with the dry season from December to March. Sierra Leone has twelve river basins, of which five are shared with Guinea and two with Liberia (although inflows from these countries are minimal). The most important ones, from west to east, are: the Kolente (Great Scarcies), Kaba, Rokel, Pampana (Jong), Sewa, Moa, and Mano. Internal renewable water resources are estimated at 160 km³/year. However, seasonal variations are important: only 11-17 percent of the annual discharge occurs between December and April, with minimum discharge in April. Total water withdrawal in the year 2000 was estimated to be 379.9 million m³ - which is only around 0.2% of total actual renewable water resource. Most of the water withdrawn is used for agriculture (93%), with the domestic sector accounting for around 5% and industry 2%.

Sierra Leone's irrigated land potential is estimated at 807 000 ha, which is around 12% of the country's land area.⁵⁹ At present, an estimated 30,000 ha of land is equipped for irrigation (around 5% of the cultivated area). In addition, around a quarter of the cultivated area is irrigated by flood in the inland valley swamps (IVS) areas.⁶⁰ This is where a large proportion (around one third) of rice is produced - at a significantly higher yield than other areas, so rice grown in IVS accounts for more than half of all rice production in Sierra Leone.⁶¹

Sierra Leone has made slow progress in increasing access to drinking water, and there remains a long way to go: as of 2015, only 58% of the population had access to basic drinking water.⁶² The water supply network in Freetown needs extensive rehabilitation, repair and expansion. Supply is mostly intermittent and is not reliably safe for consumption. Freetown's water supply is also in need of major expansion to meet the increasing demands of a rapidly growing city. Continued urbanisation and population increases have also resulted in encroachment on water catchment areas, affecting availability and quality of water. System losses amount to around 45% of water supplied. The imbalance between demand and supply means that a rationing programme is instituted for the entire supply area - with service hours varying from 3 to 12 hours daily. Low income communities, particularly in the East of Freetown, are the worst off whilst women and children, who bear the brunt of water collection and who suffer disproportionately from the effects

⁵⁹ FAOSTAT database <http://www.fao.org/faostat/en/#country/197>

⁶⁰ FAOSTAT database <http://www.fao.org/faostat/en/#country/197>

⁶¹ JICA (2009) National Rice Development Strategy

⁶² WHO/UNICEF Joint Monitoring Programme <https://washdata.org/>

of scarcity of supply, are the most affected. Water tariffs (6 cents per cubic meter) do not provide the basis for operational sustainability.

The Guma Valley Water Company is responsible for water in Freetown but is very much overstretched and facing major investment needs to rehabilitate the existing network and upgrade to meet future demand.

An estimated annual investment of USD \$164 million is needed for new urban and rural water supply facilities, and rehabilitation of existing facilities. Given limited public financing, the projected deficit of investment is likely to be over USD \$130 million per year.⁶³

The sanitation situation is even worse, with only 14.5% with basic sanitation and around 19% of the population practice open defecation. For sanitation the annual capital investment requirement is USD \$40 million.⁶⁴ Solid waste management is poor and a growing focus in Freetown – the current landfill sites are hazardous and at risk of collapse, posing a major hazard to manual scavengers and others engaged in informal employment activities.

4.4 Housing

Good-quality and affordable housing is in shortage across Sierra Leone. The vast majority of rural dwellers own their houses, while in urban areas the split between renters and owners is largely equal. Construction materials are basic, with over 80% of dwelling units in need of repair.⁶⁵ In urban areas, the main materials used are cement blocks for walls (47%), zinc for roofs (92%) and cement for floors (72%). The majority of rural houses are built with walls of mud bricks (55%), roofs of zinc (73%) and floors of mud (74%). Infrastructure services are limited, with only 11% of households in urban areas having piped access to drinking water indoors or in their compound, and 39% using grid power as a source for lighting. Figures in rural areas are significantly lower.

The housing challenge is most pronounced in Freetown. An influx of young people from the countryside looking for employment, combined with a lack of urban planning and land controls has led to sprawling, low-density and low-quality housing, much of it built on hazardous hillsides and lowlands prone to mudslides, flooding and fires that can wipe out entire communities. Weak waste collection capacity and a complete lack of recycling facilities have compounded the problems. Following a deadly flash flood and landslide that killed over a thousand people and displaced many more in Freetown in August 2017, several local scale initiatives to improve drainage have been undertaken, but many informal settlements are yet to be accessed by roads.

At the national and city-level, housing is mainly provided to top civil servants. In the current context, providing housing to the very poor would need to be accompanied by improvements in economic opportunities and a robust risk analysis, as they would likely rent out the housing for income and continue living in shacks. Several policies and initiatives are being prepared to address the housing situation as part of the National Development Strategy.⁶⁶

- A new housing policy is currently in preparation that for the first time is also expected to reflect the situation of informal settlements.
- The SLPP manifesto places the provision of affordable housing high on its agenda. Ambitions include access to public housing for people with disabilities, and the creation of much-needed jobs for youth through increased investments in housing.
- The new national development plan will include plans to relocate shack-dwellers from central, flood-prone and hillside areas to new settlements outside Freetown that could be better serviced and where employment could be created in the agricultural sector. A task

⁶³ World Bank (2015) Water Supply and Sanitation in Sierra Leone: An AMCOW Country Status Overview

⁶⁴ Ibid

⁶⁵ Statistics Sierra Leone (2017) Population and Housing Census 2015

⁶⁶ Discussions with Ministry of National Planning, September 2018

force has already been created to look at this housing aspect, led by the Ministry of Planning and Economic Development.

- One of the eleven sector working groups preparing the new Freetown City Transformation Plan is in urban planning and housing.

How all these plans relate and are aligned is unclear, although both the Minister of Planning and the Mayor of Freetown are placing a large emphasis on cross-organisational collaboration. Particularly in the case of relocation, housing initiatives need to be carefully implemented in collaboration with the communities affected and complemented by clear economic opportunities in new areas to be successful.

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5. Current Donor Focus

5.1 Overview

Sierra Leone receives around USD \$700m a year in official development assistance (ODA), or around 21% of GNI. Around 60% of this is bilateral aid. During the EVD crisis, Sierra Leone received significant humanitarian and recovery assistance. The UK is the biggest donor to the country, with the US, World Bank Group and the EU among the leading donors in the Organisation for Economic Cooperation and Development (OECD). As with many African countries, China is also a major investor, with an estimated USD \$630m of support provided since 2001.⁶⁷

In addition to the information on donor initiatives described in this section, Annex 9.3 provides further information on donor activity.

5.2 Urban Productivity

The **World Bank** is the key donor in the urban space in Sierra Leone, and focused on the significance of Freetown for the national economy in its latest country economic update, published in June 2018.⁶⁸ Highlighting the importance of mobility in the capital, the Bank is setting up a new USD \$20 million Freetown Integrated Urban Transport Project due to be appraised by end-October and approved by end-December 2018.⁶⁹ The project has three components: comprehensive corridor improvements (including a transport operator's terminal, improving road conditions and pedestrian ways), institutional capacity building and improvements in ferry terminals and services.

Several donors and NGOs have ramped up disaster risk reduction efforts in response to the devastating floods and mudslide in Freetown in August 2017. The World Bank's USD \$10 million Freetown Emergency Recovery Project will run from 2018 to 2021, aiming to rehabilitate select critical infrastructure and to strengthen government capacity for managing disaster risk.⁷⁰ AfDB has also started phase one of its Freetown Floods and Landslide Impact Alleviation Emergency Response project in February 2018.

Freetown City Council also benefits from embedded advisors – one from the Tony Blair Institute for Global Change and two seconded from McKinsey – in a small new delivery unit driving forward the development of the Mayor's City Transformation Plan.

More broadly in the urban space, the World Bank's USD \$12 million public financial management support project, running from 2013 to 2020, includes a component on strengthening local governance, financial management and accountability systems in local councils, as well as accountability and oversight institutions to enhance service delivery efficiency and effectiveness. In addition, the USD \$10 million Sierra Leone Land Administration Project has a local, urban component, but further detail is not yet available.⁷¹

UNDP has done work in urban areas mainly through the lenses of 1) local government and economic development (involving decentralisation support and building small-scale economic infrastructure such as local government-run guest houses as a source of revenue) and 2) youth

⁶⁷ AidData (2018) Geocoded Global Chinese Official Finance, Version 1.1.1 <https://aiddatachina.org>

⁶⁸ World Bank (2018). Sierra Leone Economic Update, June 2018: Reviving Urban Development - The Importance of Freetown for the National Economy. World Bank, Freetown. © World Bank. <https://openknowledge.worldbank.org/handle/10986/30032>

⁶⁹ For more information, see: <http://projects.worldbank.org/P164353?lang=en>

⁷⁰ For more information, see: <http://projects.worldbank.org/P166075?lang=en>

⁷¹ For more information, see: <http://projects.worldbank.org/P164945?lang=en>

empowerment and employment (involving the set-up of business development service centres for young men and women in Freetown, Newton, Bo, Kenema and Makeni).

The **EU** announced seven new local authority and civil society organisation projects in August 2018, related to governance, transparency and inclusiveness of local decision-making, particularly empowering women and girls to take part in local development decisions and processes, as well as strengthening administrative and operational capacities of local authorities. The EU is also supporting Bo with a EUR €1.6 million project on waterside road maintenance in 2016-2021.

5.3 Large Infrastructure

5.3.1 Energy

The **Millennium Challenge Corporation's** (MCC's) threshold programme has committed (since 2017) around \$44m to support the water and energy sectors to strengthen the capacity of the Electricity and Water Regulatory Commission and EDSA, build capacity at the Guma Valley Water Company and help the government to operationalise a new framework and market structure for the country's electricity sector. The expectation is that the threshold programme will lead on to a full and more valuable compact in due course (in the order of US\$300 – 400 million). MCC will typically bring in extensive technical assistance support to deliver this. The government is currently considering the MCC roadmap.

The **World Bank** financed the management contractor for EDSA as well as wider sector reform (in total \$40m) - however, the managing agent has underperformed significantly, and it appears unlikely that the contract will be renewed in November 2019.

A key energy infrastructure project is the CLSG transmission line that will run from Cote D'Ivoire to Guinea and will include 5 substations in Sierra Leone with potential for these to provide direct distribution throughout the country. **KfW**, **EIB**, **WB** and African Development Bank (AfDB) are co-financing the line which is due to be completed by 2019.

More broadly, the World Bank is providing very substantial support to the development of the West Africa Power Pool (including \$60m IDA credit for the CLSG line).

DFID is funding a £35m rural electrification programme, delivered by **UNOPS**, that is building mini-grids (away from the CLSG line), with the intention of attracting private operators to manage them – essentially delivering the Energy Africa Compact signed by GoSL. DFID is also providing grant financing for the rehabilitation of the Bo-Kenema transmission and generation facilities, which will also link to the CLSG. The total project cost is £43m, of which DFID has committed £31.5 million with the rest co-financed by the AfDB and the GoSL.

AfDB are also considering financing rural electrification opportunities along the CLSG line corridor in due course. **JICA** is also providing some support to distribution investment (and previously to the Western Area Master Plan) as is the Islamic Development Bank. Neither of these donors seems currently to be providing significant technical assistance in power though this could change. Distribution remains an area which is underserved by donors.

5.3.2 Roads and transport

Major existing projects include the Trans-West African Coastal Highway linking 12 countries from Mauritania to Nigeria. Driven by ECOWAS and NEPAD, with funding from the EU and AfDB - the Bo-Bandajuma and Bandujuma Mano River-Liberia are under rehabilitation / construction respectively. The OPEC Fund for International Development (**OFID**), Kuwait Fund for Arab Economic Development, the Arab Bank and the Saudi Fund for Economic Development are supporting the paving of roads connecting district headquarter towns: Kenema-Pendembu was recently completed and construction of Pendembu-Kailahun on-going. Matotoka-Sefadu was segmented into two lots; with Lot 1 Matotoka-Yiye completed and funded by **AfDB** and OFID. Lot

2 Yiye-Sefadu, funded by Kuwait Fund, has also been completed. **DFID** and other donors have been involved in the development of rural feeder roads to support agricultural value chains, but few are all-weather and most only last one or two seasons, until dilapidated by the lack of funding and capacity for maintenance together with heavy rain during the wet season. The programme was recently closed.

With one of their focus areas on transportation, the AfDB has been involved in a feasibility study for the Freetown to Lungi crossing undertaken several years ago, and which concluded the crossing was not viable from a user perspective (not enough traffic forecast to justify the expense). The AfDB is also involved in assessing the ports sector in Sierra Leone.

5.3.3 Water

Rehabilitation of Freetown's water supply system is the major donor priority on water supply, with **MCC** supporting operational improvement of the Guma Valley Water Company (GVWC) and **DFID** providing £38m for detailed design and construction of the main priorities identified by GVWC. The African Development Bank are supporting the development of a Master Plan for the city's water supply (around \$2.3m) which is due to commence in 2018.

AfDB are funding a three-town water supply and sanitation project in provincial capitals (\$43m) and a \$38m rural water supply programme. **DFID** also funds a £30m WASH programme that is establishing sustainable waste management services in three large towns and improving water, sanitation and hygiene services in rural areas and in two small towns. **JICA** have provided funding for post-water reconstruction efforts, including the Kambia district water supply.

5.4 Investment Facilitation

Given Sierra Leone's fiscal space is closed for the short to medium term as the new administration grapples with its debt position and significant arrears, there is limited scope for public investment in infrastructure and an increasing emphasis on attracting private investment and PPPs.

Most of the investment into Sierra Leone has been focused on the mining or energy sector. The PPP unit is an effective vehicle for driving investment projects including PPPs. It, like much of the investment into the country, has mostly been focused on IPPs (for example Bumbuna II and the Salone HFO project) and reacting to different ministries changing priorities. The energy sector has now reached a point where no more IPPs are needed in the sector and the focus should be on improving the distribution sector together with integrating and planning future transmission expansion.

The PPP unit is understood to have developed a pipeline of credible projects but one of the major blockages to progressing these to a point of bankability (i.e. feasibility study complete and project "prepared" for FDI or private sector participation) is the changing political winds and elections. With a five-year cycle, the historic track record of large-scale infrastructure projects taking significant time to development means that political interest and therefore political will either diminishes or is lost. Another blockage is the lack of readily available funding to support project preparation activities, something which targeted intervention of this CIG programme could help to address.

Outside of the mining sector, IPPs and a handful of real estate developments (such as the Hilton hotel in Freetown), there has been minimal private sector investment from beyond the multilateral development banks and facilities they sponsor. Further and regular mapping of these institutions would be helpful in avoiding any potential overlap or conflict with others programmes of investment. Some of the multilateral development banks and donor-funded facilities involved in Sierra Leone include:

- **AfDB**: co-financing of the DFID sponsored and funded Bo-Kenema transmission line, also a co-financier of the CLSG interconnector project.

- **CDC:** investment into Miro Forestry, Solon Capital (funds various development projects), Standard Chartered Bank and is also supporting several IPPs.
- **European Investment Bank:** debt financing of Bumbuna II (to be confirmed) and funder of the CLSG interconnector.
- **Finnfund:** has made several investments into agriculture / production businesses including Miro Forestry and Goldtree.
- **Islamic Development Bank:** has financed several road projects and is also supporting the power sector.
- **KfW:** co-financing of the CLSG interconnector.
- **World Bank Group:** supporting several IPPs and also investing into energy sector strengthening. Co-financing of the CLSG. interconnector. Through the **IFC**, support to investment via a risk participation facility, trade finance and an investment climate reform programme.

Other facilities, such as the Private Infrastructure Development Group (**PIDG**); their Emerging Africa Infrastructure Fund (**EAIF**) and Technical Assistance Facility (**TAF**) have also supported various private sector initiatives in Sierra Leone, mostly in the power sector to date.

Another example of investment facilitation is the Addax bioenergy facility near Makeni which was built in 2014 and included a large consortium (total costs over \$300m) of financiers including; EAIF, **FMO** (Netherlands' Development Finance Company), **AfDB**, **Swedfund**, **BIO** (Belgian Investment Company for Developing Countries), **DEG** (German Investment Corporation) and the **IFC**.

While there does not appear to be any significant conflict or overlap, there does seem to be a lack of any donor mapping that would help identify additional investment gaps or bottlenecks.

6. Bottlenecks and Barriers

6.1 Introduction

Sierra Leone is at a critical point, with a forthcoming national development plan at the end of 2017 that will set out the country's growth pathway and priorities for the medium to long-term. This is a time of opportunity and CIG is well-placed to support at critical junctions. Given the nascent stage of government plans and the need to ensure alignment and country ownership, CIG will need to work alongside government and other national stakeholders to co-ordinate its interventions and ensure that they are well-grounded in the realities and current political-economy of Sierra Leone.

The key growth sectors for Sierra Leone's economy are likely to include agriculture; fisheries; and tourism, with mining playing a role as a source of government revenue. The growth poles concept outlined in previous years seems to be enjoying a revival and indications are that the government will concentrate on two principal growth poles: The Eastern Economic Cluster and the Lungi-Freetown area.

6.2 Political and Macro-economic Barriers

Fiscal space is essentially closed, meaning that significant public investment in infrastructure is not likely to be forthcoming. Revenue mobilisation is therefore key - both through increasing domestic revenues, but also through creative approaches to private finance and foreign investment. The full range of financial instruments and sources will need to be used to maximise the value of public funds and leverage grant and concessional money to attract private investment. The small size of the economy means that financial sector liquidity is constrained, and a small and poorly defined set of project opportunities and development processes has limited foreign investment.

The Bank of Sierra Leone appears to have taken strong steps to secure the economy and restructure existing debt. The International Monetary Fund (IMF) mission currently in Freetown will be assisting this process. The continued depreciation of the Leone following the collapse of the iron ore industry is a major ongoing concern. Similarly, global commodity volatility will also hit growth, until the economy can diversify beyond a narrow set of sectors.

Politically, Sierra Leone has good potential, with new national government with a strong developmental state approach. Despite being from the opposition APC, the dynamic Mayor of Freetown has so far succeeded in crossing party lines and appealing to a broader sense of citizenship. This will be increasingly tested as her plans take shape and her political influence grows.

The vision and ambition of the new government is evident - but implementation challenges still remain. Prioritisation of initiatives will be critical to focussing limited resources, and a strong central co-ordination role will be needed to make the most of delivery capacity in Ministries.

6.3 Urban Sector Barriers and Bottlenecks

Despite a high concentration of people and firms, both formal and informal, Freetown is not benefitting from urban agglomeration. The major barrier to urban productivity relates to the inefficient use of land, most of which is occupied by low-density, unplanned informal settlements. Detailed information on the profile of informal settlements inhabitants is not widely available. While mapping has been done on land and existing properties in Freetown, this has not been linked to ownership. A key challenge and first step to unlocking the economic potential of the housing and land market in Freetown is developing a cadastre, alongside better land use planning.

The capital's urban transport system suffers from an inefficient road network, delayed road maintenance, and limited pedestrian ways. Only 5% of land in Freetown is dedicated to roads, of which only 24% are paved, compared with regional benchmarks of 10% and 50%, respectively.⁷² There is virtually no public transport in Freetown, with journeys mainly made by minibuses (podapoda), three-wheel motorcycles / tuk-tuks (keke), motorcycles (okada) and shared taxis, contributing to traffic congestion. Combined, these factors are constraining mobility of both people and goods, and their respective access to work and markets – particularly for people with disabilities. For people with disabilities, basic mobility around the city is challenging with poor paving and inaccessible buildings, often lacking elevators. This also generates major road safety issues, road traffic accidents accounted for 2.25% of total deaths in Sierra Leone. Several studies have been undertaken on integrated urban transport across the country generally and for Greater Freetown specifically, but not implemented due to an apparent lack of interest.

Insufficient piped water and waste/storm water drainage further contribute to challenges in public health (particularly for marginalised groups, including women and girls), and thereby in firm and labour productivity. Solid waste is also a major challenge for sanitation, housing conditions and economic opportunities. Only 27% of waste is collected in Freetown, while the main collection sites have been beyond capacity for years, particularly in Kissy. Weak waste collection capacity and lack of recycling facilities⁷³ affect the quality of life for the urban population, the attractiveness of Freetown and its beaches as a tourist destination, and the quality of the fishing industry in its surrounding waters.

Limited budgets and leakages, institutional inertia in some public bodies, and to a lesser extent capacity, have stalled progress in several areas of urban infrastructure development. Current capacity and mechanisms for local government own revenue mobilisation are insufficient to make a dent in local finances. Outside Freetown, chiefdoms also collect local revenue, hampering the ability of local governments to budget for service delivery. Improving Freetown's, and other secondary cities' urban finance capabilities could help address barriers to urban productivity at the local level better.

Bottlenecks to urban productivity outside Freetown relate to weak rural-urban linkages. Surrounded by subsistence smallholder farmers, secondary cities like Bo, Kenema and Makeni have not been able to build stronger agricultural value chains, in part due to the low commercialisation of agricultural activities, and in part due to weak market infrastructure (both in terms of roads for transport and energy for cold chain and processing). Improving the market infrastructure could build the economy in secondary towns and provide employment opportunities outside Freetown, relieving pressure on the capital city.

6.4 Infrastructure

6.4.1 Energy

Overall, the MCC-funded Roadmap (see Section 5.3) sets out a viable and practical pathway to address the supply side and transmission issues set out earlier. The government is still considering the roadmap and whether it will be delivered remains to be seen. A key element is the financial viability of the sector as a whole - a financial sustainability plan has been developed, but urgently needs to be implemented.

In 2015, around 30% of the urban population had access to electricity and it is estimated that around 40,000 new households will need to be connected each year to meet the electricity access objectives (66% by 2020 rising to 99% by 2030). EDSA's performance in this regard is just over half that number. Of the rural population, 13% has access to electricity – meeting rural electricity

⁷² World Bank (2018) Sierra Leone Economic Update

⁷³ A pilot is currently being set up in Freetown that seeks to collect and monetise plastics recycling, supported by a grant from Sensi Tech Hub.

access objectives (20% by 2020 and 85% by 2030) will necessitate the provision of power to around 15,000 new rural households per year.⁷⁴ The Energy Africa Compact addresses issues access to energy, mainly implemented through the DFID-funded UNOPS-delivered mini-grids programme. Industrial demand is largely in the mining sector, who provide their own power rather than depend on the grid – this has largely been internalised into operational costs and is not seen as the major constraint on growth in the sector. Under the Power Sector Roadmap, the GoSL is encouraging these companies to move away from self-generation to make the power sector more attractive for private investment – which will require some careful sequencing.

EDSA remains in a weak position and the appointment of a management contractor in 2016 does not seem to be significantly improving the situation. Power infrastructure in Freetown is mostly in a poor condition and there is a substantial backlog (although several financial commitments) of both replacement investment and investment to cater for growing demand and customer numbers. Financial sustainability of the sector is unachievable without a major change of course. This will involve changes to retail tariffs as well as reductions in technical losses and improvements in collections against amounts invoiced. Critically, EDSA needs to think beyond government-financing and grant financing of infrastructure so that it can find more creative and long-term ways of financing - with the ultimate aim of using its own balance sheet and revenues to finance long-term operations and investment. A critical barrier to EDSA's viability is the scale of distribution losses - both technical and non-technical (e.g. non-payment, theft). Whilst there are some straightforward management changes that can address some losses - resolving distribution losses is often a political problem, particularly where parties have benefited from corrupt or illicit access to power.

The Karpowership agreement can supply all the short-term generation that the network can absorb. It can then provide marginal capacity until Bumbuna Phase 2 Project is complete and/or other planned generation comes online such as Planet Solar and Betmai Hydro. In light of this, generation is not seen as a critical problem for the sector - instead transmission and particularly distribution are the main bottlenecks for economic growth and sector sustainability.

In terms of transmission, the development of the CLSG line will give the country access to power from elsewhere in West Africa. However, Sierra Leone may not be in a good position to take power from CLSG once it is in place. The current network would not be able to handle the additional supply from CLSG, which does not pass close to Freetown. The Northern Link financed by the Indian ExIm bank is a critical component to the grid expansion and will make utilising the CLSG more viable once complete (it will also evacuate power from Bumbuna Phase 2 Project). Sequencing of these projects will be key. Finally, although Sierra Leone has signed agreements to buy from its neighbours over CLSG (27MW from Côte d'Ivoire), the lack of financial viability in the sector undermines the credibility of this.

More generally, cost of and access to power are binding constraints for economic development and growth. Power costs remain very high in regional terms, and the lack of grid access (both transmission and distribution infrastructure) for large parts of the country creates significant barriers to the productive use of energy. For example, the Southern belt of the country, where the majority of agricultural land is found, as well as rutile and bauxite mines, is not currently served by the grid - which increases operational costs and constrains growth (e.g. due to lack of cold chain capacity and ability to get product to market). There is a proposal for a Southern Link, but this is not yet developed and far from being financed.

Businesses are forced to rely on expensive and inefficient diesel generation and there are high social and environmental costs.

The lack of distribution infrastructure and weak commercial management practices also impact on the financial viability of the sector. These are compounded by an inefficient tariff structure, whereby generation costs are denominated in USD while retail tariffs are set in Leone. Given high levels of

⁷⁴ Sierra Leone Power Sector Roadmap

inflation and depreciation of the currency, this impacts on the financial credibility of the system, and requires significant and increasing levels of subsidy.

Looking longer term, if the sector can be more financially credible, Sierra Leone can also import power from Guinea's 515MW Souapiti hydropower project currently under construction and potentially Liberia, if the Mount Coffee hydro scheme has an exportable surplus. However, Sierra Leone has concerns about security of supply and wants to avoid becoming excessively dependent on imported power. Hydro projects in neighbouring countries are likely to produce power far more cheaply than for example new thermal power plants and can provide more secure supply in the short term. In the longer term, there is huge scope for West Africa to develop as a regional market for power and Sierra Leone may be able to shift to become a power trader, both buying and selling power within the regional power pool and interdependent with other ECOWAS countries in having a stake in the success of that market. This is particularly important given the relatively small size of the market but would require robust physical transmission infrastructure and the institutional capacity around WAPP to design and implement trading arrangements.

6.4.2 Roads and transport

Several coordination, transparency and capacity challenges exist in the institutional setup of road management. The Sierra Leone Roads Authority (SLRA) sits under the Ministry of Works and is tasked with the construction and maintenance of the road network, mainly implemented through foreign contractors. The Integrated Transport Policy, Strategy and Investment Plan of 2013 is intended to guide the development of the sector, although implementation is lagging. SLRA is due to have prepared a new five-year strategic plan, but evidence of a full strategy remains to be seen. The strategic direction provided by the Ministry of Works appears somewhat misguided, with a seemingly greater focus on improving traffic flow in the more prosperous western part of Freetown, through plans for flyovers and bridges, than on the country's broader road network.

The Sierra Leone Road Safety Authority (SLRSA) collects driving licence and vehicle registration fees, and is meant to disburse any revenue, minus administration costs, to the Road Maintenance Fund Administration (RMFA), which reports to the Ministry of Finance. A lack of an integrated database at the SLRSA makes both revenue tracking and forecasting challenging.

The RMFA, set up with World Bank support as an accountability mechanism, evaluates requests for funding from the SLRA and local governments for road maintenance projects. However, the RMFA has been increasingly drawn into road rehabilitation projects, diverting attention from much needed maintenance. Many road construction and rehabilitation projects have been unsustainable, as without funding for maintenance incorporated into their work plans and budgets, most roads fall into disrepair within a season or two.

6.4.3 Water supply and sanitation

Utility capacity is improving but remains low in relation to the scale of the challenge. After long-term support from DFID and MCC, the Guma Valley Water Company is making solid inroads in improving its management, planning and financial performance. However, the scale of the investment needed is huge and the density of Freetown creates challenges.

The rehabilitation of the Freetown water system is currently underfunded. DFID's considerable injection of capital for rehabilitating Freetown's water supply is insufficient given the scale of the financial needs. AfDB's masterplan project will help clarify this investment need, but filling the gap will be a major challenge.

Water is not seen as an attractive investment sector. In contrast to the power sector, there is limited interest in private investment in water supply. Given limited public funds (from domestic sources and international aid), the sector will continue to face a yawning chasm in its funding. The recent success of the Kigali bulk water PPP in Rwanda could be informative in solving this

conundrum and CIG might explore whether there is the potential to build a pipeline of water PPP projects, aligned with work DFID is already doing in the WATSAN sector.

6.5 Investment Barriers

There are several bottlenecks associated with investment into Sierra Leone, which are not uncommon in other countries across Africa and primarily centre around the risk of working with a government inexperienced in private sector engagement. This normally results in investors requiring certain guarantees (normally sponsored by the World Bank or another multilateral) and binding documents that protect them from changes in law, with such documents taking time to develop, negotiate and agree.

The general business facilitation environment is slow and cumbersome and despite the support from SLIEPA takes time to navigate and follow through. Government capacity is generally regarded as being poor and inexperienced which also hinders the investment process.

Private investors will normally (as in the case for most non-Chinese infrastructure investment to date) look to the support of donors when it comes to making investments or raising debt finance and donor processes are often slow and restricted (in the case of the AfDB and others) by country headroom limits and administrative formalities.

Rather than having a standard approach, investors often have to negotiate on a project by project basis certain commercial terms for entry, such as tax arrangements and foreign currency transfers. This also takes time, including the time and resource of the ministry of finance in particular to negotiate for each project.

6.6 Social and Environmental Barriers

6.6.1 Social Barriers

There is good policy and regulation in place regarding social and environmental issues. However, capacity in government for social assessment and safeguarding is limited - with a heavy dependence on external consultants. In terms of safeguards, there is a need for a more robust system for integrated assessment of environmental and social risk and opportunities throughout the lifespan of projects. As highlighted throughout this report, there are several areas of potential risk and opportunity that need to be addressed, particularly with regards to:

- Gender-based violence
- Women's economic empowerment
- Distributional equity between Freetown and the provinces
- Resettlement issues relating to housing and urban productivity
- Respecting local customary rights and their interaction with formal systems - particularly relating to land.

6.6.2 Environmental Barriers

Climate change has not been adequately integrated into national planning or management of critical economic sectors. Agriculture is particularly at risk. Increased temperatures will affect temperature sensitive crops (such as coffee) through quality, yields and viability. Shorter rainy seasons and growing seasons, combined with increased dry periods will reduce viable growing areas, affect yields and increase uncertainty in an already challenging sector. Ocean acidification is a poorly quantified risk, but would drastically affect already stressed fish stocks and the nascent fisheries sector.

Critical infrastructure is at significant risk from climate change. Changing climate will shift demand and stress already stretched water and energy supplies. Increased temperatures will increase demand for power (for cooling) and longer dry spells will reduce supply for water (as dramatically experienced by Freetown in 2016).

More intense extreme rainfall events will increase the risks of flooding and landslides within Freetown and other cities and further increase the need for all-weather roads between cities and in rural areas. Rising sea levels and more intense of frequent cyclones or storm surges could damage coastal infrastructure and potential contribute to saline intrusion, affecting agricultural yields.

6.7 International Context Barriers

Sierra Leone's undiversified economy continues to be highly exposed to forex and commodity price shocks. An analysis of the global financial crisis of 2008 estimated that this caused a fall in export earnings of 15% for Sierra Leone, which increased poverty by 12% (equivalent to around 600,000 people).⁷⁵ Rising trade tensions, driven by aggressive US policy stance, risk the global recovery and threaten to disrupt stability and shift global demand.

Sierra Leone's currency continues to fall against a strengthening dollar. Increased global uncertainty has led to swings in currency value, which have significant impacts on Sierra Leone, given its trade imbalance.

The tourism industry has just been dealt a significant blow with the recent announcement that KLM will cease flying to Freetown. It is not yet clear if another airline will occupy the KLM slot, but the already limited schedule will lose a link to Europe.

⁷⁵ Weeks, J. (2009) The impact of the global financial crisis on the economy of Sierra Leone. UNDP.

7. Opportunities for CIG

7.1 CIG Portfolio

The above analysis indicates that an integrated solution is needed to transform the conditions in Sierra Leone for inclusive and sustainable economic growth. CIG can take a joined-up yet flexible approach to deliver improved infrastructure, urban productivity and associated investment in Sierra Leone. To do this, the programme can intervene to improve the policy and regulatory environment, the public sector's delivery capacity and develop a set of bankable projects.

7.1.1 Objectives and Scope

There are a wide range of entry points for CIG, which will require an integrated approach that draws on all three CIG pillars and uses a range of TA approaches. The options outlined below provide a menu of choices, based on a combination of the sector needs identified and the political priorities expressed by key stakeholders. These options can be chosen and packaged in a variety of ways to target specific areas of growth.

In every case, there has been consideration of climate and environment and gender, disability and inclusion as cross-cutting policy priorities for DFID, even where not made explicit. Annex 9.1 provides further information on the key criteria used to select CIG interventions and includes an Appraisal Framework for the assessment of options against such criteria.

The overall focus of the proposed CIG portfolio of interventions is to move Sierra Leone towards the ability to deliver bankable projects that support economic development - with a focus on two or three presidential priorities. These would be delivered using Sierra Leonean resources and contractors as much as possible - hooked to a strategic and central part of government. Ideally, this would prepare the ground for investment from private sources and infrastructure funds, such as EIAF.

There are multiple options in choosing a principle government counterpart, however given the cross-cutting and multi-sector nature of many of the challenges, and the political prioritisation given, the CIG counterpart needs to be a strong central body with the power and influence to co-ordinate multiple other government actors. Depending on the configuration of options, there are several good institutional partners where CIG would be actively welcomed:

- *The Office of the President (State House)* - in particular, the Economic Management Team (a sub-committee of Council). The PPP Unit will be under this group; and the President's Initiative on Infrastructure. The two sections are well co-ordinated and both have requested CIG intervention.
- *The Mayor's Office (Freetown City Council)* - During this scoping, the Mayor of Freetown expressed her support for working with DFID on interventions relevant to a potential CIG portfolio.
- *The Ministry of National Planning* - MoNP has specifically asked for support in developing options for housing as well as wider national development planning.

7.1.2 Characteristics

In response to the bottleneck and barriers identified, there are characteristics and key themes that CIG could target as set out below.

- **Urban Productivity:** *Strengthening infrastructure and economic planning in Freetown and selected intra-urban economic growth clusters.* Supporting the Mayor of Freetown in

delivering the transformation plan alongside support to selected regional growth clusters (Freetown-Lungi and Eastern Economic Cluster) with a focus on enhanced planning capacity building bankable project pipelines

- **Energy: Improving power distribution and commercial viability:** Supporting projects that help connect areas of economic growth to planned investments in new capacity and transmission by facilitating expansion of distribution networks where there is potential for economic growth, and supporting the commercial viability of distribution networks to help reduce power prices.
- **Investment: Finance mobilisation.** Supporting the development (e.g. feasibility studies) and financial structuring of potential bankable projects across a range of strategic priorities (e.g. ports, storage, transport, energy) that might unlock growth in key economic sectors (e.g. agriculture, fisheries, industry). Engaging on wider financing and fund-raising capacity at national and sub-national level.

7.1.3 Key safeguards issues

All CIG interventions need to have an integrated assessment of the environmental and social risks and opportunities – at the design stage and throughout the project lifetime. This needs to ensure and strengthen community engagement and information as well as transparency. IFC Performance Standard 1 on risk management specifies this in more detail. This is also an area where CIG could support GoSL to improve its performance.

Several social inclusion and environmental issues have been highlighted throughout the report.

- **Labour and Working Conditions (IFC PS2):** Any interventions involving employment (including construction) need to respect collective bargaining and employment rights.
- **Community Health, Safety, and Security (IFC PS4):** The infrastructure and construction industry is male-dominated, which presents risks of gender-based violence, which must be managed in any interventions. Many of the interventions outlined below present opportunities to improve health, safety and security – and those affected should be properly consulted, informed and engaged in the process.
- **Land Acquisition and Involuntary Resettlement (IFC PS5):** The housing proposals are a particular risk – as they are likely to involve resettlement. Sierra Leone has clear provisions regarding resettlement action plans, and any CIG intervention must ensure that these procedures are followed, including regarding compensation and community consultation.
- **Indigenous Peoples (IFC PS7):** In the context of Sierra Leone, local customary rights must be respected and interventions that are likely to involve these rights need to properly assess and manage this engagement. There are also risks of corruption related to customary rights and local level power imbalances. Any interventions affecting indigenous land will need to ensure Free Prior and Informed Consent so that their right to self-determination is not impinged upon.

In addition, CIG interventions should assess and target any opportunities to contribute to empowerment of women and excluded groups; as well as how they may potentially create the enabling conditions for transforming social and cultural norms around gender and inclusion. This may not necessarily be explicit – for example, certain types of job creation can create more opportunities for women, but if not carefully considered can reinforce social norms.

7.2 Linkages between Key Intervention Areas

Several of the intervention options identified under each of CIG's pillars could be combined into a package of integrated interventions where there are common areas of sectoral focus. One CIG theme could serve as the 'anchor', but the package could integrate interventions from each of CIG's different themes (urban productivity; energy; investment facilitation). This would provide a more coherent framing for the selected interventions, that would be explicitly linked to government priorities and would also find receptive government counterparts. Other donors may also be interested in co-investing or supporting these interventions from a thematic perspective.

7.3 Thematic Area - Urban Productivity

CIG can increase urban productivity through support to Freetown's leadership and specifically, the Freetown City Transformation Plan. It is also important to provide support to the urban growth corridors that will place both Freetown and the secondary cities as productive urban centres. To this end, there are certain strategic projects which would benefit from CIG support at critical points, as well as overarching support to the governance, planning and delivery mechanisms. Within each there are opportunities to increase long term productivity through improved inclusivity and sustainability of urban investment.

7.3.1 Support to development planning of Freetown

The Mayor's Freetown Transformation Plan is a clear entry point for CIG and the Mayor has explicitly welcomed support. Many other development partners are contributing (including DFID Sierra Leone), so it will be important for CIG to co-ordinate and focus on critical gaps – namely, regarding environmental management; land-use planning and revenue mobilisation sectors.

Key Barrier or Bottleneck: Lack of capacity to undertake economic and infrastructure development planning in Freetown and challenges of developing associated project pipelines		
Overarching Objective: Build capacity around economic development and infrastructure planning and support sustainable finance to improve economic performance of Freetown, resulting in a strong project pipeline.		
DFID Additionality: DFID SL already active in supporting Freetown Transformation Plan - doing waste management through the sanitation component. CIG additionality could be through urban planning and finance; water and climate/environment		
Potential Intervention Areas	Intervention Area Rationale	Possible Implementation Partners
U1. Support development of land use plan for Freetown and build associated capacity	Freetown lacks a fully developed land use plan and city level institutions would benefit from capacity to formulate and manage this process. Governance remains an issue with permits often issued to build in reserved or unsafe areas	Freetown City Council World Bank SLURC TBI
U2: Develop housing and urban renewal concept into roadmap and project pipeline of projects	Government plans to renew the centre of Freetown by relocating slum dwellers to quality housing to release land value. This needs an integrated housing, transport and jobs programme to ensure this is an inclusive and just process. Road map needs to be consistent with urban economic development plan.	Ministry of Planning Freetown City Council

U3: Build Freetown's urban finance capabilities	Freetown City Council looks to mobilise own revenue to address its significant infrastructure gaps and implement its ambitious development plans. To speed up activities and reduce reliance on central government budget transfers, the city will need to enhance its creditworthiness and urban finance capabilities, including land value capture.	Freetown City Council Bank of Sierra Leone Ministry of Finance World Bank
U4: Reduce disaster risk in Freetown through strengthening environmental management and land-use planning	Improving land-use planning and management of waste will reduce disaster risk.	Freetown City Council CARE international (disaster risk reduction) Hull Council (twinned with Freetown and already collaborating)

7.3.2 Support to planning around key intra-urban economic growth corridors

The Presidential Infrastructure Initiative and National Development Plan provides another entry point for CI. The concepts and macro-economic ideas are sound, but require further analysis and master planning to determine their feasibility and develop a bankable pipeline of projects. The President's Office have explicitly asked for DFID support in this area – this will require further iteration and co-design to ensure that any intervention is well-grounded and owned by GoSL.

Key Barrier or Bottleneck: Lack of capacity for planning around key economic corridors and challenges of developing associated project pipelines		
Overarching Objective: Build capacity around economic development and infrastructure planning and support sustainable finance to develop key growth corridors, resulting in a strong project pipeline.		
DFID Additionality: TBI are the main other development partner working in this space, supporting the development of bankable projects. There are no leading development partners currently working to develop these concepts – although it seems likely that the World Bank will express interest. DFID is well placed to provide this strategic support.		
Potential Intervention Areas	Intervention Area Rationale	Possible Implementation Partners
U5: Develop Lungi expansion concept into pipeline of projects	Government has an ambition to connect Lungi to Freetown as an outlet for growth. This concept needs to be further developed, feasibility assessed (alternative expansion options to a crossing) and turned into a viable pipeline of projects.	State House (President's Office – driving the concept) China (funding offered at FOCAC)
U6: Masterplan for overall Eastern economic cluster concept and project identification	The economic cluster only exists as a concept and needs feasibility and analytical work to develop further. This would aim to generate a viable and prioritised pipeline of projects	President's Office Ministry of Trade and Industry PPP Unit PIDG (InfraCo Africa / TAF)

7.4 Thematic Area – Energy

Following the World Bank sector support programme, MCC is leading critical work to transform the power sector and given the size of their potential future commitment, there seems to be limited comparative advantage in DFID intervening on the supply side through CIG. This is for three reasons. Firstly, it is already a relatively crowded space. Secondly, DFID is already engaged both on financing transmission and off grid through two dedicated programmes; this engagement is aligned with DFID’s comparative advantage and gives DFID a route for engaging in policy dialogue. CIG involvement in power should be targeted at specific gaps and linked to economic growth – principally in how energy is used to generate growth in key sectors.

<p>Key Barrier or Bottleneck: Lack of Limited distribution network constrains economic opportunities for productive use of energy, and high levels of technical and economic losses reduce commercial capacity of ESDA to invest in network efficiency and scale.</p>		
<p>Overarching Objective: To improve access to power for productive uses through enhanced distribution networks, off-grid solutions and improved commercial viability.</p>		
<p>DFID Additionality: MCC is leading on supply and transmission and likely to expand considerably. World Bank and AfDB are active and DFID SL is already funding off-grid and some transmission (Bo-Kenema). However, CIG could focus on the demand side (on-grid distribution and off-grid productive uses to minimise overlap with other donors.</p>		
Potential Intervention Areas	Intervention Area Rationale	Possible Implementation Partners
E1: Support to ESDA (for example increase ESDA’s commercial viability by reducing economic losses).	ESDA management contract is likely to conclude in 2019. There are opportunities potentially to assist ESDA going forward. One opportunity would be to focus on the commercial performance of ESDA by conducting initiatives to achieve loss reduction. This could take the form of supporting ESDA to look and loss reduction projects in one or two identified distribution zones in Freetown. Other opportunities may arise depending on the new management structure adopted.	ESDA Khatib and Alami (or replacement) World Bank Other DFIs (in terms of concessional finance) Private sector (via tender)
E2: Explore options for increasing energy distribution to support growth in critical economic zones	Growth centres may suffer from unreliable provision of power, which can impact upon industrial growth. A number of options might be available. Distribution networks from CLSG substations could be developed where this is practical. Other distribution models (e.g. biomass based mini-grids based around larger agri-processing facilities) might also be possible. Assess relative costs and benefits of meeting productive needs for economic development.	ESDA City councils Ministry of Agriculture Agri-processing companies Private sector developers (e.g. Husk Power) AdDevCo UNOPS
E3: Southern transmission line feasibility, sequencing, and bankability	The proposed Southern Link transmission line could bring access to electricity along the southern agricultural belt, which also houses rutile and bauxite mining. However, the project has not been developed through	Ministry of Energy EGTC Mining companies Other DFIs PIDG (TAF) NEPAD

	feasibility to bankability. It will need to be carefully sequenced with other developments.	
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7.5 Thematic Area – Investment

The PPP Unit in the President’s Office is another entry point for CIG, with clear interest and demand for DFID support. This would focus on developing the feasibility and bankability of infrastructure projects through a combination of increasing the quality and breadth of feasibility studies and through creative financial structuring.

Key Barrier or Bottleneck: Limited availability of bankable infrastructure and economic development projects and challenges in accessing long term finance which in turn constrain growth in priority sectors (agriculture, fisheries, tourism).		
Overarching Objective: Improve range of bankable projects attractive to public and private investors that deliver key components of GOSL/Freetown infrastructure and economic development planning.		
DFID Additionality: Increase number of bankable projects available for private sector investment, and work to leverage the support to these initiatives from catalytic or enabling facilities such as TAF, PPIAF, AgDevCo and the AfDB’s Infrastructure Project Preparation Facility. Some of this may also include the funding of pilot projects or initial seed capital to attract private sector investment. TBI is working in this space, so co-ordination will be key – but there is plenty of need, so DFID would not be overlapping.		
Potential Intervention Areas	Intervention Area Rationale	Possible Implementation Partners
I1: Create bankable infrastructure and economic development projects and support marketing to public or private sector investors (via a competitively procured process). Examples are provided below.	There is a lack of either prepared or bankable projects for investment to help develop key sectors. Use TA to create a pool of these aligned with enhanced national or Freetown development plans.	PPP unit (through the President’s Office), Relevant sector Ministries, TAF (to provide funding for feasibility studies and related work) AgDevCo – assist with design and encouraging private sector. Investment funds (Meridiam, ARCH) and InfraCo Africa
I2: Develop an agricultural business park (or parks) outside Freetown to be privately managed	Create business parks with full infrastructure support for businesses to operate, TA would prepare these for tendering to private sector investors including feasibilities study.	PPP unit – to support preparation Ministry of Agriculture – to help select locations and overall scope TAF – to potentially provide additional funding / support private sector
I3: Explore development of bankable project for Freetown water supply	Developing the financial structure and blended finance to leverage investment. This could draw on PIDG and the Kigali experience	Guma Valley Water Company AfDB

<p>I4: Developing a project for harbour facilities to support Fisheries expansion near Freetown</p>	<p>Technical appraisal and feasibility work to identify a suitable harbour site and develop a bankable project. This would also contribute to Freetown's transformation.</p>	<p>World Bank</p>
<p>I5: Provide technical appraisal and feasibility work for fisheries processing zone/SEZ in Freetown</p>	<p>Technical appraisal and feasibility work to identify a suitable processing site and develop a bankable project near Freetown</p>	<p>World Bank Ministry of Fisheries President's Office</p>
<p>I6: Explore opportunities to develop Sulima - Southern Port and Transport investment projects as part of Eastern Economic Corridor</p>	<p>Proposals for a port in Sulima, integrated with railroad have not been developed into bankable projects.</p>	<p>President's Office Ministry of Transport AFDB (port master plan - although progress has stalled)</p>
<p>I7: Support the development of Koindu International Market as part of Eastern Economic Cluster</p>	<p>Ambitions for revitalising the Koindu international market are not yet advanced. Quality feasibility studies are needed. If feasible and developed further, Koindu could act as a demonstration project for building agricultural value chains and job opportunities in other secondary cities in Sierra Leone.</p>	<p>Ministry of Trade and Industry Koindu City Council AfDB</p>

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9. Annex

9.1 Appraisal Framework

The appraisal framework is a subjective assessment of the proposed options for CIG interventions. Colouring was used to indicate the score, whereby green stands for a high score or high probability, orange for medium and a red would indicate a very low score/probability. The following criteria were used for assessing each intervention:

- **Time.** Will the intervention and its associated potential outcomes be realisable within the CIG timeframe
- **Value for money.** Does the intervention stand to deliver significant benefits relative to its cost?
- **Potential to leverage private sector investment.** Does the intervention have a high probability to leverage private sector investment or will unblock barriers for DFID's development capital disbursed through CDC, PIDG and other facilities?
- **Leverage development partners/others.** Are there good opportunities to partner with other donors to potentially achieve economies of scale?
- **Gender, disability and inclusion.** Does the intervention offer opportunity for transformational change on gender, disability and inclusion?⁷⁶
- **Systemic/policy/structural impact.** Does the intervention address systemic constraints and not only alleviate symptoms?
- **Impact on growth/jobs.** Potential of the intervention to directly create jobs or impact on productivity and growth, including jobs for and productivity of youth, women and the poorest?
- **Climate and environment.** Potential contribution to climate resilience, low carbon growth, natural resource management, environmental health and disaster risk **reduction.**
- **Political economy/risk.** Are positive outcomes possible within the existing political economy constraints? A red marker for political risks implies the need for a full political risk assessment at design stage.

⁷⁶ Note that at a minimum, interventions must meet the legal requirement under the Gender Equality Act 2014 (International Development Act). They should also aim to maximise Gender and Inclusion opportunities and minimise risks. For example, this would include seeking opportunities to increase access to jobs, productivity, assets, skills and where possible seek more transformative outcomes

Appraisal Summary of Proposed CIG Sierra Leone Intervention Areas

1	2	3	4	5	6	7	8	9	10	11	12
#	Title	Time	Value for money	Leverage private sector	Leverage development partners	Gender, disability and inclusion	Systemic /policy structural impact	Impact on growth and jobs	Climate and Environment	Political economy risks	DFID additionality
U1	Freetown land use plan										
U2	Freetown housing plan										
U3	Freetown urban finance										
U4	Environmental planning										
U5	Lungi Expansion plan										
U6	Masterplan for EEC										
E1	EDSA loss reduction										
E2	Enhanced distribution										
E3	Southern link										
I1	Bankable infra projects										
I2	Agricultural business park										
I3	Freetown Water supply										
I4	Freetown harbour facilities										
I5	FisheriesW processing zone										
I6	Sulima Port										
I7	Koindu International Market										

9.2 Whole System Approach (WSA) to Energy

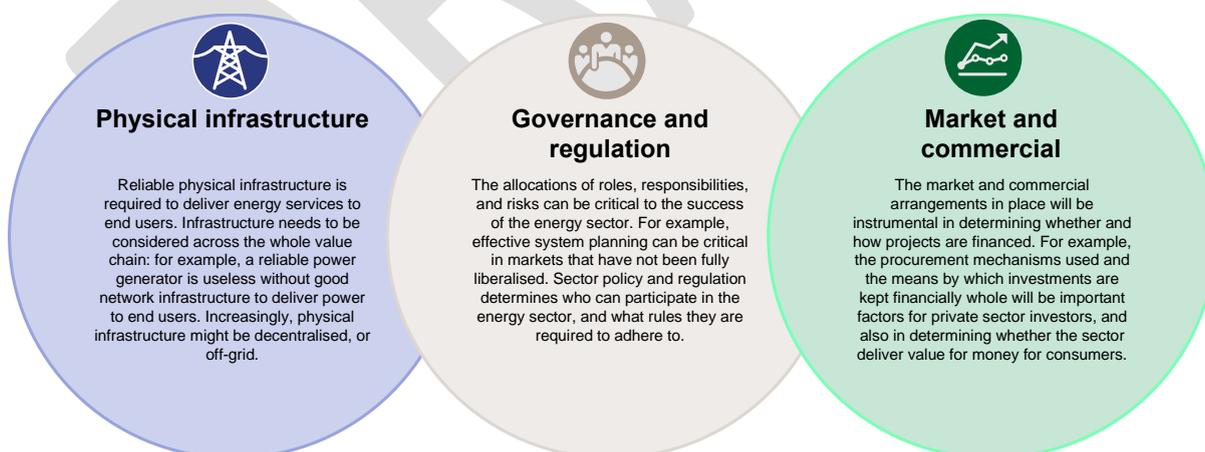
DFID’s Whole System Approach (WSA)⁷⁷ has been used in analysing and identifying barriers and potential interventions in the energy sector. The WSA has been developed by DFID to ensure that the full complexities and interdependencies between different issues in the energy sector are considered when analysing the sector. DFID’s definition of the WSA is presented below:

To achieve economic development, universal energy access and climate sustainability it is essential that the complex interdependencies within the energy sector, and in the pivotal role it plays across all industries, are considered in full rather than in isolation. **This is the Whole System Approach (WSA).** The WSA is the vehicle used to support DFID and its role in assisting national governments to reach Sustainable Development Goal 7 (SDG7), as well as commitments such as the Paris Agreement.

Through applying the WSA, DFID can **better identify the entry points where UK Official Development Assistance (ODA) can be transformative.** The WSA supports DFID advisors to better understand, communicate and manage trade-offs across the energy sector for electricity, cooking and industrial demand. The WSA enables integration of resilience, low carbon transition, and sustainable impact from the national level through to firms and the most vulnerable households.

DFID uses the WSA to **maximise impact and manage risks in its energy technical assistance, investments and international influencing.** Through sharing the WSA methodology, analysis and tools with the international community and across the UK government DFID will promote more coherent and effective action to meet the global energy goals and global poverty alleviation.

The WSA identifies three layers of the energy sector to ensure that analysis of the sector covers the whole system. When reviewing the energy sector, our analysis has sought to understand the state of the physical energy infrastructure in place in the country, the regulatory framework in place to govern the sector, and the commercial arrangements in place between the main actors in the sector. The interactions between these three layers are complex and each has an important role in determining whether the energy sector provides a solid foundation for inclusive growth and whether the sector delivers value for money for bill-payers and taxpayers.



Each of these layers can be broken down further. For completeness, the table below demonstrates how each layer has been considered in our analysis of the energy sector in Sierra Leone, and how our application of the WSA has driven our recommendations in the energy sector:

⁷⁷ Note that at the time of writing the detailed design of the WSA remains under development. The description in this appendix reflects the draft WSA as applied during the CIG scoping missions.

Key findings		Impact on our recommendations
1. Physical infrastructure		
1.1.	Extraction of fossil fuels	<ul style="list-style-type: none"> • No known indigenous supplies of oil, coal, or natural gas. • All fossil fuels used in power generation – all of which are liquid fuels – are imported.
1.2.	Conventional power generation	<ul style="list-style-type: none"> • Karpowership in place, with option to expand this capacity in future.
1.3.	Renewable power generation	<ul style="list-style-type: none"> • Much of the existing generation capacity is hydro, the largest generator being Bumbuna. • Little / no flexibility in dispatching this capacity because of low head. • Significant solar PV potential.
1.4.	System flexibility and energy storage	<ul style="list-style-type: none"> • Hydro capacity is seasonal and inflexible as it is run-of-river. • Flexibility is provided by expensive thermal power plants using liquid fuel.
1.5.	Network infrastructure	<ul style="list-style-type: none"> • Access is low and network infrastructure is focused on Bumbuna to Freetown line. • Improved interconnection with WAPP due to be operational in 2020 via the CLSG line. • Distribution infrastructure is over-stretched and is not fit-for-purpose, even in Freetown. • Technical and non-technical losses are high.
1.6.	Decentralised mini-grids	<ul style="list-style-type: none"> • Access is low, but Energy Africa compact sets out a pathway forward and is being implemented by DFID SL through its mini-grids programme
1.7.	Decentralised stand-alone systems	<ul style="list-style-type: none"> • Mini-grids programme will bring in private sector operators – but critical issue is long-term sustainability and commercial viability • Large industrial users provide their own power through stand-alone systems.
1.8.	Demand-side participation	<ul style="list-style-type: none"> • Estimated unconstrained demand is far higher than existing generation capacity – but can be met by Karpowership • Many consumers have their own generators (33,000 generators providing ~180 MW capacity).
1.9.	Heating and cooking	<ul style="list-style-type: none"> • Biomass is the largest primary energy source; much of this is used as firewood and charcoal for domestic cooking. • Charcoal is also used for some small enterprises, e.g. in fish smoking.
2. Governance and regulation		
2.1.	Energy access policy	<ul style="list-style-type: none"> • Very low access to energy. • Energy Africa compact and Electricity Access policy sets out how SDG7 will be met
2.2.	Emissions reduction policy	<ul style="list-style-type: none"> • Renewable Energy and Energy Efficiency Policy ratified in 2016.
2.3.	Energy efficiency policy	
2.4.	Industrial development policy	<ul style="list-style-type: none"> • Existing energy sector infrastructure does not support industrial development. • Roadmap is being re-orientated to directly support key sectors in the National Development plan
2.5.	Role of regulation	<ul style="list-style-type: none"> • Regulator, EWRC, exists but is not yet fulfilling its role, for example in regulating tariffs. • Tariffs are not cost reflective and have not increased for several years.
		<ul style="list-style-type: none"> • While there is a supply shortfall today, projects already being developed will meet this shortfall in the medium-term. • Other donors – MCC and WB in particular – are already heavily involved on the supply-side, so it is not proposed that CIG provides support on centralised supply-side infrastructure. • Significant existing funding for transmission lines and interconnection with other WAPP markets, including capex funding from DFID. • Support proposed to identify and structure projects to target loss reduction on the distribution network. • DFID is already active in off-grid rural electrification in Sierra Leone. • CIG could help to identify and evaluate situations where off-grid solutions such as mini-grids could support job creation and the productive use of electricity, for example in cold chain applications. • For agribusiness, CIG could identify opportunities to use by-products / residues in electricity generation. • CIG could help to address bottlenecks in meeting demand, with a focus on demand from enterprises with potential for job creation. This could involve techno-economic evaluation of the on-grid and off-grid options to support load, and project preparation activities for the preferred solutions. • None. • Stakeholders have clearly indicated that CIG should focus on supporting implementation, so any policy interventions would be very focused to removing policy barriers to other proposed interventions. • MCC programme is already providing significant support in capacity building activities across the sector, covering both the regulator and the utilities.

		Key findings	Impact on our recommendations
2.6.	Regulatory incentives to perform and innovate	<ul style="list-style-type: none"> • EDSA management contract in place until 2019, but has had little impact on performance. • Capacity in the unbundled utilities is weak. 	<ul style="list-style-type: none"> • MCC, through the Roadmap, is also defining a clear trajectory for the evolution of the market structure. • It is proposed that these are therefore unlikely to be priority areas for CIG in Sierra Leone.
2.7.	Planning and forecasting	<ul style="list-style-type: none"> • Lack of capacity in the utilities. 	
2.8.	Market design	<ul style="list-style-type: none"> • Generation and transmission unbundled from distribution and supply. • Unbundled utilities remain in the public sector, but with some IPP developments. 	
2.9.	Incentives, subsidies, and cross-subsidies	<ul style="list-style-type: none"> • Significant subsidies in the sector: tariffs are not cost-reflective, undermining EDSA's credit-worthiness as an offtaker. 	
3. Market and commercial			
3.1.	Procurement	<ul style="list-style-type: none"> • Enabling environment for IPPs exists. • PPAs are not standardised. • IPPs are mostly unsolicited and subject to political risk as demonstrated by the recent cancellation of the Salone HFO project. 	<ul style="list-style-type: none"> • Existing MCC and WB programmes are likely to be best placed to advise on competitive procurement for centralise infrastructure. • Potential role for CIG to develop commercially viable loss reduction projects for private investment
3.2.	Market arrangements and routes-to-market	<ul style="list-style-type: none"> • EDSA acts as a single-buyer. • Lack of cost-reflectivity undermines EDSA's credit-worthiness. • This undermines the viability of projects throughout the sector, including interconnectors and trading opportunities as well as IPPs. 	<ul style="list-style-type: none"> • As above, MCC programme is supporting the regulatory and defining a trajectory for future evolution of the market.
3.3.	System operation	<ul style="list-style-type: none"> • Capacity for sophisticated system operation is low, but is a lower priority until supply is sufficient to meet demand. 	<ul style="list-style-type: none"> • Not identified as an immediate bottleneck to be addressed by CIG.
3.4.	Metering and revenue collection	<ul style="list-style-type: none"> • Tariffs are not cost reflective. • Significant forex exposure for consumers / taxpayers. 	<ul style="list-style-type: none"> • As noted above, regulatory support relating to tariffs is likely to be covered by existing MCC programme. • However, CIG could provide support in identifying specific opportunities for loss reduction, including non-technical losses.

9.3 Donor Activity

Table 4: Top 10 IATI reported projects (by value, USD)⁷⁸

Project	Donor	Committed	Spent
Bandajuma - Liberian border road and bridges	EU	150,190,000	0
Moyamba-Moyamba Junction Road and Bridges	EU	58,081,000	0
Rehabilitation of Freetown Water Supply System.	DFID	51,401,600	14,485,100
Three Towns Water Supply and Sanitation Project	African Development Bank	43,762,200	36,884,500
Rural Electrification (mini-grids)	DFID	42,576,900	21,295,300
Energy Sector Utility Reform Project	Millennium Challenge Corporation (US)	41,316,600	0
Energy Sector Utility Reform	The World Bank	40,000,000	10,149,200
Rural Water Supply and Sanitation Project	African Development Bank	38,208,100	13,235,800
Road rehabilitation process	EU	37,959,600	0
Matotoka-Sefadu Road Rehabilitation Project – Section I: Matotoka-Yiye	African Development Bank	36,075,700	29,809,800

Table 5: Major donor activity by CIG theme

Donor	Urban	Infrastructure	Investment
World Bank Group	<ul style="list-style-type: none"> Urban transport, disaster recovery 	<ul style="list-style-type: none"> EDSA support (managing agent) 	<ul style="list-style-type: none"> Trade Finance (IFC) Direct investment (IFC), Bumbuna II
MCC	<ul style="list-style-type: none"> Guma Valley Water Company reform 	<ul style="list-style-type: none"> Utility reform 	
DFID	<ul style="list-style-type: none"> Freetown water supply rehabilitation Guma Valley Water Company reform 	<ul style="list-style-type: none"> Off-grid power project Bo-Kenema rehabilitation Rural feeder roads (closed) 	<ul style="list-style-type: none"> Investment climate reform (with IFC)
AfDB	<ul style="list-style-type: none"> Freetown water supply master plan, disaster response 	<ul style="list-style-type: none"> Bo-Kenema Roads Three town water supply and sanitation project 	
EU	<ul style="list-style-type: none"> Local development/governance 	<ul style="list-style-type: none"> Roads - West African Coastal Highway 	
CDC		<ul style="list-style-type: none"> CECASL (IPP Western Area - now cancelled) 	<ul style="list-style-type: none"> Risk Participation Facility (with Standard Chartered)

⁷⁸ Note that this is incomplete as not all donors report through IATI, including Islamic Development Bank, JICA or Chinese financed.

Other: EIB, FinnFund, Islamic Dev Bank, KfW		<ul style="list-style-type: none"> • Roads (various - mostly rural / regional) • CLSG 	<ul style="list-style-type: none"> • Bumbuna II, Goldtree
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9.4 Stakeholders Consulted

Government of Sierra Leone (incl. public utilities)

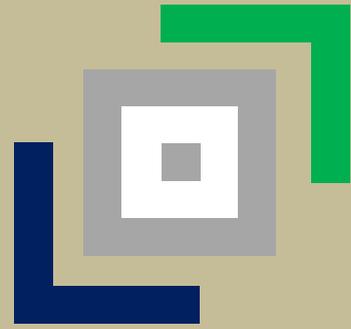
Electricity Distribution and Supply Agency (EDSA)
Electricity Generation and Transmission Company (EGTC)
Environmental Protection Agency
Freetown City Council
Ministry of Energy
Ministry of Planning and Economic Development
Ministry of Trade and Industry
Ministry of Works
Office of the President
Public Private Partnership Unit
Road Maintenance Fund Administration
Sierra Leone Investment and Export Promotion Agency
Sierra Leone Road Safety Authority
Sierra Leone Roads Authority

Donor / Development Community (including donor-funded projects and NGOs)

DFID Sierra Leone
EU
International Growth Centre
Millennium Challenge Corporation
Sierra Leone Urban Research Centre
Tony Blair Institute for Global Change
UNDP (former representative)
UNOPS
Up!-Africa Limited

Private Sector / Banks

Bank of Sierra Leone
Goldtree
Sensi Tech Hub
Sierra Leone Business Forum



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