CÔTE D'IVOIRE

NDC PRIVATE SECTOR ENGAGEMENT PROJECT

Engaging private sector in NDC implementation - Assessment of private sector investment potential in the energy sector

August 2020

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UNDP's work on climate change spans more than 140 countries and USD $3.7 billion in investments in climate change adaptation and mitigation measures since 2008. With the goal to foster ambitious progress towards resilient, zero-carbon development, UNDP has also supported the implementation of the Paris Agreement on Climate Change by working with countries on achieving their climate commitments or Nationally Determined Contributions (NDCs).

THE UNDP NDC SUPPORT PROGRAMME

The NDC Support Programme provides technical support for countries to pursue a "whole-of-society", integrated approach that strengthens national systems, facilitates climate action and increases access to finance for transformative sustainable development. The programme helps countries address these financial barriers by deploying a structured approach for scaling up sectoral investments and putting in place a transparent, enabling investment environment. Beyond direct country support, UNDP facilitates exchanges and learning opportunities on NDC implementation at the global and regional level by capitalizing on our close collaboration with the UNFCCC and other strategic partners. The Programme, which works in contribution to the NDC Partnership, is generously supported by the German Federal Minister for the Environment, Nature Conservation, and Nuclear Safety (BMU), the German Federal Ministry of Economic Cooperation and Development (BMZ), the European Union and the Government of Spain.

ACKNOWLEDGEMENTS

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The Guidance Note should be cited as:
United Nations Development Programme (2020). Engaging private sector in NDC implementation - Assessment of private sector investment potential in the energy sector - Côte d'Ivoire, UNDP, New York

Design and layout:
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AFD	Agence Française de Développement (French Development Agency)
AfDB	African Development Bank
BAU	Business as usual
BCEAO	Banque Centrale des Etats de l'Afrique de l'Ouest (Central Bank of West African States)
BRT	Bus Rapid Transit
BRVM	Bourse Régionale des Valeurs Mobilières (Regional Stock Market)
BUR	Biennial Update Report
C&I	Commercial and industrial
CEPICI	Centre de Promotion des Investissements en Côte d'Ivoire (Côte d'Ivoire Investment Promotion Centre)
CIE	Compagnie Ivoirienne d'Electricité (Ivorian Electric Company)
CREMPF	Conseil Régional de l'Epargne Publique et des Marchés Financiers (Regional Council of Public Savings and Financial Markets)
CVC	Corporate venture capital
DFI	Development finance institution
ECB	European Central Bank
ECOWAS	Economic Community of West African States
EU	European Union
FDI	Foreign direct investment
FDTR	Fonds de Développement du Transport Routier (Road Transport Development Fund)
FIT	Feed-in tariffs
FNME	Fonds National pour la Maîtrise d'Energie (National Fund for Energy Efficiency)
GDP	Gross domestic product
GHG	Greenhouse gas
IEA	International Energy Agency
IFC	International Finance Corporation
IMF	International Monetary Fund
IPCC	Intergovernmental Panel on Climate Change
IPP	Independent power producer
IREN	Institut de Recherche en Energies Renouvelables (Renewable Energies Research Institute)
KfW	Kreditanstalt für Wiederaufbau (German Development Bank)
LULUCF	Land use, land use change and forestry
MDB	Multilateral development banks
MFI	Microfinance institution
MNC	Multinational corporations
MPERE	Ministry of Petroleum, Energy and Renewable Energies
NAMA	Nationally Appropriate Mitigation Actions
NCCP	National Climate Change Programme
NDC	Nationally Determined Contributions
NEEAP	National Energy Efficiency Action Plans
NGO	Non-governmental organization
NREAP	National Renewable Energy Action Plan
OECD	Organization for Economic Co-operation and Development
OHADA	Organisation pour l'Harmonisation en Afrique du Droit des Affaires (Organization for the Harmonization of Business Law in Africa)
UNIDO	United Nations Industrial Development Organization
PDD	Plan Directeur du Réseau de Distribution en Côte d'Ivoire (Distribution Network Master Plan in Côte d'Ivoire)
PPA	Power purchase agreement
PPP	Public-private partnership
PV	Photovoltaic
SE4ALL	Sustainable Energy for All
SHS	Solar home system
SME	Small and medium-sized enterprise
SOTRA	Société des Transports Abidjanais (Abidjan Transport Company)
TNC	Third National Communication
UEMOA	Union Economique et Monétaire Ouest Africaine (West African Economic and Monetary Union)
UNFCCC	United Nations Framework Convention on Climate Change
VAT	Value-added tax
VC	Venture capital

1. INTRODUCTION

Transforming Nationally Determined Contributions (NDCs) into tangible actions that lead to long-term zero-carbon and climate-resilient development requires financing. Access to finance is fundamental to realize the objectives set by the NDCs. However, countries continue to face challenges in securing the financial resources needed to achieve their NDC targets.

To support the transition to low-emission and climate-resilient development, private sector resources must be mobilized to address the shortfall in public investment. The adoption of the Paris Agreement provided a strong policy signal for private sector investment in climate finance. The development of the NDCs has also provided many investment opportunities for the private sector. In 2015, private sector investment in renewable energy reached US$299 billion, before falling to $242 billion in 2016 as a result of both reduced technology costs and lower capacity additions in some countries.[1] Of this amount, project developers are by far the largest provider of climate finance, with investment totalling $25 billion in 2016.

Broader-scale investment is needed to achieve the objectives in the NDCs and the Paris Agreement. For example, estimates project that $23 trillion in public and private investments will be required. Given the magnitude of financing needed, the majority must come from the private sector.[2] Ensuring the transition to low-carbon agriculture, forestry, water and waste sectors, among others, will require additional capital. Global estimates of the cost of climate change adaptation could rise to between $280 billion and $500 billion/year by 2050, with possibly higher costs under higher emission scenarios.[3]

To bridge this financial gap, it is important to understand the private sector stakeholders engaged in markets and industries and which financial instruments and services are available to technology providers, technology users and capital providers.

Private sector players have a significant potential to participate in climate finance and climate actions in developing countries and emerging economies. These players include multinational corporations (MNC) and financial institutions. Small and medium enterprises (SME) will also be mobilized in these countries. However, these players face a number of barriers to investing and engaging in climate actions, including financial barriers, technical limitations and regulatory barriers.

Côte d'Ivoire is one of West Africa's most economically successful countries, with a strong economy, a large and significant private sector, and significant potential as a source of renewable energy. Most importantly, it has positioned itself to become an emerging country and an energy hub for West Africa by 2020. While Côte d'Ivoire's current contribution to global greenhouse gas (GHG) emissions remains relatively low, these ambitious objectives, coupled with strong population growth, will result in a substantial increase in emissions, with the largest absolute growth expected to be in the electricity production and transport sectors. Therefore, GHG emissions from the energy sector must be mitigated as the country's economic development progresses over the coming years. While Côte d'Ivoire has already made progress in addressing climate change by implementing several energy sector policies and strategies, private sector participation and significant investment are required to achieve the country's ambitious goal.

To successfully mobilize such investment in the energy sector requires assessing the potential opportunity for the private sector to help Côte d'Ivoire meet its NDC target: to achieve 42 percent of electricity from renewable energy by 2030. This report builds on the 2018 International Finance Corporation (IFC) report, 'Unlocking Private Investment: A roadmap to achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.' It is a key publication for private sector investment in the renewable energy subsector in Côte d'Ivoire.[4]

1 Climate Policy Initiative. October 2017. *Global Landscape of Climate Finance 2017.*
2 NDC Partnership. *Unlocking private finance to help governments achieve their climate goals.*, **http://ndcpartnership.org/unlocking-private-finance-helps-governments-achieve-their-climate-goals**
3 Sustainable Development Goals. 2016. *UNEP report: Cost of adapting to climate change could hit $500B per year by 2050*, **https://www.un.org/sustainabledevelopment/blog/2016/05/unep-report-cost-of-adapting-to-climate-change-could-hit-500b-per-year-by-2050/**
4 International Finance Corporation. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*

This report assesses the potential for private sector investment in Côte d'Ivoire's energy sector, including the renewable energy, energy efficiency, clean cooking and transport subsectors. The country's current greenhouse gas emissions and climate targets related to the energy sector are assessed in section 2. Section 2 also presents the importance of the energy sector in achieving Côte d'Ivoire's NDC target and private sector investment potential. Section 3 provides the status of Côte d'Ivoire's enabling environment, including an overview of the major policies relevant to private sector investment in the energy sector and a detailed review of the country's macroeconomic environment and ease of doing business. Section 4 presents the status of private sector investment and the barriers and obstacles to promoting such investment in the energy sector. Section 5 analyses and assesses opportunities for private sector investment in the energy sector. The reporting framework to align business opportunities with Côte d'Ivoire's NDC targets in the energy sector and the SDGs is presented in section 6.

Findings of this report will allow for mapping of private sector actors in the energy sector for Côte d'Ivoire, which will support the implementation of NDC and achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.

2. GREENHOUSE GAS EMISSIONS AND CLIMATE TARGETS

Côte d'Ivoire is a relatively low emitter of GHG emissions, with only 0.81 tCO_2/inhabitant (excluding forestry).[5] However, the country is highly vulnerable to climate change impacts at various levels, including all sectors that are essential to its development. Côte d'Ivoire submitted its NDC in September 2015 and signed the Paris Agreement in April 2016, thereby committing to periodically prepare, publish and update its GHG emissions inventory every three years as part of its national communications. The inventory is essential to understand the current state of emissions, compare the results at both regional and international levels, and assess developments over time.

Côte d'Ivoire still relies on fossil fuels, such as natural gas-fired generation (thermal), to produce electricity. The energy sector is the country's largest source of GHG emissions, followed by agriculture. To achieve its objective of becoming an emerging economy by 2020, Côte d'Ivoire aims to improve the country's electrification rate. The energy sector represents the backbone of Côte d'Ivoire's development objective; mitigation measures need to be implemented to ensure sustainable development.

This section presents Côte d'Ivoire's GHG emissions, an overview of its energy sector and related emissions, and its NDC target for the sector.

2.1 OVERVIEW OF CÔTE D'IVOIRE'S GHG EMISSION PROFILE

Côte d'Ivoire does not have a formal, established national GHG emissions inventory system. As a result, the GHG emission calculation methods used for the 2017 Third National Communication (TNC) and the 2018 Biennial Update Report (BUR) are different. The business-as-usual (BAU) reference year inventory used for the country's NDC is based on the TNC.

Côte d'Ivoire's current contribution to global GHG emissions is negligible, accounting for only 0.08 percent in 2014.[6] However, the country is highly vulnerable to the impacts of climate change, as its economy mainly relies on agriculture, which is a climate-sensitive sector. Mitigation actions are required to reduce GHG emissions, which are projected to increase due to Côte d'Ivoire's population and economic growth, together with the challenge of development as the country seeks to become an emerging economy by 2020. [7] In 2016, Côte d'Ivoire's average real growth rate stood at 8.3 percent, one of the highest in sub-Saharan Africa.[8]In 2012, its GHG emissions totalled about 18.4 million tons of carbon dioxide equivalent ($MtCO_2e$), including land use, land use change and forestry (LULUCF), as presented in Table 1.

Table 1: Côte d'Ivoire's GHG emissions (1990 and 2012)

	1990		2012		
SECTOR	Total emissions in CO_2e	Percent share	Total emissions in CO_2e	Percent share	Rate of increase
ENERGY	3,793.54	43.7	11,199.69	59.1	195
INDUSTRIAL PROCESSES	49.75	0.6	219.90	1.2	342
AGRICULTURE	4,223.5	48.7	5,932.94	31.3	40
WASTE	608.03	7	1,604.78	8.5	164
EXCLUDING LULUCF	**8,674.82**	**100**	**18,957.31**	**100**	
LULUCF	8,402.77		-548.29		
TOTAL EMISSIONS	17,077.59		18,409.02		

Source: Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2017. Rapport de la Troisième Communication Nationale (TCN) de la Côte d'Ivoire dans le Cadre de la Convention Cadre des Nations Unies sur les Changements Climatiques(CCNUCC).

5 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
6 USAID. 2019. *Greenhouse Gas Emissions in the West Africa Region.*
7 Government of Côte d'Ivoire. 2015. *Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (INDC).*
8 Government of Côte d'Ivoire. April 2018. *Accelerating 2030 Agenda.*

Côte d'Ivoire's GHG emissions come primarily from the energy and agriculture sectors, representing 59 percent and 31.3 percent of total 2012 emissions, respectively.[9] Agriculture remains the backbone of the country's economy, employing two-thirds of the labour force and accounting for 26 percent of GDP.[10] Côte d'Ivoire is ranked as the world's leading cacao producer, with high GHG emissions in the agriculture sector due primarily to agricultural soils (organic), enteric fermentation, the burning of agricultural residues and rice cultivation. The industrial sector is also important, representing up to 20 percent of GDP and employing 13 percent of the labour force.[11] Dominated by the oil, chemical and parachemical industries, it has a significant impact on the country's GHG emissions. High GHG emissions in the energy sector are due primarily to transport, housing and industry.

Under a BAU scenario, GHG emissions in Côte d'Ivoire are expected to almost double over 18 years, from 16 $MtCO_2e$ in 2012 to 34 $MtCO_2e$ in 2030.[12] The largest absolute growth in emissions is expected to be in the electricity production and transport sectors, with electricity production emissions increasing from 3 $MtCO_2e$ in 2012 to 11 $MtCO_2e$ in 2030 and transport emissions increasing from 2 $MtCO_2e$ in 2012 to 6 $MtCO_2e$ in 2030.[13] Thus, the energy sector is important for climate mitigation. Table 2 presents the projected increase in GHG emissions.

Table 2: Breakdown of GHG emissions by sector (NDC reference year and 2030)

	2012	2030 (BAU SCENARIO)		2030 (LOW-CARBON SCENARIO)	
SECTOR	Emissions ($MtCO_2e$)	Emissions ($MtCO_2e$)	Rate of increase (compared to 2012)	Emissions ($MtCO_2e$)	Rate of decrease (compared to BAU)
ELECTRICITY PRODUCTION	3,442.63	11,892	52.93	9,216.56	-7.81
TRANSPORT	2,389.36	6,441.27	25.38	4,477.55	-5.73
INDUSTRY	1,000.81	2,698.01	10.63	1,875.48	-2.40
ENERGY SUPPLY	781.64	2,136.39	8.49	1,485.08	-1.90
BUILDINGS	627.03	1,690.34	**6.66**	1,175.02	-1.50
AGRICULTURE	6,140.80	7,059.16	**5.75**	4,722.57	-6.82
WASTE	1,582.08	2,336.09	4.72	1,623.90	-2.08
TOTAL EMISSIONS ($MTCO_2e$)	**15,964.35**	**34,253.25**	**114.56**	**24,576.16**	**-28.25**

Source: *Government of Côte d'Ivoire. 2015. Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (NDC).*

2.2 CÔTE D'IVOIRE'S ENERGY SECTOR AND ITS GHG EMISSIONS

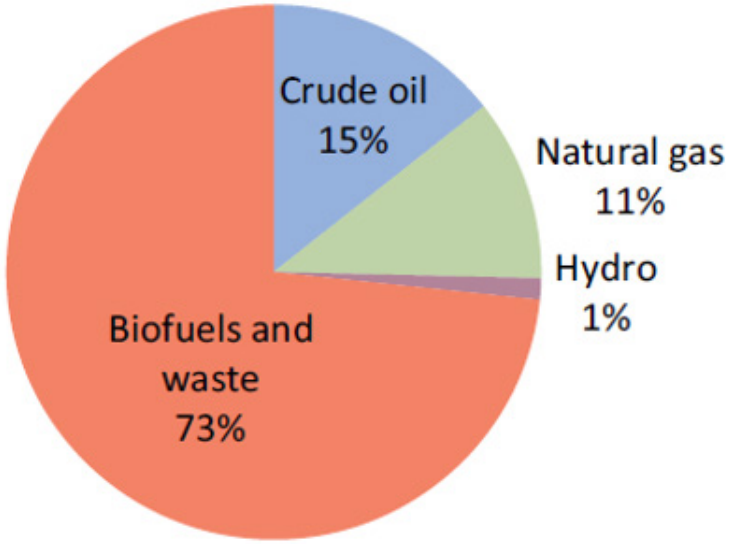
GHG emissions from the energy sector are characterized by two features: emissions from electricity generation and emissions from specific subsectors. Côte d'Ivoire produces electricity primarily from fossil fuels. The three subsectors that also emit GHGs are industry, buildings and transport subsectors.

9 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
10 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2017. *Rapport de la Troisième Communication Nationale (TCN) de la Côte d'Ivoire dans le Cadre de la Convention Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
11 Ibid.
12 Government of Côte d'Ivoire. 2015. *Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (INDC).*
13 Ibid.

2.2.1. ENERGY SOURCES

Côte d'Ivoire's energy sector is characterized by four main energy sources: biofuels and waste; crude oil; natural gas; and, hydroelectricity.

Figure 1: Breakdown of domestic energy sources (2011)



Source: *United Nations Development Programme. NAMA Study for a Sustainable Charcoal Value Chain in Côte d'Ivoire*

Biofuels and waste represent the largest energy sources as of 2011, mainly wood fuel and charcoal. Côte d'Ivoire's growing and increasingly urbanized population relies primarily on charcoal, especially for cooking, as it is seen to have fewer negative side effects (including fire danger and smoke) than wood fuel. It is also more cost efficient than petroleum products. However, rural populations still rely almost exclusively on wood fuel.

2.2.2 ENERGY SUPPLY (ELECTRICITY GENERATION)

Côte d'Ivoire has the third largest electrical system in West Africa, exporting about 8 percent of its total production to Burkina Faso, Ghana, Mali and Togo.[14] Electricity in Côte d'Ivoire is generated from three main sources - hydro, natural gas and oil. Natural gas-fired generation (thermal), with installed power capacity of 1,282 MW, and hydropower, with installed power capacity of 879 MW, are the leading sources of electricity.[15] However, in 2018, electricity generation totalled 9,997 Gigawatt hours (GWh), with thermal contributing 7,035 GWh (70 percent) and hydro contributing 2,962 GWh (30 percent).[16] This is primarily because equipment at the hydropower plants is obsolete, making them less efficient, combined with fluctuating water resources based on the season.

2.2.3 ENERGY DEMAND

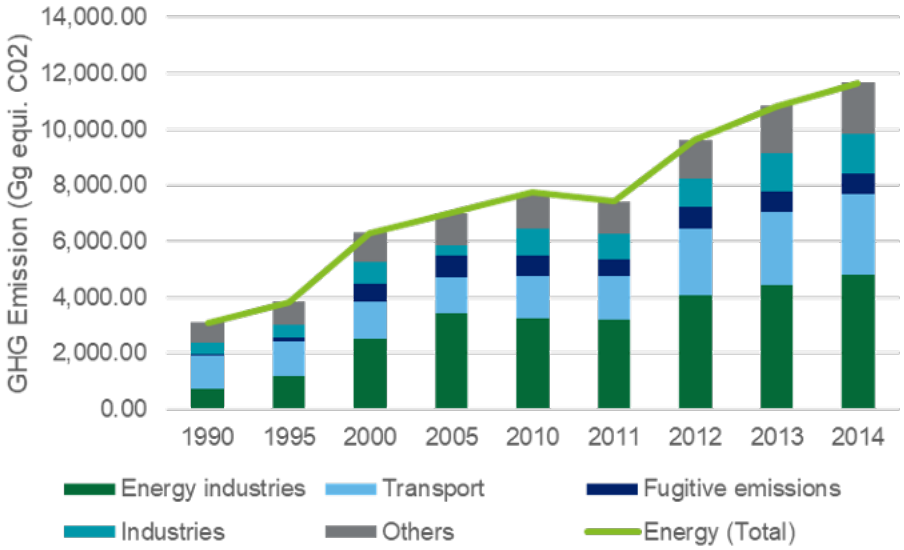
Three primary sources supply energy in Côte d'Ivoire: fossil fuels, biomass and electricity. Fossil fuels and biomass meet domestic energy demand, such as for cooking and heating at the household level.[17] Housing accounts for about 70 percent of total energy demand (electricity), followed by shops and public services, transport, non-specified uses, industry, and agriculture.[18]

14 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
15 ANARE-CI. 2018. *Rapport d'Activités 2018.*
16 Ibid.
17 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
18 Ibid.

2.2.4 GHG EMISSIONS FROM THE ENERGY SECTOR

Côte d'Ivoire's NDC focuses on three energy sector subsectors: industry, buildings, and transport.[19] GHG emissions from these subsectors are due primarily to fuel combustion (both fossil and biofuels). Figure 2 shows that energy GHG emissions increased by 276 percent between 1990 and 2014.[20]

Figure 2: GHG emissions growth from the energy sector



Source: *Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*

GHG emissions have increased significantly since 2011 as a result of the strong economic growth after the post-election crisis and the recovery of economic activities. Energy industries constitute the subsector with the greatest GHG emissions in the energy sector (43 percent of total emissions), followed by transport (24 percent of total emissions). Electricity production and heating (about 1,118.29 $GgCO_2e$, or 75 percent of the energy industries subsector), oil refining (about 623.658 $GgCO_2e$, or 15 percent of the energy industries subsector), and charcoal production (about 415.772 $GgCO_2e$, or 10 percent of the energy industries subsector) are primarily responsible for high GHG emissions from energy industries.[21] The transport subsector's emissions increased significantly from 2012, mainly due to the economic recovery. The breakdown of GHG emissions from the transport subsector shows that road transport is the main GHG emitter, accounting for 85 percent of emissions, followed by domestic maritime transport (11 percent) and rail transport (4 percent).[22] The increase in fugitive emissions began in 1995, when Côte d'Ivoire launched its oil and natural gas development with the construction of offshore sites.

2.3 CÔTE D'IVOIRE'S NDC AND ENERGY SECTOR TARGETS

2.3.1 CÔTE D'IVOIRE'S NDC

Côte d'Ivoire submitted its Intended Nationally Determined Contribution (INDC) to the United Nations Framework Convention on Climate Change (UNFCCC) in September 2015. It includes both mitigation and adaptation components. Côte d'Ivoire plans to reduce its development-related carbon footprint by giving priority to mitigation options with high co-benefits, strengthening its climate resilience, establishing coherent sectoral policies, strengthening its mechanism to achieve the objectives, and leveraging the relevant financial resources (both national and international). The national target is to reduce emissions by 28 percent below BAU by 2030, focusing the mitigation actions on the energy, agriculture, waste and LULUCF sectors.[23] Table 3 lists mitigation measures that Côte d'Ivoire identified in its NDC.

19 Government of Côte d'Ivoire. 2015. *Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (INDC).*
20 Ibid.
21 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
22 Ibid.
23 Government of Côte d'Ivoire. 2015. *Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (INDC).*

Table 3: Mitigation measures identified in Côte d'Ivoire's NDC

MITIGATION MEASURES IN CÔTE D'IVOIRE'S NDC
• Achieve 42 percent renewable energy in the electricity mix by 2030 (26 percent hydro + 16 percent other renewable energies), with the remaining 58 percent from coal (26 percent) and combined cycle natural gas (32 percent)
• Reduce GHG emissions caused by deforestation and forest degradation
• Implement sustainable management and recycling of waste

In terms of sectoral targets, Côte d'Ivoire is committed to increase the share of renewable energy in the energy mix to 42 percent by 2030, broken down between large hydro (26 percent) and other renewable energy sources (16 percent).[24] The main challenges are to improve access to electricity and energy at a reasonable price and increase the share of renewable energy in electricity production.

2.3.2 NDC SECTORAL TARGET: ENERGY SECTOR

Côte d'Ivoire's growing population and economy are expected to increase power demand by more than 7 percent per year until 2025.[25] However, as natural gas resources are both limited and needed for industry and gold mining, Côte d'Ivoire will have to develop its national power generation capacity. In 2011, the country adopted a National Strategic Action Plan for the Development of the Electricity Sector, which sets the target of total installed capacity at 3,000 MW by 2020.[26]

In 2013, Côte d'Ivoire adopted a national energy policy that calls for the country to become West Africa's main energy hub. In 2014, the country adopted the Electricity for All programme, which seeks to connect 200,000 households to the electricity system annually, achieving a 60 percent access rate by 2020.[27]

Côte d'Ivoire has set an ambitious target to produce 42 percent of its energy from renewable energy sources by 2030. To meet this target, its NDC identifies the following policy actions in the energy sector, including transport.

Table 4: Mitigation actions in the energy sector identified in Côte d'Ivoire's NDC

FOCUS	SUBSECTORS	MEASURES/ACTIONS
Control systems' energy consumption through a proactive energy efficiency policy that includes renewable energy	Cross-cutting	Invest in energy efficiency and increase the share of renewable energy in the electricity mix by 2030
		Implement an institutional and regulatory framework for renewable energy and energy efficiency
		Strengthen Côte d'Ivoire's integration into the regional energy market through interconnection with neighbouring countries
	Industry	Implement a strategy to reduce waste in industries' energy consumption by: • Analysing energy audits to assess energy consumption and uses • Counting to provide reliable and continuous data about consumption
	Buildings	Develop a national regulation on building thermal efficiency
		Train actors in the value chain in low-consumption construction
	Transport	Improve mobility and develop low-carbon transport offers
		Integrate the energy/climate dimension in territorial planning documents to limit distances, improve functional mix and propose efficient public transport policies
		Support municipalities to develop urban transport plans (such as Abidjan urban train)
		Facilitate the purchase of low-polluting vehicles and the disposal of the most polluting ones by implementing standards, incentives or obligations

24 Ibid.
25 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*
26 Ministère des Mines, du Pétrole et de l'Energie. 2011. *Plan Stratégique de Développement 2011-2030 de la République de Côte d'Ivoire.*
27 Ministère des Mines, du Pétrole et de l'Energie. 2016. *Plan d'Actions National des Energies Renouvelables.*

FOCUS	SUBSECTORS	MEASURES/ACTIONS
Develop energy production based on renewable sources	Renewable energy	Implement an incentive framework for the development of renewable energy (including tenders, FIT and tax exemption)
		Remove barriers to investment (including by strengthening the institutional framework, securing investments and training banks)
		Invest in R&D, strengthen IREN's capacities and assess the opportunity to create a renewable energy promotion agency
		Facilitate the development of projects in the relevant sectors: • Small hydroelectricity • Methanization (including waste and agricultural residues) • Photovoltaic (promotion of PV solar kits, PV pumping system) • Biomass (sustainable exploitation of fuelwood)

In addition to its NDC, Côte d'Ivoire has set ambitious targets for the energy sector, particularly in renewable energy and energy efficiency subsectors, as part of the Sustainable Energy for All (SE4ALL) initiative launched by the United Nations in 2011. The National Renewable Energy Action Plan (NREAP) lists targets for the renewable energy subsector. They include: increasing renewable energy installed capacity to 3,259 MW; increasing the percentage of the rural population using off-grid electricity from renewable energy sources from zero to 2 percent; and providing 90 percent of the population access to modern alternative cooking energy by 2030.[28] Aligned with the NDC, these targets provide opportunities or entry points for private sector investment in the renewable energy subsector, especially for on-grid renewable energy. Thus, these opportunities can contribute to private sector-led sector development and must be considered for private sector involvement in the energy sector. Table 5 presents Côte d'Ivoire's targets for renewable energy.

Table 5: Côte d'Ivoire NREAP targets

	2010	2014	2020	2030
GRID-CONNECTED RENEWABLE ENERGY TARGET				
Installed capacity of renewable energy - MW	604	-	1,894	3,259
Share of renewable energies - %	43	-	51	57
Renewable energy production capacity - GWh	1,618	-	5,148	11,293
Share of renewable energy - %	28	-	34	42
OFF-GRID RENEWABLE ENERGY TARGET				
Share of rural population using off-grid electricity from renewable energy sources - %	-	2	3	2
CLEAN COOKING TARGET				
Share of population using improved cooking solutions - %	6	8	15	10
Share of charcoal produced by efficient carbonization technologies - %	-	0.3	6	16
Share of population using modern alternative cooking fuels (LPG)	20	23	43	90

Côte d'Ivoire's National Energy Efficiency Action Plan (NEEAP) provides a list of actions in the energy efficiency subsector.[29] While several targets are provided, opportunities for the private sector are limited, as only the labelling of electricity-powered devices and the implementation of energy audit recommendations are relevant to the private sector. The public sector is likely to take the other actions listed, as they deal mainly with energy efficiency in public lighting, electricity distribution and the implementation of standards and labels. The list of targets is detailed in Table 6, with actions relevant to the private sector highlighted in **orange**.

28 Ministère du Pétrole et de l'Energie. 2016. *Plan d'Actions National des Energies Renouvelables (PANER).*
29 Ministère du Pétrole et de l'Energie. 2016. *Plans d'Actions National d'Efficacité Energétique (PANEE).*

Table 6: Côte d'Ivoire's NEEAP targets

	2010	2014	2016	2020	2030
EFFICIENT LIGHTING					
Penetration rate of network lighting - %	40.2	-	-	100	100
Network lighting energy savings – GWh	-	-	-	356	700
Number of low-energy lamp distributed off-grid	-	-	-	82,479	89,511
Public lighting energy savings (scenario 1)* - GWh	-	-	-	28.3	28.3
Public lighting energy savings (scenario 2)* - GWh	-	-	-	83	442
HIGH PERFORMANCE DISTRIBUTION OF ELECTRICITY					
Total losses in the power system, including technical and non-technical transmission and distribution - % of available power: production + balance of imports and exports)	-	21	-	16	10
Losses in production and transport sectors - %	-	6	-	3	3
Total distribution losses -%	-	15	-	13	7
Technical losses - % distribution		7	-	6	3
Non-technical losses - % distribution		8	-	7	4
STANDARDS AND LABELLING OF ELECTRICITY-POWERED DEVICES					
Number of energy efficiency standards in force in the country	-	-	2	6	10
Number of energy standards applied to network/off grid and public lighting	-	-	2	2	2
Number of energy efficiency standards applied to electricity-powered devices (including refrigerators, air conditioners, freezers, washing machines, TV, water boilers and fans)	-	-	0	4	8
Number of energy efficiency labels in force	-	-	2	6	10
Number of efficient lighting labels (network/off grid and public lighting)	-	-	2	2	2
Number of energy efficiency labels applied to electricity-powered devices	-	-	0	4	8
BUILDING ENERGY EFFICIENCY					
Number of energy quality standards for buildings	-		-	1	1
INDUSTRY ENERGY EFFICIENCY					
Percentage of industries audited	-	-	-	20	50
Percentages of audited industries that have implemented energy audit recommendations	-	-	-	100	100

*Scenario 1 includes replacing 74,000 mixed and mercury vapor lamps with more economical high-pressure sodium lamps, while scenario 2 includes replacing all high-pressure sodium lamps with LEDs.

Climate change presents a significant challenge in Côte d'Ivoire, as it threatens the sectors that constitute the backbone of the country's economy. As the energy sector is currently the largest GHG-emitting sector in the country, it is crucial that it adopt climate mitigation actions to help achieve Côte d'Ivoire's target of reducing the country's GHG emissions by 28 percent compared to a BAU scenario by 2030. Within the energy sector, Côte d'Ivoire aims to achieve 42 percent renewable energy generation by 2030. This will require tremendous private sector investment. To respond to this need and drive mitigation efforts in the energy sector, we must understand the current enabling environment for private sector investment, including its existing policies and incentives, macroeconomic environment and ease of doing business.

3. ENABLING ENVIRONMENT

Côte d'Ivoire has committed to address climate change through mitigation measures, especially in the energy sector. The country has set an ambitious target of decreasing its GHG emissions by 28 percent compared to BAU, including a 42 percent renewable energy target.

The existence of an enabling policy environment, including related legislation, laws, programs and plans, is crucial for any country to achieve its sustainable development targets. Côte d'Ivoire has developed a wide range of policies related to climate change and energy, emphasizing the need to involve the private sector in the process. However, while detailed objectives and general policies are being implemented, specific laws, regulations and incentives that would foster private sector investment in the energy sector to achieve the overall target are still lacking.

This section highlights existing key policies that shape the status of the private sector in Côte d'Ivoire's energy sector, followed by an overview of its current business environment, including macroeconomic environment and ease of doing business.

3.1 OVERALL POLICY ENVIRONMENT

The Government of Côte d'Ivoire recognizes the importance of integrating climate actions in its policies and the importance of the private sector to implement them, as the country's vision for 2040 and its National Development Plan 2016-2020 shows.

3.1.1 CÔTE D'IVOIRE 2040, 2015

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To make Côte d'Ivoire an industrial power, united in its cultural diversity, democratic and open to the world.	Côte d'Ivoire's development vision depends on strong economic growth led by both public and private investments.	Development of a stable and democratic government, as well as an innovative financial system in which the private sector can invest with confidence.

Launched in September 2015, the prospective study, 'Côte d'Ivoire 2040,' presents its long-term vision to transform the country into an industrial power, united in its cultural diversity, democratic and open to the world by 2040. The Vision stands on four pillars: industrial power; a nation united in its cultural diversity; democracy; and a nation open to the world. The Vision develops three scenarios, ranging from pessimistic to optimistic. The optimistic scenario relies heavily on developing sustainable and innovative systems, adopting clean technologies, and developing an innovative financial system, including the involvement of private banks. This vision thus implies significant public and private sector investment.

3.1.2 NATIONAL DEVELOPMENT PLAN 2016-2020 (NDP)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To make Côte d'Ivoire an emerging economy by 2020, with a strong industrial base.	Côte d'Ivoire's Development Plan calls for $20 billion in private sector investment and implementing policies to improve the country's business environment.	Further organization of robust civil society and private sector participation in the development process.

The National Development Plan 2016-2020, which is based on the prospective study, 'Côte d'Ivoire 2040,' is the country's short-term development blueprint to transform Côte d'Ivoire into an emerging country by 2020, as well as an energy hub in sub-Saharan Africa. It details a series of objectives and strategies to achieve this national target, including the GHG emission reduction challenge. The plan emphasizes the need to include

GHG emission reduction objectives in every action, implement energy efficiency, develop renewable energy, implement adequate waste management, and reduce deforestation. The implementation and success of the NDP relies heavily on private sector involvement, as it calls for investing $20 billion and producing 4,000 MW by 2030.[30] To achieve that, the document includes policies that seek to improve Côte d'Ivoire's business climate by creating a dedicated commercial court for business rulings, offering incentives to private investors and adopting an appropriate framework for physical and financial flows in the electricity sector.[31]

3.2 CLIMATE CHANGE-RELATED POLICY ENVIRONMENT

Côte d'Ivoire's climate change policies are led by its National Strategy for Combatting Climate Change, its INDC (submitted in 2015), its communication to the UNFCCC (its Third National Communication[32] submitted in 2017) and its First Biennial Update Report,[33] submitted in 2018.

In 2014, the country also adopted a framework law on sustainable development,[34] stipulating the need to create, by decree, several entities to combat climate change, including, an agency and a climate fund. The Government of Côte d'Ivoire is thus actively preparing to establish a National Climate Agency and considering the creation of a National Climate Fund. The fund would be an effective mechanism to help Côte d'Ivoire direct funding towards climate change response projects and programmes.

3.2.1 NATIONAL STRATEGY FOR COMBATING CLIMATE CHANGE, 2015-2020

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To improve the living conditions and resilience of Côte d'Ivoire's population by 2020.	Côte d'Ivoire's national resource mobilization strategy for climate change relies heavily on involving the private sector and commercial banks.	Integration of the private sector and commercial banks in the activities of the National Climate Change Programme.

The five-year national strategy seeks to identify the challenges of climate change and develop a response strategy to establish a sustainable socioeconomic development framework that incorporates the challenges of climate change in every sector and helps to improve the population's living conditions and resilience by 2020. The private sector is expected to be involved in the resource mobilization process for climate-related projects, especially for public-private partnership (PPP) investments for both adaptation and mitigation. However, as the national strategy was established prior to the NDC, which is now Côte d'Ivoire's main climate change document, it does not reflect the latest developments. In addition, as of March 2020, the NDC is currently being revised with greater commitments.

3.3 POLICY ENVIRONMENT IN THE ENERGY SECTOR

Côte d'Ivoire's climate change-related documents, including its NDC and BUR, refer to four subsectors in the country's energy sector: cross-cutting; industry; buildings; and transport.

3.3.1 OVERALL ENERGY SECTOR

Côte d'Ivoire has developed a number of policies related to the overall energy sector. Its National Energy Policy, adopted in 2013, sets the ambitious objective to become an energy hub in West Africa.

30 Export.gov. *Côte d'Ivoire – Energy*. **https://www.export.gov/article?id=Cote-d-Ivoire-Energy.**
31 Deloitte. March 2017. *Invest in Côte d'Ivoire, A Business Guide for Africa's Fastest-growing Economy.*
32 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2017. *Rapport de la Troisième Communication Nationale (TCN) de la Côte d'Ivoire dans le Cadre de la Convention Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
33 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
34 Assemblée Nationale. 2014. *Loi n. 2014-390 du 20 juin 2014 d'Orientation sur le Développement Durable.* **http://www.environnement.gouv.ci/img/1421663878l0oidorientationsurledd.pdf.**

3.3.1.1 STRATEGIC DEVELOPMENT PLAN 2011-2030, 2011

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To identify projects that require significant private sector investment.	The private sector is the key player in leading the implementation of identified projects.	Investment opportunities in enhancing Côte d'Ivoire's energy supply.

Released in 2011, the Strategic Development Plan identifies 66 projects in the electricity sector and 47 in the hydrocarbon sector. While the government is responsible for implementation, control and enforcement of the rules, the document also mentions that the private sector should be actively involved in these projects. Regarding the electricity sector, projects have been selected that require significant private sector investment, including through PPPs and independent power producers (IPPs). The document provides concrete private sector investment opportunities, including the amount required for each project.

3.3.1.2 NATIONAL SEMINAR ON ENERGY, 2012

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To develop measures to achieve abundant, high quality and inexpensive energy.	The private sector is the key driver in achieving the objective.	It emphasizes the need to create an environment that encourages increased private sector investment.

As Côte d'Ivoire's economy is growing quickly, the key development sectors will need abundant, high quality and inexpensive energy. The 2012 National Seminar on Energy, held by the Ministry of Petroleum, Energy and Renewable Energies (MPERE), aimed to develop measures to meet this new challenge and to update the Strategic Development Plan 2011-2030. The seminar report emphasizes the need to create an environment to promote increased private sector investment in the energy sector. It also focuses on a natural gas-powered thermal power plant, deployment of renewable energy and the potential for hydroelectricity.

3.3.1.3 ELECTRICITY CODE, 2014

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To liberalize electricity generation, transmission and distribution.	The private sector can be involved in the generation, transmission and distribution of electricity in Côte d'Ivoire.	Entry point for the private sector in Côte d'Ivoire's electricity supply.

The Electricity Code was adopted in 2014. Its primary focus is to liberalize the generation, transmission and distribution of electricity. The state monopoly retains responsibility only for dispatching and providing third-party access to the transmission grid. This Code constitutes an important entry point that will enable the private sector to play a major role in Côte d'Ivoire's electricity supply.

3.3.1.4 SECTORAL STRATEGY FOR THE DEVELOPMENT OF RENEWABLE ENERGIES AND ENERGY EFFICIENCY, 2020

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To make Côte d'Ivoire a leader in renewable energy and energy efficiency in order to contribute to the country's energy security and environmental protection.	In the short and medium term, the government gives priority to the private sector to develop renewable energy and energy efficiency.	Implementation of several measures to attract both public and private investments to increase the share of renewable energy in the energy mix, develop access to energy services for all, create jobs, and, thereby, make alternative energy a source of sustainable prosperity for the country.

The sectoral policy was released in 2020 and defines the strategy up to 2030 for the development of renewable energies and energy efficiency. It is based on the following basic principles:

- To comply with the commitment to increase the share of renewable energy in the electricity mix to 42 percent by 2030 (including 26 percent hydro, 10 percent biomass and 6 percent solar); and,
- To improve energy efficiency in the industry, buildings and transport subsectors, in line with the policies of subregional organizations, particularly the *Union Economique et Monétaire Ouest Africaine* (West African Economic and Monetary Union, UEMOA) and the Economic Community of West African States (ECOWAS).

In terms of developing renewable energy, this policy will make it possible to (i) stimulate the development of green electricity generation infrastructure connected to the interconnected network; (ii) promote the development of off-grid green electricity production to accelerate the electrification of small villages and remote locations; and, (iii) promote renewable energy for other uses, including domestic and commercial applications and processing of agricultural products.

In terms of the developing energy efficiency, this policy will make it possible to (i) optimize energy consumption in every sector of economic activity; (ii), improve energy efficiency in the production, transmission and distribution of electrical energy; and, (iii) encourage households to use efficient cooking systems.

To achieve this with private sector involvement, the policy notes that incentives will be developed for private developers and that PPPs will be established.

3.3.1.5 OTHER ENERGY-RELATED POLICIES

Côte d'Ivoire has also developed other policies related to the energy sector. The National Investment Programme for Access to Energy Services in Côte d'Ivoire (PNIASE),[35] released in 2012 and linked to the National Development Plan 2012-2015, detailed the investment required from 2012 to 2015 to achieve the MDGs. It focuses on access to electricity and modern cooking solutions. In addition, through the Electricity Production and Transport Master Plan 2014-2030,[36] the government set a maximum of 60 percent from one energy source in order to diversify electricity production sources by increasing the share of renewable energy.

3.3.2 RENEWABLE ENERGY

Côte d'Ivoire's NREAP 2016-2020/2030,[37] adopted in 2016, sets a renewable energy target of 42 percent by 2030, in line with the NDC. The country has adopted the following policies to achieve this ambitious target.

3.3.2.1 BUDGET BILL NO. 2011 – 480 ARTICLE 2, 2011

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To increase private sector investment in solar.	The private sector is the key actor in solar investment.	Tax reduction on solar equipment.

Solar energy production equipment benefits from a reduced VAT rate of 9 percent. This reduction is expected to incentivize private investments in solar energy.

3.3.2.2 ACTION PLAN FOR OFF-GRID ELECTRIFICATION

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To improve access to electricity through the promotion and use of decentralized energy solutions to improve quality of life for all rural and peri-urban households.	The private sector is the key actor in developing the off-grid electrification market.	Creation of a favourable enabling environment for the emergence of local entrepreneurs in the off-grid electrification market.

35 Ministère des Mines, du Pétrole et de l'Energie. 2012. *Programme d'Investissement pour l'Accès aux Services Energétiques en Côte d'Ivoire.* **http://www.environnement.gouv.ci/img/142166387810oidorientationsurledd.pdf**

36 CI-ENERGIES. 2014. *Plan Directeur des Ouvrages de Production et de Transport Electrique de la Côte d'Ivoire pour la période 2014-2030.* **https://rise.esmap.org/data/files/library/côte-d'ivoire/RE/RE_8_2Plan%20Directeur%20Production%20et%20transport%20Energie-Resume.pdf**

37 Ministère du Pétrole et de l'Energie. 2016. *Plan d'Actions National des Energies Renouvelables (PANER).*

Because emerging local firms entering the market are not eligible for debt financing without a strong financial track record, the Action Plan, released in 2019, establishes a first-loss guarantee scheme to reduce the risk to financial institutions and encourage them to provide financing. The document also plans for the development and adoption of a master plan for off-grid electrification. It estimates the need for off-grid investment in approximatively 80,000 small villages, or 243 MW (1,460 MWh).

3.3.2.3 OTHER RENEWABLE ENERGY-RELATED POLICIES

Côte d'Ivoire participated in the ECOWAS Renewable Energy Policy (EREP) process, which aims to increase the share of renewable energy in the region's overall electricity mix to 35 percent in 2020 and 48 percent in 2030.

3.3.3 ENERGY EFFICIENCY

The objective of Côte d'Ivoire's National Energy Efficiency Action Plan 2016-2020/2030 (NEEAP),[38] adopted in 2016, is to save more than 50 MW of energy annually from 2016 to 2030. The country has adopted the following policies to achieve this ambitious target.

3.3.3.1 NATIONAL FUND FOR ENERGY EFFICIENCY (FONDS NATIONAL POUR LA MAÎTRISE D'ENERGIE, FNME)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To serve as a guarantee to improve interest rates related to energy efficiency activities for both the public and private sectors.	The private sector plays an important role in achieving energy efficiency, especially in buildings and industry.	Financial incentives for energy efficiency activities.

The FNME is designed to provide a guarantee to both the public and private sectors so that they may obtain optimal interest rates when seeking financing for energy efficiency-related activities. The Fund still needs funding from the government and multilateral finance institutions to launch its operations.

The following incentives are being considered:

- Zero-interest rate loans for building construction and renovation materials so that they can comply with the regulations; and,
- A 50 percent property tax exemption for buildings that comply with the regulations

3.3.4 OTHER ENERGY EFFICIENCY-RELATED POLICIES

Côte d'Ivoire participated in the Authority of ECOWAS Energy Efficiency Policy (EEEP) process, which aims to implement efficiency measures that would free up 2,000 MW of power generation capacity by 2020, increasing the country's energy efficiency to levels of international standards. In June 2020, Côte d'Ivoire will adopt regulations bringing it into compliance with this policy, including energy standards and labelling for buildings.

3.4 PRIVATE SECTOR POLICY ENVIRONMENT

The regulations governing PPPs regulations and the Investment Code provide additional support to increase private sector investment. The Investment Code is detailed in section 3.8.

38 Ministère du Pétrole et de l'Energie. 2016. *Plans d'Actions National d'Efficacité Energétique (PANEE).*

3.4.1 DECREE NO. 2018-358 OF 29 MARCH 2018 DETERMINING THE RULES APPLICABLE TO PUBLIC-PRIVATE PARTNERSHIP AGREEMENTS

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To provide a clear regulatory framework for PPP contracts.	PPP contracts imply the participation of both the public and private sectors.	Guarantee of a clear regulatory framework for PPP contracts.

This decree is intended to provide a detailed regulatory framework for PPP projects, which can reduce the risks for private sector engagement. The PPP National Steering Committee is responsible for managing the implementation of PPP projects.

3.5 TRANSPORT

3.5.1 LAW ON INLAND TRANSPORT (LOTI) OF 16 DECEMBER 2014

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To guide and regulate the national transport policy relating to the execution of public services, transport offers, transport company competition and user protection and information.	The private sector is the key stakeholder for investments.	Detailed transport-related legal framework.

The law aims to provide a detailed legal framework for transport organizations in Côte d'Ivoire. It has modernized the legal framework for transport, which was previously governed by multiple laws, ordinances and decrees, in response to changes in the political, economic, social and demographic contexts.

3.5.2 ROAD TRANSPORT DEVELOPMENT FUND (FONDS DE DÉVELOPPEMENT DU TRANSPORT ROUTIER, FDTR)

POLICY OBJECTIVE	POLICY RELEVANCE TO THE PRIVATE SECTOR	POLICY IMPLICATIONS FOR THE PRIVATE SECTOR
To introduce newer, better-performing taxis and mini-buses in Abidjan.	Private transport companies are the key stakeholders for ensuring the last mile connection in Abidjan.	Financial and overall support to transport companies to allow them to invest in new vehicles by providing blended finance.

The FDTR is a public fund under the Ministry of Transport and is responsible to support the modernization the country's automotive fleet. Initially, the Fund was to invest FCFA 750 billion over five years, but that amount was scaled back to FCFA 29 billion. The Fund seeks to achieve its objective through two initiatives:

- Financing support programme for financial institutions: this programme enables financial institutions to lend to transport companies, which are then responsible to reimburse the loan. In its first phase, the Fund provided 100 percent of the loan; in the second, it provided 50 percent of funds, coupled with a matching loan from the institutions. Currently, the Fund aims at a three-to-one leverage (30 percent to 70 percent risk-sharing arrangement). Transport companies must register and provide 5 to 10 percent of the initial investment.

  However, this support programme remains limited, with 300 new taxis introduced since its implementation in 2014, and an objective of 100 additional new taxis per year until the Fund ends (total of 400 new taxis).

- Scrappage incentive/premium programme: the objective of this programme, which is supported by the World Bank, is to help introduce 2,000 new taxis and 1,000 new mini-buses in Abidjan. It will also include the development of a scrapping yard, to be managed by the private sector. The yard will be under a leasing contract, with the infrastructure financed by the public sector and/or international partners. The project should also pave the way for a larger incentive programme targeting households.

3.5.3 OTHER TRANSPORT-RELATED POLICIES

To reduce pollution, the government implemented a decree limiting the age of vehicles imported into the country and, in coordination with the CEPICI (Côte d'Ivoire Investment Promotion Centre), an initiative requiring transport-related informal structures to establish a transport company to formalize the sector. As part of this initiative, the Government is providing trainings on how to create and manage a company. However, the overall ecosystem still needs to be developed to modernize the country's transport sector.

3.6 ENERGY SECTOR INSTITUTIONS AND INSTITUTIONAL FRAMEWORK

Côte d'Ivoire's energy sector is composed of several key institutions. The following is a summary of government institutions present in the sector that shape the overall direction of the energy sector:

Table 7: Government institutions and institutional framework in the energy sector

INSTITUTION	DESCRIPTION
Ministère du Pétrole, de l'Energie et du développement des Energies renouvelables	The MPERE is responsible for implementing and monitoring the government's petroleum, electricity and renewable energy development policy. Overall, the Ministry initiates and leads energy policies.
Ministère des Transports	The Ministry of Transports is responsible for implementing and monitoring the government's road, railway, port and airway policy. Overall, the Ministry initiates and leads transport policies.
Direction Générale de l'Energie	The Directorate General of Energy is responsible for (1) coordinating and planning national energy policy; (2) developing and monitoring legislation and regulations related to electricity and renewable energy; and (3) managing the use of energy resources. Overall, the Directorate General implements and manages energy policies.
Direction Générale des Transports Terrestres et de la Circulation	The Directorate General of Land Transport and Traffic is the administrative structure in charge of supervising road and rail freight and passenger land transport. It is also responsible for guiding and implementing national land transport and road traffic policies.
Energies de Côte d'Ivoire (CI-Energies)	CI-Energies (Energies of Côte d'Ivoire) is a state-owned public utility responsible for managing state-owned energy-related assets, ensuring the financial balance of the energy sector, and monitoring the management of purchasing functions and power flows.
Autorité Nationale de Régulation du secteur de l'Electricité (ANARE-CI)	ANARE-CI (National Authority for Electricity Sector Regulation) is a public entity responsible for ensuring that the electricity sector complies with laws and regulations in force.
Direction de l'Electrification Rurale au sein de la Direction Générale de l'Energie auprès du Ministère du Pétrole, de l'Energie et du Développement des Energies Renouvelables	The Directorate for Rural Electrification is part of the Directorate General of Energy, within the MPERE, and is responsible for rural electrification, in cooperation with CI-Energies.
Direction de la Maîtrise de l'Energie et des Energies Renouvelables au sein de la Direction Générale de l'Energie auprès du Ministère du Pétrole, de l'Energie et du Développement des Energies Renouvelables	The Directorate for Energy Efficiency and Renewable Energies is part of the Directorate General of Energy, within the MPERE, and is responsible for implementing government policy on renewable energy and energy efficiency.
Compagnie Ivoirienne d'Electricité (CIE)	CIE (Ivorian Electricity Company) is a private corporation, partially government owned (15 percent), that is responsible for electricity generation, transmission and distribution operation in Côte d'Ivoire through an affermage (delegated management) contract.
Centre de Promotion des Investissements en Côte d'Ivoire (CEPICI)	The CEPICI (Côte d'Ivoire Investment Promotion Centre) is in charge of coordinating and streamlining all government initiatives and actions related to investment promotion and private sector development.
Société des Transports Abidjanais (SOTRA)	The Abidjan Transport Company (SOTRA) is a structured operator operating the public transit service, and some additional services, under a concession agreement.

3.7 OVERALL BUSINESS ENVIRONMENT

3.7.1 MACROECONOMIC ENVIRONMENT

Côte d'Ivoire has experienced brisk economic growth in recent years, making the country one of the fastest growing in the world.[39] This performance has been driven by significant external demand for agricultural and oil products and by stronger domestic demand resulting from major investment projects and household consumption.[40] However, in 2017, as cocoa prices fell, oil prices rose, social tension increased and the country's budget deficit reached 4.2 percent of GDP, before improving to an estimated 3.8 percent in 2018. [41] With Eurobonds issued in 2017 and 2018, Côte d'Ivoire's public debt rose to 48.2 percent. Deflation followed in 2019, due to favourable supply conditions that have led to falling food and energy prices. Moreover, potential future climate change impacts, such as erratic rainfall patterns leading to a shortage of local food supplies, could add downside risks to this forecast. In addition, Côte d'Ivoire's membership in the CFA franc zone has been said to contain inflationary pressures, but the announcement that the currency will be replaced creates uncertainty regarding the outlook.

The Covid-19 pandemic is expected to affect Côte d'Ivoire's economy severely. Real GDP is projected to contract by 1.6 percent in 2020, before making a partial recovery in 2021.[42] This will be driven primarily by decreased export volumes, coupled with a lagging business environment leading to a contraction in fixed investment and private consumption. While stronger growth can be expected in 2022-2024, it will remain lower than the pre-pandemic expectation. Côte d'Ivoire recorded annual average economic growth of 8.6 percent during 2012-2018.[43] This was mainly due to the significant increase in cocoa production, as about one-quarter of Côte d'Ivoire's population depends on the cocoa industry.[44] However, there is little scope for further production increases today, which will slow the country's economic growth in coming years, compared to the post-conflict period. Thus, while real GDP is expected to resume growing in 2021, the pace will remain weak at 1.3 percent and then slowly accelerate to an annual average of 4.9 percent in 2022-2024.[45]

The pandemic will also have an impact on the country's deficit, which is expected to increase to 5.7 percent of GDP in 2020. Public debt is expected to remain high in the coming years.[46] The current account deficit will also be affected, as it is expected to increase from an estimated 3.5 percent of GDP in 2019 to 5.5 percent of GDP in 2020, due primarily to the declining trade surplus.[47]

Before the Covid-19 pandemic, the government action was based on the 2016-2020 National Development Plan. It focuses primarily on supporting structural reforms, including by maintaining high levels of infrastructure investment and stimulating job creation.[48] While the current pro-market policy will technically remain in place until the end of 2020, no further progress is likely. Future policies will probably focus on addressing the Covid-19 pandemic and easing its impact on the domestic economy. In addition to the $2.6 billion governmental economic, social and humanitarian response plan unveiled in March 2020, the country also received an emergency disbursement of $886 million from the IMF in April 2020.[49] Moreover, the response to the Covid-19 outbreak, combined with the upcoming presidential elections, could create an uncertain climate for private investments, as the risk of renewed post-election tensions/crisis remains undeniable.[50]

On the fiscal front, while the Government of Côte d'Ivoire made great efforts to reduce the country's deficit by improving the efficiency of tax collection in 2019, the Covid-19 outbreak will impact public finances by increasing the country's fiscal deficit in 2020. The deficit is expected to increase from an estimated 3 percent of GDP in 2019 to 5.7 percent of GDP in 2020.[51] Spending related to the government's emergency response plan, which will force the authorities to set aside previous plans to rationalize current spending, is the main

39 World Bank Group. *The World Bank in Côte d'Ivoire*. **https://www.worldbank.org/en/country/coteCôtedivoire/overview.**
40 African Development Bank. 2019. *African Economic Outlook 2019.*
41 Ibid.
42 Economist Intelligence Unit. 2020. *Country Report, Cote d'Ivoire.*
43 Economist Intelligence Unit. 2019. *Country Report, Côte d'Ivoire.*
44 Ibid.
45 Economist Intelligence Unit. 2020. *Country Report, Cote d'Ivoire.*
46 Ibid.
47 Ibid.
48 African Development Bank. 2019. *African Economic Outlook 2019.*
49 Economist Intelligence Unit. 2020. *Country Report, Cote d'Ivoire.*
50 World Bank Group. *The World Bank in Côte d'Ivoire*. **https://www.worldbank.org/en/country/cotedivoire/overview.**
51 Economist Intelligence Unit. 2020. Country Report, Cote d'Ivoire.

cause of this increase. Moreover, the presidential election in 2020 and the legislative election in 2021 are also expected to increase Côte d'Ivoire's deficit. The deficit is then expected to decline gradually starting in 2022, as spending pressure is expected to ease. Côte d'Ivoire's public debt is projected at about 59.5 percent of GDP in 2021, before dropping to 51.4 percent of GDP in 2024.[52]

Côte d'Ivoire's monetary policy is currently managed by the Central Bank of West African States (Banque Centrale des Etats de l'Afrique de l'Ouest, BCEAO), which controls inflation and maintains the CFA franc's peg to the euro. The policy is driven primarily by the availability of and trend in foreign exchange reserves, which have started to rebound after falling rapidly during the 2014-2016 oil price slump, and by the monetary policy of the European Central Bank (ECB). In September 2019, the ECB announced an easing package, including a small cut in the deposit rate and another round of quantitative easing, and that it would maintain the reference rate. To provide massive liquidity in the face of the Covid-19 outbreak, the BCEAO cut its main policy rate from 3.5 percent to 3.25 percent at the end of March 2020.[53] From 2022, that rate is expected to rise gradually, as the ECB will probably tighten its monetary policy and domestic inflationary pressures are likely to mount. In December 2019, Côte d'Ivoire announced that the CFA franc will be replaced by a new currency, the eco, in 2020. When that happens, the Bank of France will no longer hold 50 percent of Côte d'Ivoire's reserves. Thus, the country will be able to invest its money freely and France will withdraw from the decision-making and management bodies of the West African Monetary Union (WAMU). However, the eco will remain pegged to the euro and the Bank of France will continue to guarantee the currency's convertibility, so risks will remain limited.[54]

This suggests that, overall, the Covid-19 pandemic will have severe impacts on Côte d'Ivoire's economic performance. Before the outbreak, the country's macroeconomic environment appeared to be stable and relatively favourable for private sector investment. However, the pandemic and the upcoming presidential election represent significant near-term risks for private sector investment.

Mainstreaming climate action into fiscal policies, as the Coalition of Finance Ministers for Climate Action has proposed, could help the country recover from this crisis. The Coalition recently proposed a set of principles for a stimulus package that would provide the right balance between sustainability and investment strategy. Côte d'Ivoire has endorsed the principles.

Coalition of Finance Ministers for Climate Action and recovery principles

In April 2019, governments from over 20 countries launched the Coalition of Finance Ministers for Climate Action, which recognizes the challenges posed by climate change, the unique capacity of the world's finance ministers to address them, and the ways in which collective engagement could strengthen these efforts. The Helsinki Principles recognize the importance of finance to achieve climate action goals.

In July 2020, the Coalition published guidance related to climate action for the post-pandemic future.[55] It emphasizes the importance of finance for recovery and long-term transformation, while recognizing that macro-fiscal contexts are more complex today than before the crisis. The document acknowledges that emerging economies should anticipate the substantial investments needed to drive the transformation to a low-carbon climate-resilient economy.

In this context, leveraging international climate finance to unlock fiscal space and leverage private finance will be crucial to achieve the goals set by the Paris Agreement and in all NDCs. Efforts to shift the financial system must also continue, including on reporting (Task Force on Climate-Related Financial Disclosures), green taxonomies, risk management and returns.

Aligning national priorities, economic and fiscal policies on these principles could help Côte d'Ivoire attract private sector investment and achieve its climate goals in the energy sector. The country's detailed performance is presented in the following subsections.

52 Ibid
53 Ibid.
54 George Ott. 2020. Op-Ed: From CFA franc to "eco", what you need to know about West Africa's new currency. CNBCAfrica. **https://www.cnbcafrica.com/news/west-africa/2020/01/10/op-ed-from-cfa-franc-to-eco-what-you-need-to-know-about-west-africas-new-currency/.**
55 The Coalition of Finance Ministers for Climate Action. 2020. *Better Recovery, Better World: Resetting climate action in the aftermath of the COVID-19 pandemic.*

3.7.2 COUNTRY RISK

Based on the June 2020 risk assessment conducted by the Economist Intelligence Unit (EIU), Côte d'Ivoire has a BB rating for overall country risk.[56] This suggests that despite the risk of election-related tensions and the Covid-19 outbreak, Côte d'Ivoire still offers attractive investment opportunities.

	SOVEREIGN RISK	CURRENCY RISK	BANKING SECTOR RISK	POLITICAL RISK	ECONOMIC STRUCTURE RISK	COUNTRY RISK
RATING	B	BB	BB	B	CCC	BB

3.7.2.1 SOVEREIGN RISK

While Côte d'Ivoire has obtained access to financing and achieved robust economic growth over the past few years, it must address significant challenges to alleviate its sovereign risk: twin fiscal and current account deficits; rising debt stock, opaque public finance management; potential political tensions accompanying the upcoming presidential election; and an anticipated economic recession in 2020 resulting from the global Covid-19 shock. Moreover, the deficit is expected to remain relatively large, due to the upcoming presidential election and accompanying increased spending pressure.

3.7.2.2 CURRENCY RISK

The EIU assesses Côte d'Ivoire's currency risk as relatively low because the CFA franc is pegged to the euro. Moreover, private investors are said to rely on its convertibility because the French Treasury guarantees the CFA franc. The new currency, the eco, is also expected to be pegged to the euro and the Bank of France will continue to guarantee its convertibility. Pegging both of those currencies to the euro constitutes a risk, as it allows an economic crisis in the euro zone to spread directly to Côte d'Ivoire.

3.7.2.3 BANKING SECTOR RISK

Côte d'Ivoire's banking sector benefits from the rapid expansion of credit as a share of GDP growth. This underscores the availability of profitable lending opportunities. However, the high level of profits set aside to cover potential losses (provisioning), combined with increased capital requirements to address regulatory requirements, are preventing the sector from developing. The nonperforming loan (NPL) ratio, which is declining but still high, acts as a drag on the current situation. Credit information bureaus have expanded in recent years but as the credit analysis process remains slow, banks' capacity to assess risk is expected to remain weak in the medium term. Moreover, since the Covid-19 crisis, bank portfolios show an increasing share of loans to sectors that have been deeply affected by lockdown measures and low external demand (hospitality, transport and construction). In response to the pandemic, the BCEAO has increased liquidity injections to the local financial system to support repayment capacity among struggling firms.

3.7.2.4 POLITICAL RISK

The EIU predicts that the next election, scheduled for October 2020, is likely to result in levels of uncertainty or violence similar to those experienced in the 2011 post-election crisis. The potential return of former President Laurent Gbagbo could constitute a potential political risk. Although the current president, Alassane Ouattara, declared that he would not run for a third term, the outcome of the upcoming presidential election remains highly uncertain. Moreover, Côte d'Ivoire also faces threats of terrorism, experiencing sporadic attacks by armed elements and Islamic terrorists, posing risks to its overall economic structure.

3.7.2.5 ECONOMIC STRUCTURE RISK

Côte d'Ivoire's economy still depends heavily on cocoa and oil for foreign exchange earnings. This exposes the country to significant price shocks in these industries, with the cocoa industry subject to the effects of

56 Economist Intelligence Unit. 2020. *Country Risk Service, Côte d'Ivoire.*

adverse weather. Together with strong import demand, the situation has produced current account deficits in recent years. Moreover, the country's dependence on external debt to finance its twin fiscal and current account deficits exposes creditors to significant risks.

3.7.3 EASE OF DOING BUSINESS

The business environment is one of the most important factors when considering local and foreign investments. Indeed, investors tend to consider both existing market opportunities and a country's ease of doing business. Regulations, including business regulation and property rights protection, have an impact on economic growth and, therefore, must be considered.

The Doing Business Project, developed by the World Bank Group, measures business regulations and their enforcement in 190 countries and 11 cities around the world. It covers 12 areas of business regulation that affect small and medium-size domestic firms in each country, including starting a business, dealing with construction permits, getting electricity, registering property, getting credit, protecting minority investors, paying taxes, trading across borders, enforcing contracts, resolving insolvency and employing workers.

Côte d'Ivoire ranked 110th out of 190 countries in the 2020 report[57] The country is improving both its ranking and score from year to year. In 2019, Côte d'Ivoire was cited as one of countries with the most notable improvement, due specifically to business digitalization, with the introduction of online systems for filing corporate income tax and value-added tax (VAT) returns.[58]

Table 7 presents Côte d'Ivoire's scores and rankings over the last five years.

Table 8: Côte d'Ivoire's Doing Business score and ranking (2016-2020)

YEAR	SCORE	RANKING
2020	60.7	110
2019	58	122
2018	53.71	139
2017	52.31	142
2016	50.93	142

Source: World Bank Group. 2018. *Doing Business 2019, Training for Reform*.

This section provides an overview of important indicators for doing business in Côte d'Ivoire, based on the Doing Business 2020 Report.

3.7.3.1 STARTING A BUSINESS

This indicator measures the procedures, time, cost and paid-in minimum capital requirement for a small- to medium-sized limited liability company to start up and formally operate in each economy's largest business city.

Côte d'Ivoire is ranked 29th, making it the highest-ranked country in sub-Saharan Africa, with a relatively wide lead (the next country, Benin, ranks 65th). This ranking is due to the very limited number of procedures, limited time and low cost associated with starting a business. Ease of starting a business is relevant in developing countries, as the mobilization of local SMEs is expected in the energy sector.

3.7.3.2 DEALING WITH CONSTRUCTION PERMITS

This indicator tracks the procedures, time and cost to build a warehouse, including obtaining necessary licenses and permits, submitting all required notifications, requesting and receiving all necessary inspections, and obtaining utility connections. It also measures the building quality control index, evaluating the quality of building regulations, the strength of quality control and safety mechanisms, liability and insurance regimes, and professional certification requirements.

57 World Bank Group. 2019. *Doing Business 2020, Economy Profile Côte d'Ivoire.*
58 World Bank Group. 2018. *Doing Business 2019, Training for Reform.*

Côte d'Ivoire ranks 152th, lower than the regional average. While the cost of procedures is low compared to other sub-Saharan African countries (5.9 percent of warehouse value for Côte d'Ivoire compared to 8.9 percent for sub-Saharan African countries), the time required for the procedures remains high. Côte d'Ivoire's rank highlights potential barriers to achieving the NDC targets in the energy sector. As construction permits are required to build renewable energy power plants, the time needed to obtain them can hamper the process. However, Côte d'Ivoire's building quality control index is close to that of a high-income OECD country. This is a good start, as building quality control is important when considering building energy efficiency.

3.7.3.3 GETTING ELECTRICITY

This indicator measures the procedures, time and cost required for a business to obtain a permanent electricity connection for a newly constructed warehouse. Reliability of supply, transparency of tariffs and the price of electricity are also measured through the reliability of supply and transparency of tariffs index.

Côte d'Ivoire is ranked 141th, scoring higher than the regional average, but below Ghana (which ranks 79th). While the time needed to get electricity is low (even lower than the high-income OECD country average), the number of procedures remains high (eight procedures in Côte d'Ivoire, compared to an average of 5.2 for sub-Saharan African countries). Reliability of supply and transparency of tariff index is quite high (five, compared to an average of 1.6 for sub-Saharan African countries). This is a key indicator, as access to electricity is an important factor when considering economic and business development.

3.7.3.4 REGISTERING PROPERTY

This indicator examines the steps, time and cost involved in registering property, assuming the standard case of an entrepreneur who wants to purchase land and a building that is already registered and free of title dispute. It measures the quality of land administration system based on five indicators: 1) infrastructure reliability; 2) information transparency; 3) geographic coverage; 4) land dispute resolution; and, 5) equal access to property rights.

Côte d'Ivoire ranks 112th, scoring higher than the regional average but below Ghana (which ranks 111th), with good scores in terms of procedures, time and cost requirements, and quality of land administration index compared to other sub-Saharan African countries. Renewable energy power plants require large amounts of land, so the ease of registering property is a highly relevant indicator for energy sector development in Côte d'Ivoire.

3.7.3.5 GETTING CREDIT

This indicator explores the strength of credit reporting systems and the effectiveness of collateral and bankruptcy laws in facilitating lending.

Côte d'Ivoire ranks 48th, with the highest score on the depth of credit information index. However, it also has the lowest score for credit registry coverage (zero percent of adults). Involving the private sector in the energy sector requires significant investment in energy-related technologies. It is therefore crucial to assess the ease of getting credit.

3.7.3.6 PROTECTING MINORITY INVESTORS

This indicator measures the strength of minority shareholder protections against directors' misuse of corporate assets for personal gain, as well as shareholder rights, governance safeguards and corporate transparency requirements that reduce the risk of abuse.

Côte d'Ivoire ranks 120th. While it scores higher than the regional average, its ranking remains low. The country performs better than the high-income OECD country average in terms of extent of disclosure, but also performs poorly in terms of extent of director liability. These can constitute barriers to local and foreign investment.

3.7.3.7 PAYING TAXES

This indicator records the taxes and mandatory contributions that a medium-size company must pay or withhold in a given year, as well as the administrative burden of paying taxes and contributions and complying with post-filing procedures (VAT refund and tax audit).

Côte d'Ivoire scores higher than the regional average, but remains relatively low at 114th position. While the number of payments and time are below the regional average, the total tax and contribution rate remains significant, at 50.1 percent of profit. This is a significant burden when conducting business and trying to incentivize investments.

3.7.3.8 TRADING ACROSS BORDERS

This indicator records the time and cost associated with the logistics of exporting and importing goods. It measures the time and cost (excluding tariffs) associated with three sets of procedures – documentary compliance, border compliance and domestic transport – within the process of exporting or importing a shipment of goods.

Côte d'Ivoire scored lower than the regional average, ranking 163th. The amount of time to export for border compliance is among the highest, at 239 hours, while the average for sub-Saharan African countries is 97.1 hours. Côte d'Ivoire must improve all aspects of this indicator as they can constitute significant barriers when energy-related equipment and technologies need to be imported from abroad.

3.7.3.9 ENFORCING CONTRACTS

This indicator measures the time and cost to resolve a commercial dispute through a local first-instance court and the quality of judicial processes index, evaluating whether each economy has adopted good practices that promote quality and efficiency in the court system.

Côte d'Ivoire ranked 94th, but with average scores. While it performs better than the high-income country average in terms of time, cost remains high, representing 41.7% of claim value. This cost represents a significant burden when conducting business in Côte d'Ivoire.

3.7.3.10 RESOLVING INSOLVENCY

This indicator measures the time, cost and outcome of insolvency proceedings involving domestic legal entities. The variables are used to calculate the recovery rate, which is recorded as cents on the dollar recovered by secured creditors through reorganization, liquidation or debt enforcement (foreclosure or receivership) proceedings.

Côte d'Ivoire ranked 85th, with higher scores than the regional average but low scores globally. Its recovery rate is higher than the sub-Saharan African country average (36.8 percent) and remains relatively low compared to the high-income OECD country average (70.2 percent). Resolving insolvency is an important indicator, as it can have a major influence when considering whether to start a business.

In 2019, Côte d'Ivoire implemented two major business reforms. The first simplifies tax payments by implementing an electronic filing and payment system and an online case management system to process VAT cash refunds. The second makes it easier to enforce contracts by publishing reports on commercial court performance and case progress. Côte d'Ivoire is thus improving its business environment each year.

3.8 ENABLING ENVIRONMENT FOR CROSS-BORDER AND FOREIGN INVESTMENTS

The enabling environment for cross-border and foreign investments constitutes another important factor in investment decisions for foreign investors. If a country's foreign investment-related regulations are considered unfavourable, foreign investors may perceive that greater risks exist there. For example, some investors may view restrictions on the payment of dividends to foreign investors, repatriation of funds and tax issues as constraints.

This section provides an overview of important laws and regulations pertaining to cross-border and foreign investment in Côte d'Ivoire, as well as an analysis of gaps and challenges for foreign investment.

3.8.1 REGULATIONS RELATED TO FOREIGN DIRECT INVESTMENT IN CÔTE D'IVOIRE

Côte d'Ivoire is a member of the Organization for the Harmonization of Corporate Law in Africa (OHADA), a system of corporate law and implementing institutions adopted by a number of West and Central African nations. Its goal is to establish a modern and common legal framework for business activities through eight Uniform Acts applied directly in member states. The OHADA Uniform Act on Commercial Companies and Economic Interest Groups (UACCEIG) regulates corporate issues including formation, incorporation, management and dissolution of companies and supersedes all contradictory provisions of national legislation.

Côte d'Ivoire's Investment Code sets out the country's main direct foreign investment policy.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Increase investments in Côte d'Ivoire by providing relevant guarantees and incentives to investors.	• Guarantees and incentives for investment. • Incentives provided by geographical zones and industries. • Additional incentives to encourage local content • No caps on foreign investment.

INVESTMENT CODE, 2018

The Investment Code, 2018 (Law No. 2018-646 of 1 August 2018) regulates investment activities in Côte d'Ivoire. It provides the overall framework for the operations of the CEPICI and more broadly, ensures that foreign investors comply with the country's laws and regulations. It ensures fair and equitable treatment for foreign investors, unlimited access to foreign exchange, free transfer of assets subject to compliance with tax legislation and free access to raw materials and it guarantees the repatriation of expatriate workers' compensation.

For the purpose of the code, the country has been divided into three zones: Zone A corresponds to Abidjan; Zone B corresponds to administrative centres (*chef-lieux*); and Zone C refers to other areas. The code also provides a list of activities that are eligible for incentives:

- Category 1: Agriculture, agro-industry, health and hospitality industry (above specific thresholds);
- Category 2: All sectors excluding category 1 plus trading, banking/financial, non-industrial construction and services.

The Investment Code established two investment regimes detailed in Table 8.

Table 9: Investment regimes in Côte d'Ivoire

INVESTMENT REGIME	INVESTMENT DECLARATION REGIME	INVESTMENT APPROVAL REGIME
INVESTMENT TYPE	Business creation (only during the operating phase)	Business creation and development
INVESTMENT THRESHOLD	N/A	• Large companies: FCFA 200 million (excluding VAT) • SMEs: FCFA 50 million (excluding VAT)
INCENTIVES	Tax cuts applicable to: • Corporate income tax, including the minimum flat-rate tax • Patent and license contributions • Property tax • VAT • Employer's contribution for local employment	**Implementation phase:** • Exemption from customs duties, excluding statistical fee and Community and continental levies • Temporary suspension of VAT on the acquisition of goods, services and works **Operations phase:** Tax credit attributable to: • Corporate income tax, including the minimum flat-rate tax • Patent and license contributions • Property tax • VAT • Employer's contribution for local employment

The percentage and duration of tax cuts and exemptions depend on the location and category of the activity (zone A, B, and C; category 1 or 2).

Although foreign investors have no obligation to invest in conjunction with local entities or to recruit local workers in general, they are encouraged to do so. The Investment Code offers tax cuts to foreign investors that recruit local workers, open equity to Ivoirians and propose subcontracts to local companies. These incentives include:

- Two percent tax cut when more than 80 percent of workers are Ivoirian (executives and non-executives);
- Two percent tax cut when at least 25 percent of subcontracts are provided to local companies; and,
- Two percent tax cut when at least 15 percent of equity is owned by Ivoirians.

The Code sets out important details related to investor protection. It guarantees, among other things:

- access to raw material;
- remittances, both from the company and its staff;
- asset transfers, if complying with local law; and,
- No restrictions in the appointment of executives.

While Côte d'Ivoire has no sector-specific regulations on foreign direct investment (FDI) and no cap on investment amount, investors willing to import/export products must register with the Department of External Trade of the Ministry of Commerce. In addition, Côte d'Ivoire's legislation requires investors to conduct an environmental and social impact study for projects that will be implemented in certain sensitive areas, such as environmental hotspots, protection perimeters for water points, and areas of scientific, cultural and touristic interest.

Côte d'Ivoire does impose general restrictions on FDI. For instance, only citizens of and public or private entities based in Côte d'Ivoire may own land in rural areas.

The CEPICI serves as a one-stop shop to encourage FDI in Côte d'Ivoire and provides guidance to foreign investors. Investors using CEPICI's services may benefit from reduced business registration fees. The agency also provides an online system to deal with formalities and apply for a license, making it possible for investors to start a business in 24 hours.

OHADA UNIFORM ACT, 2014

OHADA's UACCEIG is the main text governing the creation and operation of businesses in Côte d'Ivoire. First adopted in 1997, the Act was revised in 2014 to introduce the *société par actions simplifiés* (simplified joint stock company), based on the French regime, which places no minimum capital requirement on companies.

The scope of application and recognized corporate structures under the Act are presented below:

SCOPE OF APPLICATION	RECOGNIZED CORPORATE STRUCTURES
• Establishment of a company • Operation of a company • Civil liability of corporate management • Complex corporate structures • Transformation of corporate status • Mergers and acquisitions • Dissolution and winding up • Nullity of a company and company acts • Formalities and publications	• Private partnership • Limited partnership • Société à responsabilité anonyme (private limited liability company, SARL) • Société anonyme (public limited liability company, SA) • Joint venture • De facto partnership • Economic interest group

The Act also details the procedures required to register each form of corporate structure.

BILATERAL INVESTMENT TREATIES

Côte d'Ivoire has also signed and ratified bilateral investment treaties (BIT) with several countries. As of August 2020, they include Belgium, Luxembourg, Denmark, Germany, Ghana, Italy, Netherlands, Sweden, Switzerland, Tunisia and the United Kingdom.[59] These treaties establish the terms and conditions for private investment by nationals and companies of one state in another state and provide guarantees for investors, such as protection from expropriation.

3.8.2 CAPITAL MARKET LAWS AND REGULATIONS

Capital markets are important for foreign investment, as they facilitate the buying and selling of securities. Côte d'Ivoire is part of a regional stock exchange, the Regional Stock Market (BRVM), which includes eight member countries of the UEMOA. BRVM is responsible for the quotation and negotiation of transferable securities and it supplies market information to participants. The Regional Council of Public Savings and Financial Markets (CREMPF) is the financial market authority of the West African Monetary Union (WAMU) and an oversight body that manages IPOs and regulates market participants. It reports directly to the WAMU Council of Ministers.

Listing rules and market regulations are decided at the regional level. The general regulation on the organization, functioning and supervision of the WAMU regional financial market (*Règlement general relatif à l'organisation, au fonctionnement et au contrôle du marché financier regional de l'UMOA*) is the main regulation affecting foreign investors on the BRVM. In addition, CREMPF recently published guidelines for the issuance of green, social and sustainable bonds.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Provide the overall framework for foreign investment in capital markets in Côte d'Ivoire (UEMOA).	• Listing regulations and framework, approval process detailed regionally. • Guidelines for the issuance of green bonds.

59 https://icsid.worldbank.org/resources/databases/bilateral-investment-treaties

The listing rules cover the requirements for listing on the BRVM. Specifically, foreign companies that do not reside in the region may not be listed on the BRVM. Non-resident companies are those defined as having their main financial interests outside of the region, as well as companies and people residing abroad. However, foreign entities may sell investment products on the BRVM with pre-authorization from CREMPF.

The new CREMPF guidelines define green bonds as those whose proceeds are used to finance or refinance green, socially responsible or sustainable projects in the regional market. Issuers may be located outside that market if the projects are located within it. Although these are similar to the rules applicable to traditional securities, issuing green bonds requires additional information, including:

- type of security chosen by the issuer;
- projects to financed;
- selection criteria;
- project objectives;
- environmental and social impacts;
- selection process; and,
- use of proceeds.

3.8.3 BANKING SUPERVISION LAWS AND REGULATIONS AND OTHER REGULATIONS RELATED TO THE FINANCIAL SECTOR

The BCEAO is responsible for defining and implementing monetary policy and for organizing and monitoring the UEMOA banking and financial system, including Côte d'Ivoire's. The UEMOA Banking Commission, founded on April 24, 1990 and chaired by the BCEAO Governor, oversees the organization and supervision of the banking system within UEMOA.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Provide the overall framework for banking services and non-banking financial services in Côte d'Ivoire. • Provide the overall framework for non-bank lending in Côte d'Ivoire.	• Credit agreements outside of banking institutions are regulated regionally for the Uniform Act organizing securities. • This act provides guarantees protecting creditors by securing enforcement of debtors' obligations.

FRAMEWORK LAW ON BANKING REGULATION, 2010

This law applies to financial institutions providing credit services in the UEMOA, defined as banking institutions. It also applies to closed-end investment funds (fixed capital investment funds). The Decentralized Financial System covers other providers. Companies must obtain a license to provide the services covered under the law, including credit services. However, the law does not prohibit them from issuing securities. Banking institutions that are already licensed in other UEMOA countries must declare their intention to the BCEAO to set up in another UEMOA country.

The law applies similarly to foreign banks and does not impose specific conditions regarding capital and licensing that apply only to foreign entities. However, banking industry executives must be nationals of one of the UEMOA countries, unless exempted by the Ministry of Finance of the country where the institution is located.

LAW REGULATING DECENTRALIZED FINANCIAL SYSTEMS, 2007

This law applies to all institutions whose main objective is to provide financial services to people and companies lacking access to traditional banking services, except for financial services provided by cooperatives, which are regulated by a different set of regulations in each country.

The law applies similarly to foreign providers of financial services and does not impose specific conditions regarding capital and licensing that apply only to foreign entities. However, executives must be nationals of one of the UEMOA countries, unless exempted by the Ministry of Finance of the country where the institution is located.

UNIFORM ACT ORGANIZING SECURITIES, 2011

Because Côte d'Ivoire is a member of OHADA, the latter's uniform acts apply in the country. This Act provides guarantees that protect creditors by securing the enforcement of debtors' obligations. It created a new legal framework for pledges and important provisions related to the registration and enforcement of security interests and introduced securities agents. In case of payment default, the pledgee may resort to a forced sale at public auction or request allocation of the debtor's assets up to the amount of the secured obligations.[60] The act also introduces the possibility to agree beforehand that creditors become owners of pledged assets in case of default.

3.8.4 INSOLVENCY AND BANKRUPTCY RELATED-REGULATIONS AND PROCEEDINGS

OHADA sets up a system of uniform laws on bankruptcy and debt collection and rules governing business transactions in member countries. Côte d'Ivoire has adopted the OHADA framework on liquidation of business liabilities.

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Provide the overall framework for insolvency procedures in Côte d'Ivoire.	• Regional framework providing details on foreign proceedings. • Any creditor may file its claim at the main bankruptcy proceeding and at any secondary or territorial bankruptcy proceeding.

UNIFORM ACT ON BANKRUPTCY PROCEEDINGS

The Uniform Act on Bankruptcy Proceedings details procedures related to insolvency and preventing insolvency. The Act provides preventive procedures - conciliation and preventive settlement - to safeguard distressed companies and audit their liabilities before they become insolvent.

- Conciliation: The objective is to find an amicable agreement with the debtor's major creditors and co-contractors to relieve the debtor's difficulties;
- Preventive settlement: The objective is to support debtors in restructuring and to settle their liabilities. The decision to open a preventive settlement postpones all individual lawsuits for a maximum of three months to obtain payment of claims contracted prior to the procedure:
- Reorganization and assets liquidation: This procedure is available to any debtor in a state of insolvency. It details the proceedings, including the reorganization of assets and their liquidation. A trustee is appointed to support the reorganization and liquidation of assets. The decision to initiate such proceedings shall stay or prohibit individual lawsuits from all creditors who are part of the body of creditors, related to ordering the debtor to pay debts and terminate contracts; and,
- Personal bankruptcy: the objective is to pronounce personal bankruptcies.

The Act and decisions based on it are enforceable in other member countries. Any creditor may file its claim at the main bankruptcy proceeding and at any secondary or territorial bankruptcy proceeding.

The Act also provides details on foreign proceedings in the event that foreign entities need to open bankruptcy proceedings or if foreign bankruptcy proceedings and collection proceedings related to the same debtor are opened concurrently. It protects creditors seeking the liquidation of liabilities, including

60 Hogan Lovells. 2012. The revised *OHADA Uniform Act on security law.*

recognition of foreign bankruptcy proceedings and the choice of applicable jurisdiction. The Act also protects creditors' rights, irrespective of nationality.

3.8.5 FOREIGN EXCHANGE

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Provide the overall framework for foreign exchange in Côte d'Ivoire.	• Proceeds and interest in foreign currencies attributable to foreign investment may be transferred abroad through authorized banks and intermediaries. • Almost no restrictions on foreign currency, but some transactions require authorization from the Ministry of Finance and/or documentation.

UEMOA is responsible for foreign exchange regulation in Côte d'Ivoire. Regulation No 09/2010 on external financial relations with Member States of UEMOA provides the overall rules and regulations for foreign exchange. All foreign exchange transactions, movements of funds or payments between UEMOA and non-UEMOA member countries must be done through the BCEAO, post offices or authorized agents. Current payments, which include interest and dividends, shares and profits from companies and partnerships, operating income from businesses, and other regular return on capital, may be made freely.

Licensed intermediaries are authorized to make the following types of payments to foreign countries upon presentation of the necessary supporting documentation:

- debt payments, including for short term credits;
- transfers of proceeds from the liquidation of investments or the sale of foreign securities by non-residents; and,
- settlements required for foreign exchange derivative transactions or commodity derivative transactions.

The repayment of medium and long-term credit may require authorization from the Ministry of Finance. Each request must be accompanied by supporting documents attesting to the nature and reality of the operation.

Côte d'Ivoire's Investment Code also guarantees the right to access foreign currency.

3.8.6 TAX FRAMEWORK

Côte d'Ivoire's tax regimes are governed by the General Tax Code and Book of Tax Procedures. Table 9 presents the key taxes.

Table 10: Taxes applicable in Côte d'Ivoire

KEY TAXES	DESCRIPTION
CORPORATE INCOME TAX	• Ordinary regime: 25 percent for companies
WITHHOLDING TAXES	• Dividends paid by listed companies to residents and non-residents are taxed at 15 percent • Interest is subject to an 18 percent tax (5 percent and 10 percent for long- and short-term government bonds). • Management and professional fees, leases and royalties paid to a non-resident entity are subject to a 25 percent tax on 80 percent of gross income (effective tax rate of 20 percent). Royalties paid to residents are subject to the corporate income tax.
VALUE-ADDED TAX (VAT)	• 18 percent

Other significant taxes include a payroll tax (12 percent of expatriate staff gross payroll and 2.8 percent of local staff payroll) and social security contributions. To avoid profit transfers, local companies that belong to a multinational group must provide transfer pricing documentation.

Companies investing in specific zones, defined in the Investment Code, are eligible for tax cuts and exemptions, as detailed in table 10.

Table 11: Tax cuts and exemptions in Côte d'Ivoire

CATEGORY	ZONE	TAX CUTS AND EXEMPTIONS
CATEGORY 1 (AGRICULTURE, AGRO-INDUSTRY, HEALTH AND HOSPITALITY INDUSTRY	Zone A	50 percent and 75 percent reduction for five years for large companies and SMEs, respectively, on corporate income tax (CIT), business license tax, real estate tax and on employer contribution on salary.
	Zone B	Exemption from CIT, business license tax, real estate tax, employer contribution on salary, and dividend tax for five years, and 50 percent and 75 percent reduction for an additional five years for large companies and SMEs respectively.
	Zone C	Exemption from CIT, business license tax, real estate tax, employer contribution on salary, and dividend tax for 10 years, and 50 percent reduction for the same taxes for large companies for the following five years. Exemption from CIT, business license tax, real estate tax, employer contribution on salary, and dividend tax for 15 years for SMEs.
CATEGORY 2 (OTHER SECTORS, EXCLUDING TRADING, BANKING/ FINANCIAL SECTOR, NON-INDUSTRIAL CONSTRUCTION SECTOR AND SERVICES)	Zone A	25 percent on CIT (credit) for large companies and 37.5 percent for SMEs.
	Zone B	35 percent on CIT (credit) for large companies and 52.5 percent for SMEs.
	Zone C	50 percent on CIT (credit) for large companies and 75 percent for SMEs.

3.8.7 DISPUTES AND ARBITRATION

OBJECTIVES OF THE REGULATIONS	IMPLICATIONS FOR FOREIGN INVESTMENT
• Provide the overall framework for arbitration and litigation in Côte d'Ivoire.	• International arbitration follows international standards.

As an OHADA signatory country, Côte d'Ivoire has adopted the corporate law and arbitration procedures of the Conference of Constitutional Jurisdictions of Africa (CCJA). CCJA advises on the uniform application and interpretation of the common OHADA business law. It also reviews decisions of OHADA Member States' courts of appeal in cases involving application of OHADA business law and monitors arbitration proceedings conducted in accordance with the OHADA Uniform Arbitration Act. The Commercial Court of Abidjan can handle business cases, while mediation is available locally through the Ivoirian legal framework, in addition to the Commercial Court and the Arbitration Tribunal.

As Côte d'Ivoire is a signatory of the New York Convention of 1958 on the Recognition and Enforcement of Foreign Arbitral Awards, its local courts are obliged to enforce foreign arbitral awards. However, while judgments of foreign courts are recognized, they remain difficult to enforce in local courts.[61]

The Investment Code provides strengthened investment dispute settlement mechanisms, while promoting productive and socially responsible investment and local content requirements. The implementation of distinct dispute settlement mechanisms provides private investors the guarantee that its disputes will be settled legally and impartially.

3.8.8 SUMMARY OF FINDINGS FOR FOREIGN REGULATORY ENVIRONMENT

Overall, the regulatory environment for foreign investments in Côte d'Ivoire is supportive. There is no discrimination against foreign-owned businesses. The Investment Code provides a favourable framework

61 US Department of State, 2019. *2019 Investment Climate Statements: Cote d'Ivoire.*

for investment, with incentives provided to foster investment in specific geographic areas and industries. Similarly, foreign investors have no obligation to invest in conjunction with local entities or to recruit local workers in general, but are encouraged to do so.

Côte d'Ivoire benefits from well-established regional frameworks, such as OHADA and the UEMOA frameworks. Although investment in the banking sector is subject to specific requirements, such as obtaining a license for banking and financial activity in the country and prior consent from the Central Bank and the Ministry of Finance, regional regulations on the organization of securities provides guarantees protecting creditors by securing the enforcement of debtors' obligations.

There are no specific constraints on paying dividends to foreign investors, including in foreign currency, as per the regional regulations related to foreign exchange and the Investment Code. Although capital may be borrowed and repaid from abroad, in specific cases repayment may be subject to authorization by the Ministry of Finance.

Finally, as a member of OHADA and other international arbitration frameworks, Côte d'Ivoire has a framework for dispute resolution and arbitration, ensuring that settlements are recognized by international investors.

While Côte d'Ivoire successfully recovered from its 2011 post-election crisis and has benefited from a stable macroeconomic environment overall over the last few years, the Covid-19 pandemic is expected to have a major impact on the enabling environment for the private sector in the energy sector. The country will likely recover slowly and economic growth will resume in 2022, but will remain lower than pre-pandemic forecasts. Moreover, the risk of renewed political tensions after the October 2020 presidential election may prevent significant private sector investment until the outcome is known. In addition, while the country has already created policies to foster private sector investment in the energy sector, and the regulatory framework provides favourable conditions for FDI and cross-border investment in that sector, gaps and barriers still need to be addressed to advance private sector investment further.

4. PRIORITIZED SECTOR CONTEXT

The energy sector is the only sector for which Côte d'Ivoire has provided quantified sectoral targets in its NDC: to achieve 42 percent renewable energy in the energy mix by 2030. Several policy documents highlight the importance of private sector investment in tackling climate change. The private sector is already active in the energy sector, especially in the renewable energy subsector, where IPPs have dominated the market since energy production was liberalized in the 1980s. However, the country's energy sector is constrained by barriers and challenges that prevent investment from scaling up. This section presents the structure of each subsector by analysing its ecosystem and value chain, the current status of private sector engagement and investment, investment barriers and critical gaps, recommendations and entry points for private sector investment, and examples of best practices.

The ecosystem analysis focuses on providing an overview of the relationship between inputs and products for specific subsectors. It helps explain the business environment for private stakeholders in each subsector. The value chain analysis builds on the ecosystem analysis, providing an illustrative representation of the value chain stakeholders identified and their functions and an analysis of their relationships.

Together, these analyses provide a better understanding of how and where stakeholders and organizations are positioned within the ecosystem and the value chain and identify opportunities and engagement points for both public and private decision-makers.

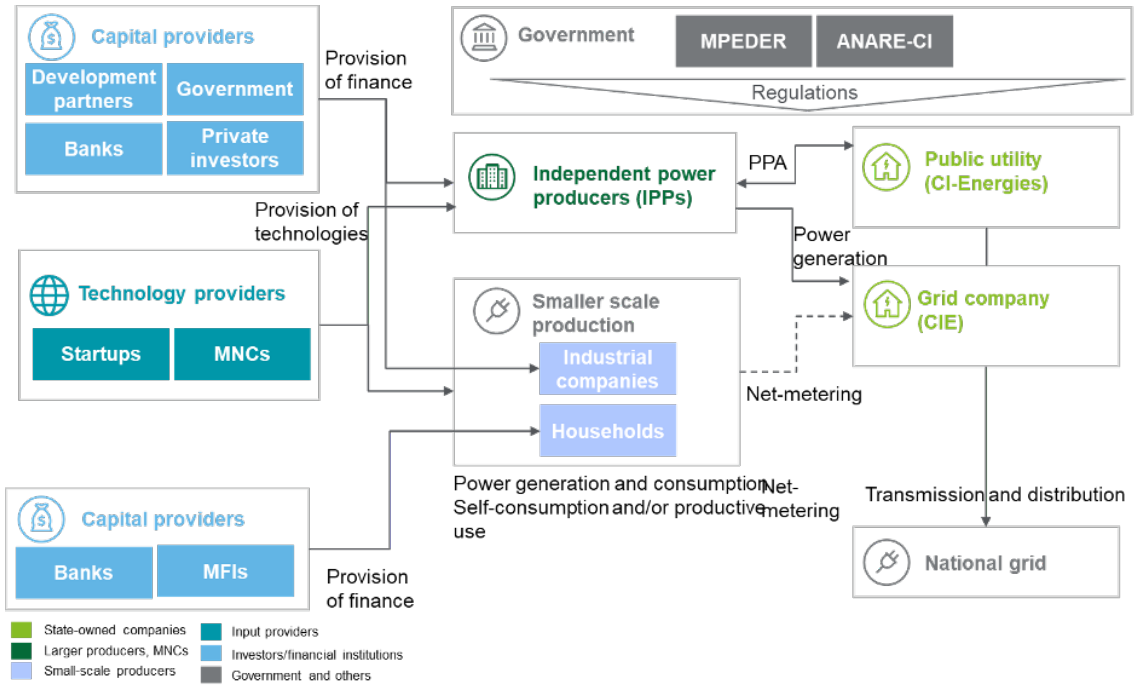
4.1 RENEWABLE ENERGY

Côte d'Ivoire seeks to achieve 42 percent renewable energy in the electricity mix by 2030, including through solar PV, hydro, wind and biomass cogeneration. Its targets also include mini-grid and off-grid solutions. This subsection analyses the renewable energy ecosystem and value chain Côte d'Ivoire.

4.1.1 ECOSYSTEM ANALYSIS

Figure 3 presents the renewable energy power generation and solar home PV ecosystem in Côte d'Ivoire.

Figure 3: Solar PV power generation and solar home PV ecosystem in Côte d'Ivoire



The renewable energy power generation and solar home PV ecosystem may be divided among input providers, electricity producers and end users. Input providers include capital providers and technology providers, mainly solar power plant developers and solar home system (SHS) solution providers and developers. End users include national grid users through the grid managed by CIE, households, and commercial and industrial (C&I) producers, which self-consume the off-grid electricity produced.

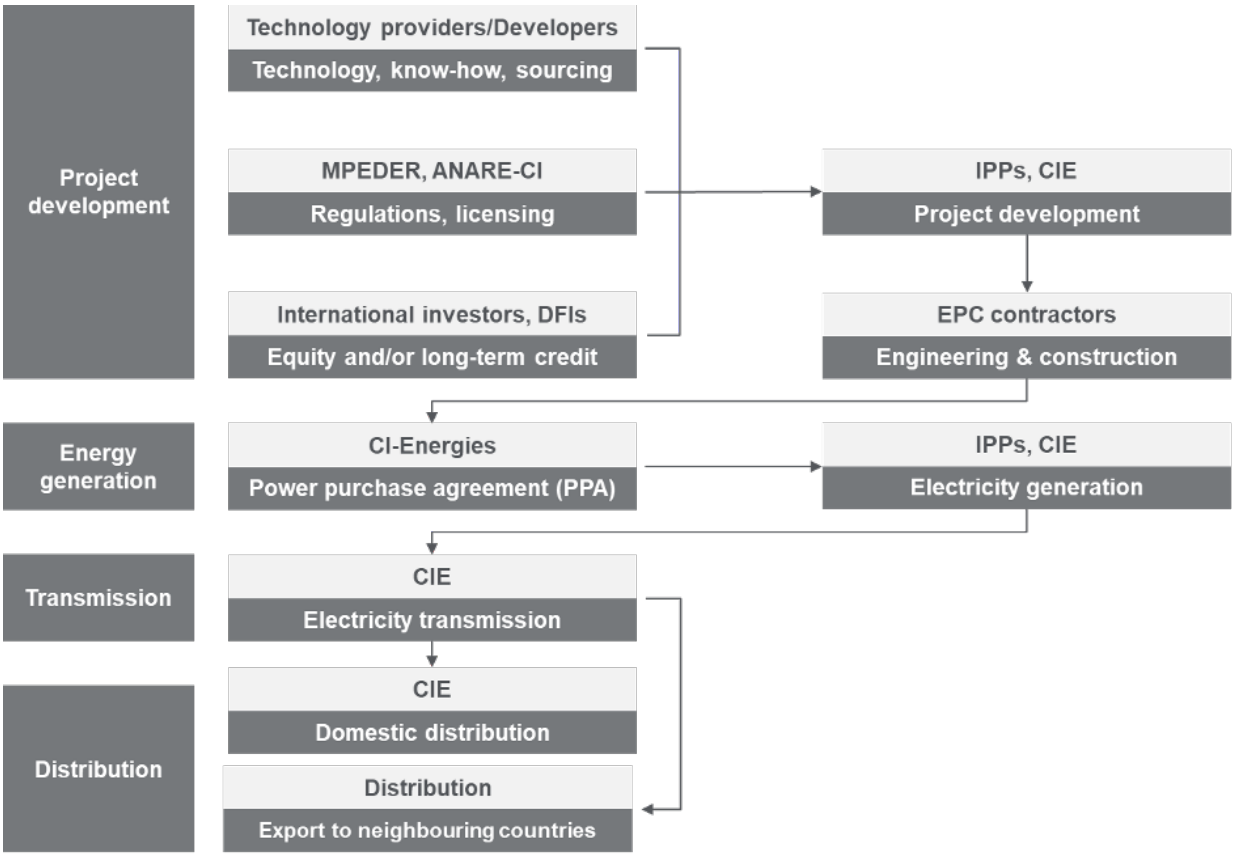
In Côte d'Ivoire, power production from renewable energy may be grouped into three categories: utility-scale renewable energy power producers; households; and, industrial companies. Each category has its own needs in terms of capital provision, uses different sources of energy and has different uses for renewable energy. Utility-scale producers seek to develop long-term projects and, thus, require long-term capital. They also have significant links to other stakeholders in the ecosystem, such as the government and public utilities. They use a variety of energy sources, including hydropower, solar and wind.

Households and industrial companies develop projects on a smaller scale, usually to generate power for self-consumption and sell the surplus to the grid. The application of net-metering regulations, which are yet to be clearly defined, will be important for these customers. Households mainly leverage solar panels, while interest in biomass is increasing among industrial companies.

4.1.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO ON-GRID UTILITY-SCALE RENEWABLE ENERGY GENERATION IN CÔTE D'IVOIRE

Figure 4 shows the value chain analysis of on-grid, utility-scale renewable energy generation in Côte d'Ivoire.

Figure 4: Value chain for on-grid energy generation in renewable energy in Côte d'Ivoire



IPPs are the key stakeholders for on-grid renewable energy generation in Côte d'Ivoire. Private developers and IPPs are involved in developing utility-scale renewable energy generation. They bring other key stakeholders together around potential projects, including technology providers, engineering, procurement and construction (EPC) contractors, financers and public utilities.

Investors in utility-scale projects are usually development finance institutions (DFIs) and other international investors that can provide equity and long-term debt. Projects are structured financially with private investors. PPA terms and conditions are directly agreed with CI-Energies (public utility) on a case-by-case basis. Through MPERE and ANARE-CI, the Government has an impact on projects via regulation and by issuing licenses to IPPs.

After project initiation, IPPs work with EPC contractors to commission the power plant. After commissioning, IPPs operate the plant and sell electricity to the grid based on the conditions established under the PPA. Electricity is then distributed to both the domestic grid and regional markets.

The main gap in the on-grid market value chain is the lack of long-term capital for project developers.

DEVELOPERS/INDEPENDENT POWER PRODUCERS

IPPs are the key players in private sector investment in the renewable energy subsector, developing utility-scale power plants. Côte d'Ivoire was one of the first countries in sub-Saharan Africa to privatize its electricity sector and introduce IPPs as early as the 1980s. Its strong reliance on IPPs has provided the country with the energy needed to meet increased electricity demand, even during the civil war. In addition, payment to IPPs is guaranteed as they are the first in line in a waterfall structure payment order. IPPs are therefore expected to play an important role in the development of renewable energies. Moreover, the EU is supporting the tender offer process for the selection of renewable energy IPPs (including pre-feasibility studies, coordination/ support of the tender offer process, and legal and financial support for developing PPAs), as part of the Energos 2 program. This should increase the involvement of IPPs in providing renewable energy to the grid.

IPPs initiate projects, develop them and are in charge of operations once the power plant is commissioned. During the project development stage, IPPs are supported by technology providers/developers and investors. These technology providers/developers support the sourcing of the project idea and provide the technology and know-how required for project initiation and development. Technology providers and IPPs are often interlinked. Table 11 provides details of renewable energy IPPs and developers with investments in Côte d'Ivoire.

Table 12 Renewable energy investments in Côte d'Ivoire[62]

PROJECT NAME	TECHNOLOGY	CAPACITY (MW)	STATUS	SPONSORS/ STAKEHOLDERS
CIPREL	Thermal	543	Commissioned	Eranove (83%), West African Development Bank (2%)
AZITO ENERGIE IPP	Thermal	430	Commissioned	Globaleq (77%), Aga Khan Fund
AGGREKO IPP	Thermal	200	Commissioned	Aggreko PLC (100%)
BIOKALA	Biomass	46	Commissioned	Biokala
BOUNDIALI	Solar	37.5	Under implementation	CI-Energies / KfW
BINGUEBOUGOU	Solar	25	Commissioned	RECA
TOUBA – LABOA	Solar	75	N/A	Scaling Solar
KORHOGO	Solar	66	N/A	Poro Power
FERKESSEDOUGOU	Solar	25	N/A	Biotherm
ODIENNE	Solar	25	N/A	Avaada

Currently, all hydropower plants in Côte d'Ivoire are state-owned and managed by the CIE.[63] However, the private sector is expected to enter the market. The Government has signed several memoranda of

62 Developed from multiple sources: IFC, 2018. *A Roadmap to achieve Cote d'Ivoire's 42 percent renewable energy target by 2030.* Africa Energy Portal, Cote d'Ivoire Market Information. PV Magazine articles.
63 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*

understanding with private developers for hydropower projects, including Gao, Tayaboui, Aboisso, Daboitie, Kouroukoro, and Tiboto. Small hydropower plants are also planned. The MPERE aims to develop total installed capacity of 18MW of small hydropower projects by 2030 and has identified 20 potential sites with individual capacity of between one and 12.5MW.

The country's first large-scale biomass project was launched in December 2017. Developed by a private investor, Biokala, it is the only biomass project with a PPA. In Côte d'Ivoire, agricultural operators and agri-processors have been the major users of biomass, generating energy on a small scale for their own consumption. However, over the last few years, the Government has sought to involve the private sector. It issued a call for expressions of interest in 2016 for two biomass projects, a 20MW plant in Gagnoa and a 25MW power plant in Boundiali. Five companies were pre-selected to submit a competitive tender for each project. Each company's financial and technical capacity to carry out the project and the proposed tariff will be assessed.[64] Biomass technical potential for energy production is estimated to exceed 1,200MW. Thus, it represents significant potential for private sector investment in the near future.[65]

In addition to conventional solar power plants, the Government of Côte d'Ivoire announced in December 2018 that it plans to build the first African floating solar power plant.[66] The French Development Agency (AFD) will finance the $88 million project as part of a bilateral convention to enhance cooperation in sustainable energy. A detailed schedule and project information are not available yet.

No wind power plants have been built in Côte d'Ivoire, but private sector developments are currently under consideration in Touba and Ehania. In addition, as part of the Energos 1 program, the EU is supporting the identification of wind energy potential in Côte d'Ivoire.

ENGINEERING, PROCUREMENT AND CONSTRUCTION/INSTALLERS

Engineering, procurement and construction (EPC) refers to the contractors responsible for all activities from design to procurement, construction, commissioning and handover of a plant to the IPP. EPC companies operate in Côte d'Ivoire. Most of the utility-scale EPC contractors are subsidiaries or consortiums formed by foreign investors based in Côte d'Ivoire. Figure 5 provides selected examples of EPC contractors.

Figure 5: Selected EPC companies in Côte d'Ivoire

PROFESSIONAL ASSOCIATIONS

Professional associations represent specialized companies in the renewable energy sector, acting on their behalf in a number of situations, including in negotiations with the Government. Three professional associations have been identified in Côte d'Ivoire: the Association Ivoirienne des Energies Renouvelables (AIENR), the Association Patronale des Entreprises du Secteur de l'Electricité de Côte d'Ivoire (APESELCI), and the Green Cluster PME Côte d'Ivoire.

64 Climate Scope2019. 2019. *Côte d'Ivoire renewable energy call for expressions of interest.* **http://global-climatescope.org/policies/4151**
65 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*
66 AFP. 2018. *La Côte d'Ivoire va construire la première centrale solaire flottante d'Afrique. Le Monde.* **https://www.lemonde.fr/afrique/article/2018/12/05/la-cote-d-ivoire-va-construire-la-premiere-centrale-solaire-flottante-d-afrique_5392993_3212.html**

Founded in April 2013, AIENR is a non-profit association of general interest, aiming to address energy, environment and sustainable development issues. Focusing on building awareness, it contributes to promoting and developing energy efficiency and renewable energies, with the ultimate goal of supporting the fight against climate change. Its membership totals around 40 companies, all SMEs.[67]

The Green Cluster PME Côte d'Ivoire was established by the ecosystem players to contribute to the economic development of member SMEs, including support for innovation, the acquisition of market share and international development. Representing about 100 SMEs, the cluster's activities include trainings and green financing.[68]

4.1.2.1 GAPS AND CHALLENGES FOR INDEPENDENT POWER PRODUCERS AND THE LARGER ON-GRID UTILITY-SCALE RENEWABLE ENERGY GENERATION VALUE CHAIN

LACK OF APPROPRIATE INVESTMENT PROMOTION INCENTIVES

The reduced VAT rate for PV equipment purchases is the only investment promotion incentive for private sector investment in renewable energy power plants in Côte d'Ivoire. Although the price of for renewable energy equipment has been falling around the world over the past few years, it remains relatively high in sub-Saharan African countries. Introduction of a feed-in tariff (FIT), competitive selection (such as auctions and tenders) and guaranteed purchase of renewable energy during a determined period, or implementation of detailed grid laws and regulations, would alleviate private sector investment risks and, thus, encourage its involvement in the energy sector.

LACK OF RELIABLE RENEWABLE ENERGY DATA

Public utilities in Côte d'Ivoire do not provide data on existing demand and performance,[69] constituting a significant barrier for private sector investment. Without this data, private developers cannot determine whether solid development opportunities exist, making it difficult for them to even consider investment.

In addition, detailed potential data are not available for some renewable energy sources. For instance, no detailed wind maps have been developed for the country. Although hydropower potential was estimated at capacity of more than 1,900MW, that research was conducted in 1979. This does not reflect the capacity that can be developed economically given current environmental and social performance standards. Developing updated and reliable data would help the private sector develop reliable business plans and, thus, invest in renewable energy.

LIMITED TECHNOLOGICAL CAPACITY

Most renewable energy technologies require qualified individuals to install and maintain them. Reliability depends on individuals with those skills who are available locally. This has a significant impact on projects' operating costs. Unfortunately, skilled engineers are in short supply in Côte d'Ivoire, which constitutes a critical barrier to the adoption and diffusion of renewable energy technologies, particularly for off-grid projects in rural areas.

INSUFFICIENT ACCESS TO FINANCE

While private banks are showing interest in investing in renewable energy projects in Côte d'Ivoire, they lack sectoral understanding and transactional experience. Reliable information, training on business models and finance options are required to boost private banks' involvement and, thus, improve the private sector's capacity to invest. Information on renewable energy projects is lacking, creating the perception of high risk, which affects financing costs. Indeed, recent renewable energy projects have been financed either by

67 Based on interviews.
68 Green Cluster PME Cote d'Ivoire website **http://greencluster.ci/**
69 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*

multilateral development banks (MDBs), such as the African Development Bank (AfDB) and KfW, or foreign private investors. Existing renewable energy projects have not been financed locally.

HYDROPOWER PLANTS' LOW POWER CAPACITY FACTOR

The average global hydropower capacity factor is estimated to be 50 percent for new projects.[70] However, Côte d'Ivoire's average factor was 26.7 percent in 2016.[71] This low capacity factor is due to the take-or-pay commitment scheme. Although favourable to IPPs, it can also result in a lack of flexibility in managing generation facilities and can even force water spillage. Energy produced by IPPs must thus be purchased in priority, before the energy produced by public utilities. This scheme increases the complexity of developing a cost-effective, efficient development plan.

HYDROPOWER PROJECTS PLANNED FOR THE LONG TERM

The Government of Côte d'Ivoire has already sent memoranda of understanding to private developers regarding hydropower projects planned for installation over the next 10 to 15 years. This long timespan between project planning and implementation may discourage private companies from investing in feasibility studies for additional projects, as they may not guarantee that the project will move forward once the studies are completed. Potential delays must also be taken into account, as they will have a significant impact on private developers' business plans.

LACK OF INSTITUTIONALIZED PROCEDURES AND POLICIES SPECIFIC TO RENEWABLE ENERGIES

While the Government of Côte d'Ivoire has set an ambitious target of 400MW installed capacity of solar power by 2030, supportive policies to achieve it remain limited. Biomass projects face similar issues; they involve many public and private stakeholders, including the Ministry of Agriculture (which is not involved in other renewable energy projects). Both solar PV and biomass generation must negotiate PPAs directly with the Ministry on a case-by-case basis. No FIT, dispatch obligations or other incentives are currently available. However, the Government's plan to develop its energy-installed capacity focusing on hydropower and biomass power plants emphasizes the need to implement detailed rules to speed the procedures and improve their efficiency. For example, the process to approve the signing of the Biovea biomass power plant PPA took two years. This is explained by the wide range of public and private sector stakeholders involved in biomass projects and the fact that procedures are not yet institutionalized. Such projects must thus be implemented on a case-by-case basis and PPAs must be negotiated similarly because Côte d'Ivoire does not yet have standards for them.[72] If the government developed a regulatory and institutional framework for the biomass sector, that could speed the process and improve its efficiency. This could include clearly identifying the institutions to be involved throughout the process, creating a framework to coordinate energy, agricultural, and environmental regulations, and developing PPA standards.[73]

In addition, Côte d'Ivoire lacks a centralized source of easily accessible information on project development procedures and regulations. This lack of transparency results in uncertainty and increases perceived risk. Implementing a clear and detailed tendering process would reassure private investors. The CEPICI provides information on the country's business environment and general investment code and incentives, but nothing specific to the energy sector, which is not even included in CEPICI's key sectors. Moreover, Côte d'Ivoire lacks grid codes describing connection procedures and operational requirements for renewable energy power plants.

70 International Renewable Energy Agency. 2012. *Renewable Energy Technologies: Cost Analysis Series Volume I: Power Sector Issue.*
71 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*
72 Ibid.
73 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*

RECOMMENDATION AND POINT OF ENTRY 1

Establishing institutionalized procedures and policies specific to renewable energies

To support further investments in on-grid renewable energy, the Government should implement institutionalized procedures and policies to support further IPP involvement. Côte d'Ivoire could implement clear and detailed supporting instruments, such as FITs, FIPs and auctions, to encourage IPPs to develop renewable energy projects and decrease their risks.

Best practice example: Administrative and technical capacity-building

The European Union's (EU) Technical Assistance Facility (TAF) for the SE4ALL programme assists partner countries in fine tuning their energy policies and regulatory frameworks to allow for increased investment in the energy sector.[74] The Facility aims to: (i) increase partner countries' administrative and technical capacity for sector policy analysis, development and implementation, (ii) accelerate and implement - positively, efficiently and effectively - sector reform policies on access to sustainable energy, energy efficiency and energy supplies; and (iii) facilitate the implementation of the investment projects needed to meet the overall SE4ALL objective of making modern energy services accessible to all.

TAF supported the Government of Angola to develop a model PPA to purchase energy produced by privately-led renewable energy undertakings.[75] In Cameroon, TAF supported the development of clear and precise procedures for third parties to build and manage electricity transmission and distribution networks for rural electrification, for smooth transfer to the national concession network.[76]

Main implementer	International donor organizations, by providing the required administrative and technical capacity-building to the Government.
Private sector involvement	For PPAs, the private sector (IPPs) will be involved primarily after the implementation stage.
Financial benefits	The Government would ultimately receive financial support in the form decided by international donor organizations (grant, loan).
Mitigation outcomes	Increased generation from renewable energy sources and decreased GHG emissions from the energy generation sector.

Best practice example: Implementation of supporting policies, such as FITs, FIPs and auctions

Feed-in tariffs (FIT), feed-in premiums (FIP) and competitively set feed-in pricing policies (auctions) are three supporting policies that Côte d'Ivoire could implement to foster private sector engagement in on-grid renewable energy. As of 2017, more than 80 countries around the world have implemented FITs and FIPs, which provide a stable income to power generators and help increase the bankability of projects.[77] However, the tariff or premium must be set correctly. If it is too low, it will not attract private developers and too high, will have a significant impact on the Government budget. Given these concerns, FITs and FIPs are typically coupled with competitive set tariffs or auctions. As of 2016, more than 70 countries have adopted auctions.[78] They are particularly popular because they can be tailored to country-specific contexts and objectives. In China, for example, solar and wind auctions have been conducted since 2011 to set the FIT in various provinces.[79]

Main implementer	Government, through the development of the required supporting policies.
Private sector involvement	The private sector would be involved primarily at the project implementation stage.
Financial benefits	The private sector would receive a stable income for generating power.
Mitigation outcomes	Increased generation from renewable energy sources and decreased GHG emissions from the energy generation sector.

74 NDC Partnership. *The European Union's Technical Assistance Facility (TAF) for the Sustainable Energy for All (SE4ALL).* **https://ndcpartnership.org/funding-and-initiatives-navigator/european-union's-technical-assistance-facility-taf-sustainable**
75 EU. 2018. *TAF Newsletter #10, April 2018, The EU's Technical Assistance Facility (TAF) for Sustainable Energy.* **https://eeas.europa.eu/sites/eeas/files/the_eus_taf_for_sustainable_energy_newsletter_issue_10.pdf**
76 Ibid.
77 IRENA. 2018. *Renewable Energy Policies in a Time of Transition.*
78 Ibid.
79 Ibid.

GAPS IN BANKABILITY OF UTILITY-SCALE SOLAR POWER PROJECTS

While solar power plants are becoming increasingly competitive against fossil-fuel fired generation, upfront costs remain very high. This is due to the absence of a legal, regulatory and contractual framework that would provide private investors with adequate and predictable long-term revenue streams. Thus, Côte d'Ivoire needs to improve the environment for the private sector willing to invest in solar power plants. This could be done by introducing bankable, standardized PPAs, standardized FIT and energy auctions. For example, the IFC supported the Government of Argentina in designing an improved bidding auction process, after which the country held two energy auctions in 2016, awarding more than 2,400MW to local and international bidders.[80]

ABSENCE OF CLEAR PROJECT PIPELINE

A clear pipeline of well-structured projects that are ready for financing is also lacking. Developing a document listing those projects would facilitate the involvement of private sector investment. The PPP National Steering Committee provides a list of PPP projects and CI-ENERGIES provides a list of on-grid solar power projects to be developed, but the details are not disclosed publicly.

INADEQUATE TARIFF STRUCTURE (BIOMASS PROJECTS)

One of the issues that most private sector players flag related to biomass power plant projects is their relatively high capital expenditure requirements.[81] Depending on the project's scale, capital expenditure may range between $2,500 and $4,500 per kilowatt (kW).[82] In comparison, capital expenditure for solar PV varies between $1,300 and $2,000 per kW, while the cost for diesel generated-power ranges from $1,000 to $1,300 per kW.[83] Moreover, most projects and opportunities for self-supply at agri-processing facilities in Côte d'Ivoire are below 10MW; this pushes costs up and makes projects less economically attractive.[84]

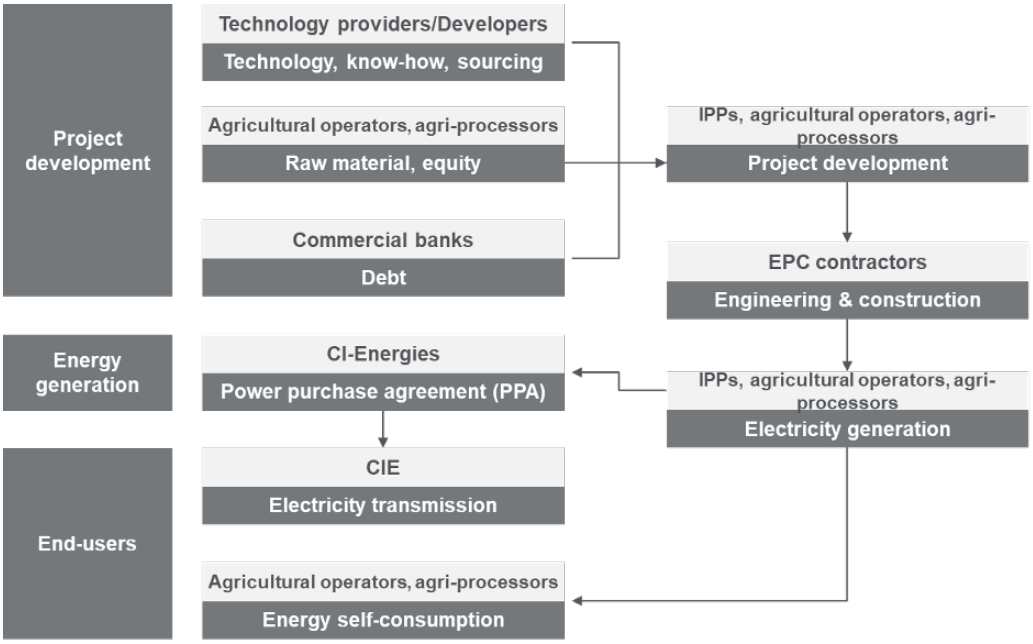
Another issue raised in this context involves raw materials sourcing. In most cases, raw materials are sourced from small-scale farmers (between two to five hectares) located within 150 kilometres of the processing facility. Sourcing feedstock can thus be logistically complicated, difficult to secure for both large- and small-scale biomass projects, and represent a significant cost factor. However, feedstock is increasingly processed locally due to increased quantities generated on-site, coupled with growing energy demand.[85] Implementing biomass offtake agreements that take the cost of sourcing into account, together with technical assistance enabling farmers to make needed investments to localize processing, could help biomass projects scale up.[86] Moreover, the establishment of a net-metering implementation decree would provide an additional revenue stream to the developer, making the project more cost attractive. Thus, investors may consider higher-capacity biomass plants if provided with an adequate tariff and sufficient feedstock at a reasonable price.

4.1.3 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS TO THE INDUSTRIAL USE OF RENEWABLE ENERGY AND SHSS IN CÔTE D'IVOIRE

Figures 6 and 7 show the value chain analysis for the industrial use of renewable energy (biomass) and SHSs in Côte d'Ivoire.

80 Ibid.
81 Ibid.
82 European Union. 2016. Sustainable Energy Handbook – *Simplified Financial Models.*
83 Ibid.
84 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*
85 Ibid.
86 Ibid.

Figure 6: Value chain for the industrial use of renewable energy in Côte d'Ivoire (biomass)

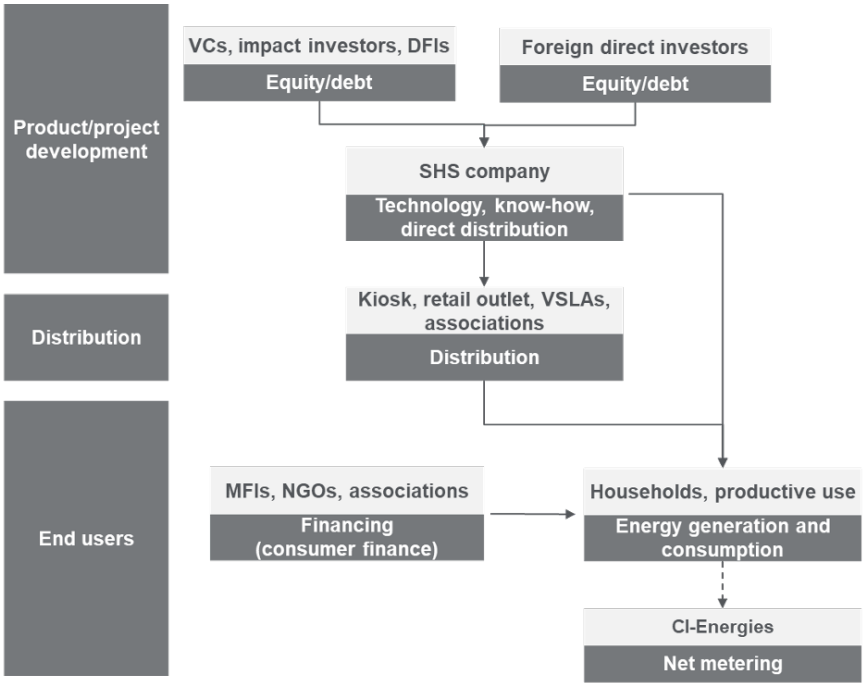


The value chain for the industrial use of renewable energy in Côte d'Ivoire is centred on biomass. The primary driver for demand is to save on electricity costs and improve power supply. The Prime Minister's office is conducting an industrial sector waste inventory to create a secondary industry for energy production (waste-to-energy). The country seeks to encourage agribusinesses to introduce biomass energy production from agro-waste in cacao and other products processed in the country.

The lack of implementation decree for the resale of energy produced poses an important challenge to the value chain in Côte d'Ivoire. Without such a decree, potential for private sector investment in renewable energy for self-consumption in industrial use (captive use) is limited.

Industries usually initiate projects in Côte d'Ivoire. Industrial customers request the services of technology developers/installers to design and install a solution adapted to the business's and company's specific needs. The industrial use of renewable energy concerns only captive use, as an implementation decree for net metering arrangements does not exist yet.

Figure 7: Value chain for SHSs/off-grid energy generation in solar PV in Côte d'Ivoire



SHS companies are at the centre of the value chain. Projects are usually initiated based on end-user demand, which is based on the services and products that SHS companies provide. Households and other end users thus request services and products developed by SHS companies.

In Côte d'Ivoire, SHS companies provide services and products to end users directly or through distributors and intermediaries. Distributors and intermediaries such as third-party distributors, allow products and technologies to reach more customers by reaching rural areas or by providing financial services to households and SMEs in areas linked with an SHS asset. However, end users may not sell surpluses to the grid as a net metering scheme is not available yet in Côte d'Ivoire.

Côte d'Ivoire's SHS companies, especially those providing asset-based lending services, are usually financed by foreign investors, such as venture capital (VC) and impact investors.

TECHNOLOGY PROVIDERS AND SMALL-SCALE DEVELOPERS

Technology providers in Côte d'Ivoire include SHS technology providers and more general providers, such as E2IE, Schneider Electric and Yandalux, which provide solutions ranging from project design and development to project development. SHS providers provide different sets of solutions, from small-scale solar systems to larger systems covering several applications.

Figure 8: Selected developers and technology providers in Côte d'Ivoire

The SHS market in Côte d'Ivoire is dominated by international off-grid solar companies that are already active in other countries, such as BAOBAB+, Zola Electric, PEG Africa and BBOXX. Major stakeholders such as Orange, Engie and MTN have entered the market as well.

SHS-focused providers in Côte d'Ivoire rely primarily on cash sales and asset-based lending (pay-as-you-go, or PAYGO) distribution/sales models. With cash sales, SHS companies have their own teams of sales agents responsible for sales and customer service. Other companies may also use retail outlet sales, usually through village-level kiosks. This allows them to reach last-mile areas.

4.1.3.1 GAPS AND CHALLENGES FOR TECHNOLOGY PROVIDERS, SMALL-SCALE DEVELOPERS, INDUSTRIAL USE OF RENEWABLE ENERGY AND SHS VALUE CHAIN

LACK OF REGULATIONS

While the Government of Côte d'Ivoire has set targets related to off-grid electrification, it has also stated that grid connection remains the primary approach to electrification.[87] Although the NREAP aims to increase the share of the rural population using off-grid electricity from renewable energy sources to 2 percent, off-grid electrification should be seen as a provisional measure only. Recently, the government acknowledged that

87 IFC. 2018. *A Roadmap to Achieve Côte d'Ivoire's 42 percent renewable energy target by 2030.*

as the cost of connecting rural localities increases with their distance from the existing network, promoting alternative electrification technologies and models, especially off-grid electrification, can reduce those costs. Cost issues also highlight the need to manage the complementarity of rural electrification with both on-grid and off-grid investments. This requires a detailed annual on-grid and off-grid electrification strategy, which would detail the goals and provide strong decision-making powers to the network manager.[88] Therefore, the government should integrate off-grid components in its electrification strategy and develop a clear and detailed off-grid electrification programme, including mapping and defining the role of the private sector. A supportive regulatory environment for off-grid electrification should also be developed. For now, the Government plans to establish a directorate dedicated to renewable energies and off-grid electrification and a consultation framework for public and private stakeholders. On the regulatory side, the Government plans to develop and adopt a master plan for off-grid electrification and to finalize the regulatory framework for off-grid electrification.[89] Implementing these measures will provide the private sector with a clear framework and roadmap to foster private sector investment in this field.

LACK OF FINANCING STRUCTURES AND INCENTIVES FOR OFF-GRID PROJECTS

Another significant barrier to private sector investment in the off-grid subsector is the lack of incentives that can mobilize private sector investment in this field. This could be addressed by clarifying VAT and customs duties for SHS providers by publishing an information note that sets out the tax treatment of SHSs, especially when they are sold on credit.[90] The Government could also establish customs duty reductions or waivers for SHS providers and quality-certified products for developers as a way to mobilize private sector investment in this field.[91]

In addition, the financing structure for off-grid projects differs from that of grid-connected projects. While off-grid projects are less expensive due to their smaller scale, they are also less profitable given the higher initial investment costs for similar production capacity, as compared to utility-scale projects. Also, domestic financial institutions have little or no experience in rural electrification, making it difficult to obtain financing from them and, thus, increasing the risks for potential investors.

The industrial market offers significant potential for renewable energy production developers, especially for cacao and sugar factories, which are already developing biomass power plants for self-consumption. The cost of electricity for industries in Côte d'Ivoire is relatively high. The Government is conducting a feasibility study on waste-to-energy power plants, leveraging agricultural waste in this sector. However, Côte d'Ivoire has not adopted the implementing decrees that would allow private stakeholders to sell surplus energy to the grid. This constitutes a significant barrier when considering industrial use.

RECOMMENDATION AND POINT OF ENTRY 2

Establishing net metering to support the development of renewable energy for industrial use

Implementing net metering policies for industrial companies and households is the most important step to kickstart the market. Industrial companies and households may generate electricity for their own consumption. However, they may not sell the surplus to the grid, which makes generation less attractive and, in some situations, less cost-efficient.

Best practice example: Developing a market for distributed generation

One of the challenges that most customers encounter is the lack of clear and enforceable regulations requiring utilities to encourage a market for distributed generation. This requires establishing a clear and enforceable net metering regulation. For example, Mauritius successfully implemented a net metering scheme for households that includes equipment tax incentives. As of 2015, 5MW of solar PV installations had been built under the scheme.[92] Additional incentives include income tax breaks linked to buying and installing a PV power generator and the opportunity to take out a low-interest loan with a local bank. Under

88 Ministère du Pétrole, de l'Energie et des Energies Renouvelables. 2019. *Plan d'Actions de l'Electrification Hors-Réseau de la Côte d'Ivoire.*
89 Ibid.
90 Ibid.
91 Ibid.
92 ESI Africa. 2018. *Net metering rules & distributed generation market opportunity* **https://www.esi-africa.com/top-stories/net-metering-rules-distributed-generation-market-opportunity/**.

this scheme, customers generating electricity may export excess energy to the grid in the form of kWh. The credits may then be used when the customer's system is not producing enough power to meet demand.[93]

Main implementer	Government, through implementation of net metering.
Private sector involvement	The private sector would be able to sell excess energy to the grid.
Financial benefits	The private sector would be able to obtain additional revenue by selling excess energy to the grid.
Mitigation outcomes	Increased generation from renewable energy sources and decreased GHG emissions from the energy generation sector.

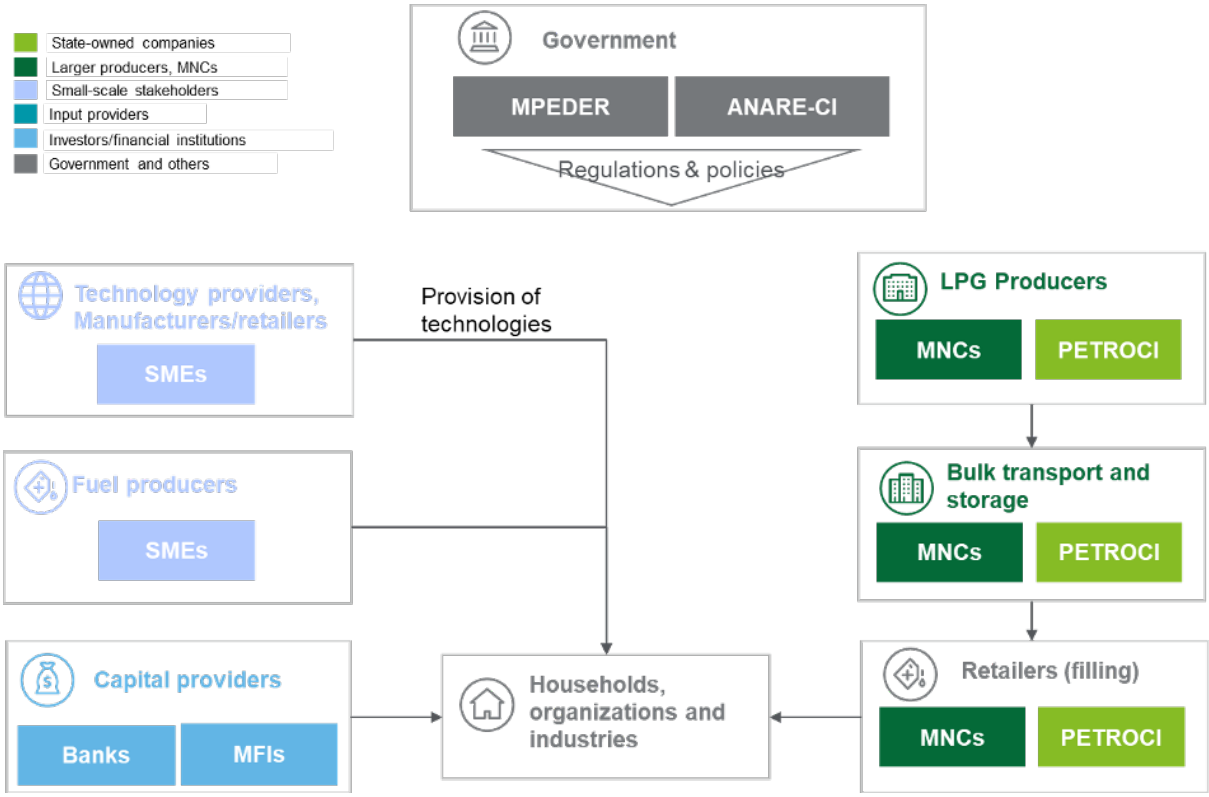
4.2 CLEAN COOKING

Côte d'Ivoire has developed targets in the clean cooking subsector to further advance the diffusion of LPG stoves and other efficient technologies. However, the clean cooking ecosystem and value chain remain limited, with only two clean cookstove manufacturers and distributors active in the country. While LPG is used primarily for cooking in urban areas, with the Government promoting its diffusion, charcoal remains dominant in rural areas. This subsection will therefore focus on analysing the ecosystem and the value chain for clean cooking in Côte d'Ivoire, for both LPG and efficient cookstoves.

4.2.1 ECOSYSTEM ANALYSIS

Figure 9 presents Côte d'Ivoire's clean cooking ecosystem.

Figure 9: Côte d'Ivoire's clean cooking ecosystem



The country's clean cooking ecosystem may be divided into two value chains: LPG and other efficient technologies. However, the LPG value chain is more developed than other technologies. The ecosystem is further divided among input providers, technology providers/manufacturers/retailers, and end users. A few major stakeholders, including MNCs, dominate the LPG value chain. The value chain for efficient cookstoves and fuels is nascent in Côte d'Ivoire, with very few formalized stakeholders.

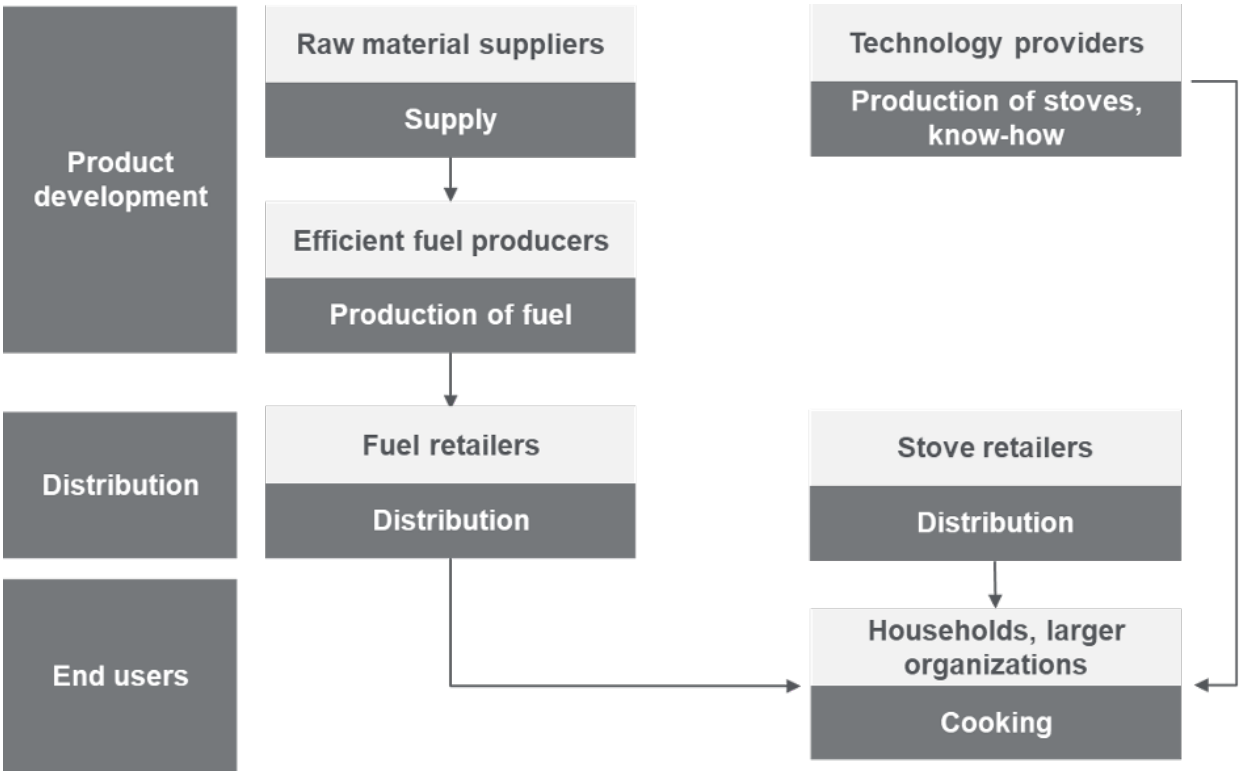
93 PV Magazine. 2017. *Mauritius launches net metering scheme for residential PV.* **https://www.pv-magazine.com/2017/07/14/mauritius-launches-net-metering-scheme-for-residential-pv/.**

In this ecosystem, the Government has an impact primarily on the LPG value chain, as LPG producers and distributors are state-owned enterprises.

4.2.2 ANALYSING THE VALUE CHAIN, MAPPING PRIVATE SECTOR ACTORS AND IDENTIFYING BARRIERS IN THE CLEAN COOKING VALUE CHAIN

Figure 10 presents the value chain analysis of Côte d'Ivoire's clean cooking subsector.

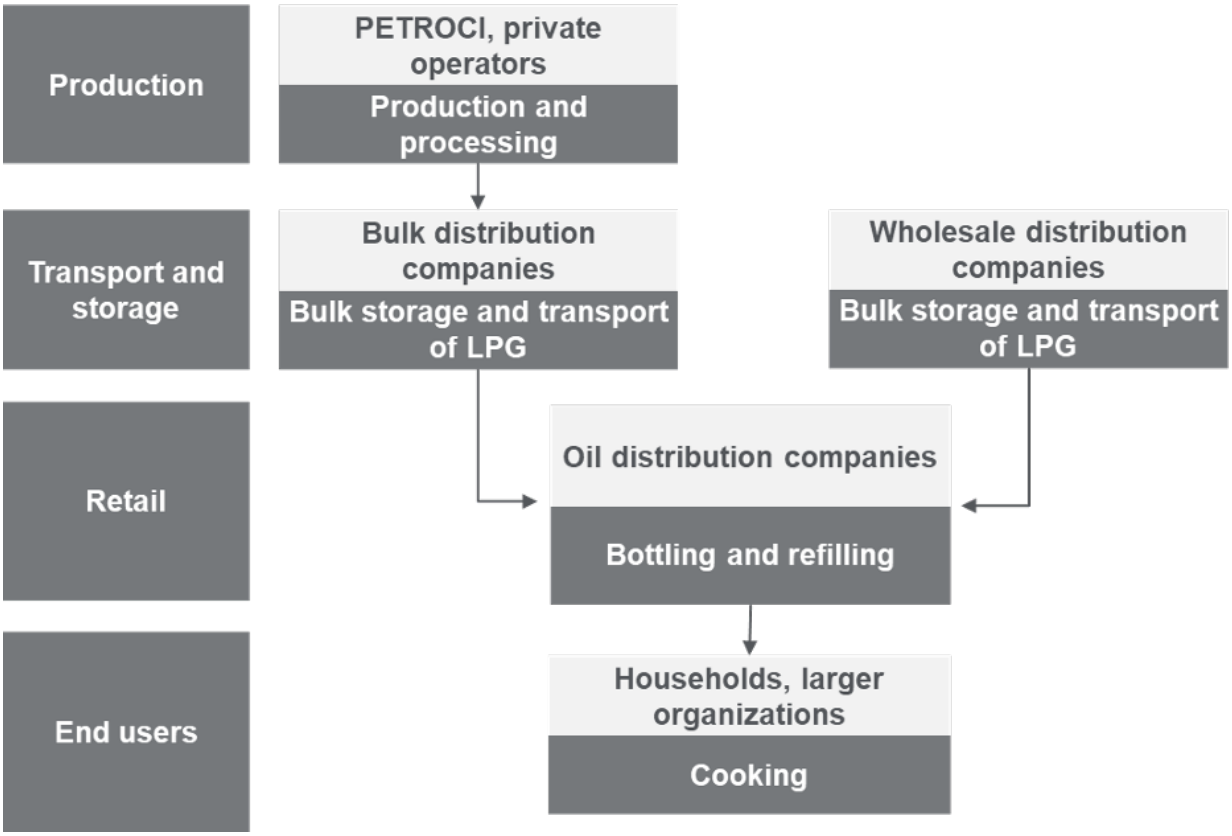
Figure 10: Value chain for clean cooking stoves and efficient fuel



The stakeholders involved in Côte d'Ivoire's clean cooking value chain are mainly informal. This results from the lack of regulations and incentives for the uptake of clean cooking in the country. The Côte d'Ivoire Alliance for Clean Cookstoves (CIACC) brings together stakeholders in the value chain. However, as of March 2020, the Alliance included only one formal member. While some stoves and efficient fuel are produced locally, most are manufactured by the informal sector. A large number of stoves, especially LPG stoves, are imported.

Figure 11 presents the LPG fuel value chain, which is significantly different.

Figure 11: Value chain for LPG fuel distribution



LPG is produced and processed by state-owned enterprises, such as PETROCI, and private operators. Wholesale distribution companies then store and distribute it in bulk to retailers.

MNCs dominate the LPG fuel production and distribution value chain in Côte d'Ivoire, from production to distribution. LPG penetration is significant in Abidjan, but is estimated to be relatively low in rural areas.

The main private sector stakeholders are involved in bulk transport and storage, as well as retailing.

COOKSTOVE MANUFACTURERS

Cookstove manufacturers are responsible for developing efficient technologies and/or producing efficient cookstoves. Only a few exist in the country, primarily in the informal sector. Some manufacturers identified include Green Ker, Emeraude Technologies and Hydrovie. They focus on large-scale customers, such as agribusiness clients. These stakeholders are not currently involved in systematic distribution and retail in urban and rural areas. LPG cookstoves are largely imported.

FUEL MANUFACTURERS

Fuel manufacturers are responsible for the production of efficient fuel. Fuel manufacturers in Côte d'Ivoire are also mainly in the informal sector and focus on non-efficient fuels. A few, such as Tassouma Briquettes, a former subsidiary of Ecosur, produce efficient fuels. NGOs, such as the *Association des propriétaires de forêts naturelles et plantations d'Affery and Ivoire Consommation,* listed in the Clean Cooking Alliance directory for Côte d'Ivoire, provide extension services related to producing charcoal from bamboo using efficient kilns.

STOVES AND FUEL RETAILERS

Stoves and fuel retailers are responsible for the distribution of efficient stoves and fuel in Côte d'Ivoire. LPG stoves are available at retail outlets in urban areas. However, demand for and supply of other stoves are too low for retailers and distributors. Manufacturers usually work based on purchase orders and deliver stoves directly.

The LPG distribution value chain is currently organized around the following private sector stakeholders:

PRODUCTION AND PROCESSING

LPG producers in Côte d'Ivoire include PETROCI, a state-owned enterprise (SOE), and Foxtrot, which operates Foxtrot International and CNR International and operates the Espoir and Baobab fields. Another SOE, the *Société Ivoirienne de Raffinage* (SIR), processes natural gas.

TRANSPORT AND STORAGE

Distribution companies handle transport and storage. They obtain LPG from producers. In Côte d'Ivoire, Shell and Total lead the market in bulk distribution.

RETAIL

Oil distribution companies and some independent resellers handle retail sales of LPG. PETROCI, Total, Shell and Agip have filling stations and provide these services in Côte d'Ivoire. Retailers sell LPG to small customers, including households.

4.2.2.1 GAPS AND CHALLENGES FOR PRIVATE STAKEHOLDERS AND THE LARGER CLEAN COOKING VALUE CHAINS

LACK OF INCENTIVES FOR IMPROVED COOKSTOVES

Households in Côte d'Ivoire are aware of the negative health impacts of using wood-fuelled and charcoal-fuelled cookstoves. However, they do not seem to recognize the negative environmental impacts. While households tend to rely on gas and electricity in urban areas (especially in Abidjan), the choice of cooking appliances is driven by quality, durability and cost. However, there are no financial or regulatory incentives for households to buy or switch to efficient cookstoves. Moreover, in rural areas, word-of-mouth is a major factor in decision-making, while in urban areas, households tend to be influenced by awareness campaigns. Large-scale campaigns should thus be conducted to raise awareness and convince households of the benefits of improved cookstoves.

ABSENCE OF A FORMALIZED CLEAN COOKING VALUE CHAIN

Private sector investment in clean cooking solutions focuses on providing efficient cookstoves and efficient fuel. The lack of demand and distribution channels for efficient cookstoves is a significant challenge for stakeholders as it limits their ability to scale up and foster the use of efficient cookstoves, especially in rural areas. The lack of regulation along the value chain and the lack of incentives for end users are responsible for the subsector's informal nature. Only a few companies produce efficient cookstoves in Côte d'Ivoire, which is a limiting factor in production and demand. Ensuring demand could support enterprises to scale up their production, become commercially viable and lead to innovation.

To increase demand, effective policies to lower the barriers to producing and purchasing improved efficient cookstoves must thus be implemented. Moreover, Côte d'Ivoire does not have a cookstove certification programme, which leads to higher production costs and longer production delays, as products must be certified in Senegal, Burkina Faso, Mali or Ghana.

RECOMMENDATION AND POINT OF ENTRY 3

Implementing effective policies to lower the barriers to producing and purchasing efficient cookstoves

Affordable, efficient cookstoves must be available if households are to replace their stoves with more energy efficient ones. The government should examine policies and models that will increase the demand for improved cookstoves. Next, supply-based solutions should be implemented to encourage private sector participation.

Awareness and social campaigns should be considered. These policies can also be coupled with supply-based solutions, which could be linked with SHS solutions. Clean cooking solutions would then become part of an overall "green model" for rural homes, which could be based on consumer credit/lease arrangements for cookstove purchases and social campaigns.

Best practice example: Awareness campaigns

Large-scale awareness campaigns should be conducted to raise awareness and provide more information to households about the benefits of improved cookstoves. The Clean Cooking Alliance is conducting awareness-raising campaigns in its target countries. Taking a layered, multi-level approach and involving social marketing, using radio, billboards and mobile messaging, the campaigns spread the message about the benefits of cleaner, modern stoves and fuels by showcasing available technologies.[94]

Main implementer	Clean cooking and SHS providers would lead the awareness campaigns.
Private sector involvement	The private sector, through clean cooking and SHS providers, is expected to be the driver for this entry point.
Financial benefits	N/A
Mitigation outcomes	Decreased use of biomass for cooking and decreased GHG emissions.

Best practice example: Social campaigns

In 2015, the Government of India launched the "Give It Up" campaign, encouraging middle-class households with the means to purchase LPG at market price and voluntarily cancel their rights to an LPG subsidy, transferring it to low-income households.[95] Côte d'Ivoire could consider similar social campaigns to enable low-income households to purchase efficient cookstoves.

Best practice example: Tax incentives

Tax exemptions, rebates or other forms of tax incentives can be implemented to foster demand for efficient cookstoves. For instance, exempting the sale of clean cookstoves from VAT to encourage purchases can be an efficient policy. The Millennium Villages Project in Malawi has implemented this scheme successfully.[96]

Best practice example: Consumer credit/lease arrangements for cookstoves purchases

In Uganda, sales increased after a cookstove sales offer was introduced that included a rent-to-own option and allowed payments to be made over time.[97]

Main implementer	Government, by implementing incentives.
Private sector involvement	The private sector would be able to invest in clean and efficient cookstoves.
Financial benefits	Clean and efficient cookstoves would be affordable for households.
Mitigation outcomes	Decreased use of biomass for cooking and decreased GHG emissions.

94 Clean Cooking Alliance. *Demand Creation.* **https://www.cleancookingalliance.org/market-development/demand-creation/.**
95 Ibid.
96 World Health Organization. *Policies enabling the adoption of clean household energy.* **https://www.who.int/airpollution/household/interventions/policy/en/**
97 Ibid.

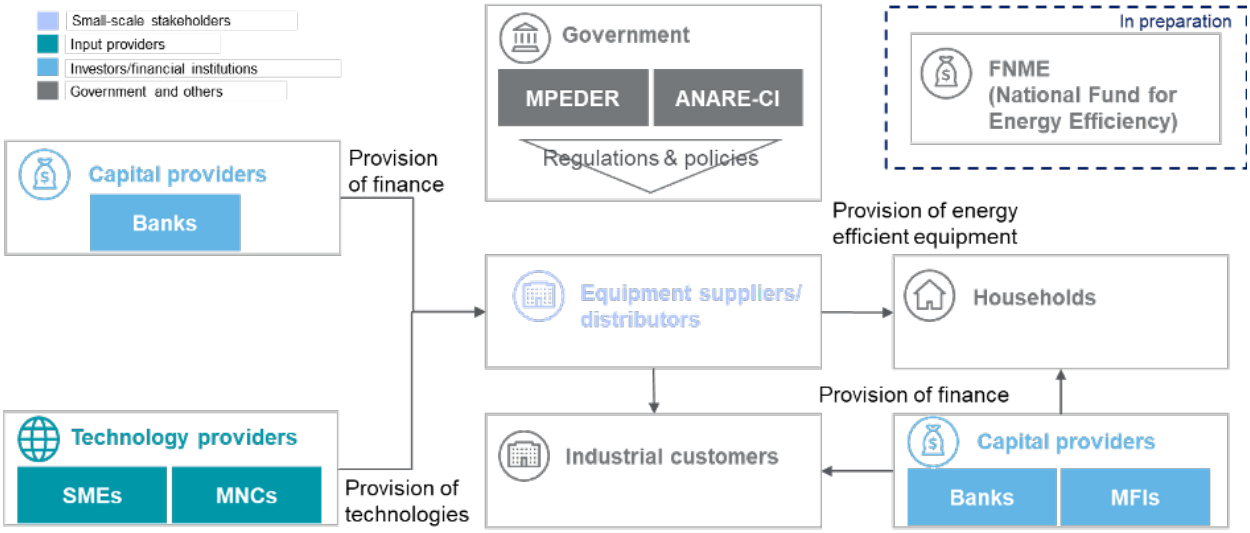
4.3 ENERGY EFFICIENCY

Côte d'Ivoire seeks to encourage energy efficiency measures in public buildings, households and industries by introducing standards. However, the ecosystem for energy efficiency measures, such as efficient lighting and appliances, is still nascent. There are no local manufacturers, so lights and appliances are imported.

4.3.1 ECOSYSTEM ANALYSIS

Figure 12 presents the energy efficiency ecosystem in Côte d'Ivoire.

Figure 12: Côte d'Ivoire's energy efficiency ecosystem



The energy efficiency ecosystem is organized into input providers, suppliers and end users. In Côte d'Ivoire, the technologies associated with energy efficiency, lighting and appliances are all imported from foreign technology providers. No local supply chain exists today. Equipment suppliers and distributors are mainly small-scale, usually present in urban centres, and they service households. No energy service companies could be identified as part of the ecosystem.

The government is creating a FNME, which should support the uptake of energy efficiency measures by providing incentives to households and other customers.

4.3.1.1 GAPS AND CHALLENGES FOR ENERGY EFFICIENCY

LACK OF DEMAND FOR ENERGY EFFICIENCY

The energy efficiency subsector remains underdeveloped in Côte d'Ivoire, due primarily to limited demand in the current environment. At the household level, the cost of efficient appliances is a significant barrier, as it is often perceived as too high and unaffordable. Moreover, while the Government is developing energy efficiency standards and labels for appliances, they have not been implemented yet. Thus, the country lacks the incentives to encourage households and businesses to purchase efficient appliances.

RECOMMENDATION AND POINT OF ENTRY 4

Providing energy efficient appliances at an affordable price

In addition to government implementation of energy efficiency standards and labels for appliances, such appliances must be affordable if households are to replace their conventional ones. This can be achieved by developing a scheme allowing households to trade old, inefficient appliances for efficient ones with attractive rebates, thus reducing the initial investment cost for households.

In the long term, developing a plant to manufacture energy efficient appliances in Côte d'Ivoire would also support the production of affordable equipment. In addition, it would also enable private developers to reach additional markets in ECOWAS, which represents a market of 350 million people across 15 countries with free trade agreements in place.

Best practice example: South Africa's Energy Efficiency Program

In 2014, South Africa developed the Energy Efficiency Program to encourage households to trade their old inefficient appliances for efficient ones, encouraged by attractive rebates. The programme focuses on solar water heating, alternative solutions for household cooking and heating, and energy-efficient lighting.[98]

Main implementer	Government, by implementing an enabling program.
Private sector involvement	The private sector, through households, is expected to benefit from this programme.
Financial benefits	Households are able to purchase energy efficient appliances at an affordable price.
Mitigation outcomes	Decreased use of energy and decreased GHG emissions.

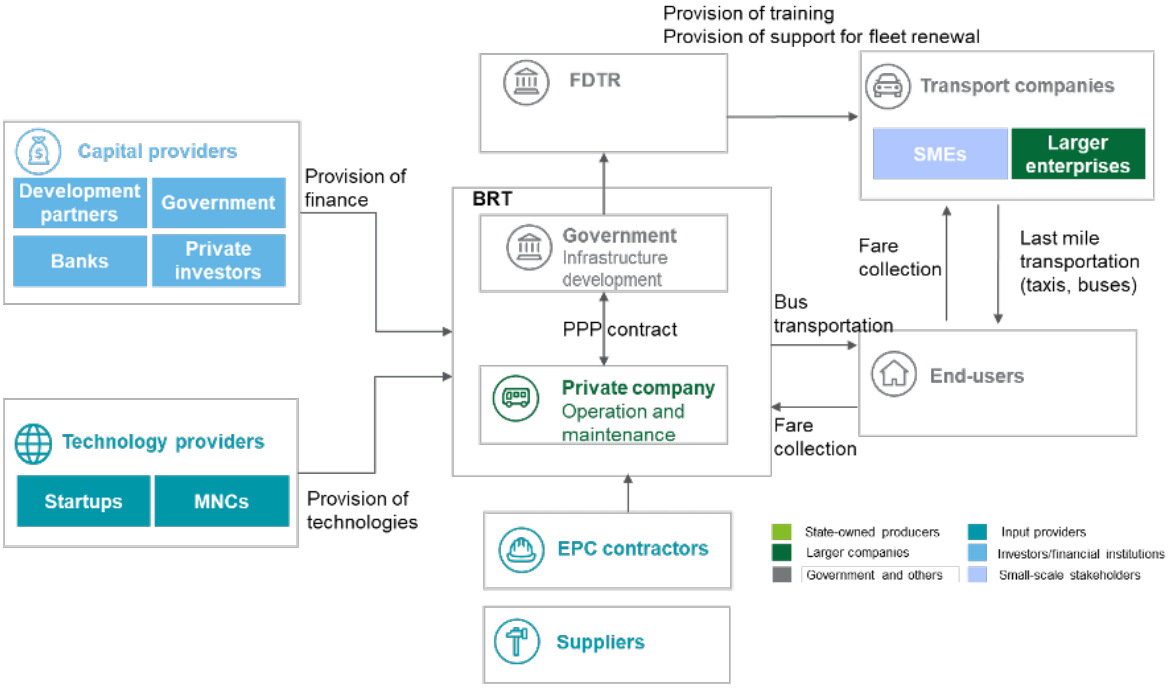
4.4 BRT AND TRANSPORT

Côte d'Ivoire has developed a strategy for the transport subsector to further advance implementation of low-carbon transport; specifically, a bus rapid transit (BRT) system.

4.4.1 ECOSYSTEM ANALYSIS

Figure 13 presents the transport subsector ecosystem in Côte d'Ivoire.

Figure 13: Transport subsector ecosystem in Côte d'Ivoire

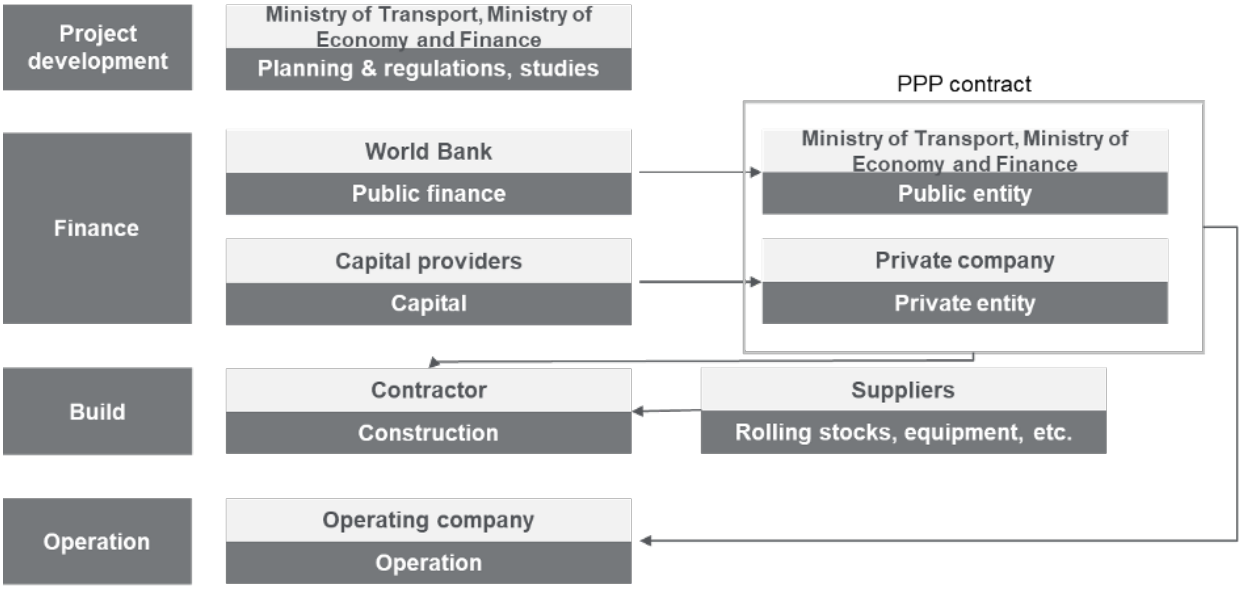


98 Saving Energy homepage. **https://savingenergy.co.za/**.

4.4.2 VALUE CHAIN ANALYSIS

Figure 14 shows the value chain analysis for the low-carbon transport sector (BRT system).

Figure 14: Value chain for low-carbon transport (BRT system) in Côte d'Ivoire



The main challenge to the low-carbon transport market (BRT system) is the dominance of the informal sector. As SOTRA currently holds a monopoly on transportation services in Abidjan, its mandate must be revised to allow the private sector to participate in operating the first BRT line. Under the current plan, SOTRA will be involved in the operation of several bus stations and taxis will cover the last few kilometres between the bus station and the rider's final destination.

4.4.2.1 GAPS AND CHALLENGES FOR PRIVATE STAKEHOLDERS IN THE TRANSPORT SECTOR

DOMINANCE OF THE INFORMAL SECTOR

The public transport system in Abidjan is characterized by informality, lack of coordination, obsolescence, and insufficient system management personnel. As a result, the informal sector (including gbaka, metered taxis, woro-woro and inter-communal taxis) accounted for more than 85 percent of mass transportation traffic in 2013.[99] Therefore, private sector investment in the formal transport sector involves the risk of a relatively low rate of return.

RECOMMENDATION AND POINT OF ENTRY 5

Scale up the programme supporting the renewal of the automotive fleet in Côte d'Ivoire

The FDTR, a public fund under the Ministry of Transport of Côte d'Ivoire, supports the modernization of the country's automotive fleet. Under the Abidjan Urban Master Plan, FTDR aims at introducing newer, better-performing taxis and mini-buses in Abidjan. To achieve this, the Fund provides two incentives: a financing support programme for financial institutions, which then make loans to transport companies, and a scrappage incentive/premium, which is supported by the World Bank. The FDTR's objective is to support the introduction of 2,000 new taxis and 1,000 mini-buses in Abidjan. Scaling up both components would allow further private sector investment in this sector.

Best practice example: Scrapping and Recycling Old Vehicles to reduce Lower Pollution and Improve Livelihoods – Egypt

Egypt adopted a new traffic law in 2008. It prevents fee-based transport vehicles, including taxis and microbuses manufactured more than 20 years ago, from obtaining a new operating license or renewing an existing license. To address the lack of a clear vehicle scrapping and disposal mechanism, the Government

99 World Bank Group. 2019. *Abidjan Urban Mobility Project.*

of Egypt launched a national programme that allows taxi owners affected by the law to turn in their vehicle voluntarily for managed scrapping and recycling in exchange for a new vehicle. The new taxis were purchased from a number of pre-registered vehicle dealers at a discounted price and with financing facilities. The programme also received support from the World Bank through the Carbon Partnership Facility (CPF), allowing the Government to purchase certified emission reductions (CERs) from GHG-reducing projects. The Government uses funds from selling carbon credits to expand the programme and increase its capacity to scrap old vehicles and provide new ones. As of 2018, 45,000 taxis have been turned in, scrapped and recycled, thereby reducing GHG emissions by 310,000 tons of CO_2 between 2013 and 2017.

Main implementer	Government, by implementing an enabling program.
Private sector involvement	The private sector is expected to invest in new and low-polluting vehicles.
Financial benefits	The private sector would be able to purchase new and low-polluting vehicles at an affordable price.
Mitigation outcomes	Decreased GHG emissions in the overall transport sector.

4.5 FINANCIAL INSTITUTIONS PROVIDING GREEN FINANCING RELEVANT TO THE ENERGY SECTOR

A limited number of institutions provide green financing and financing to Côte d'Ivoire's energy sector, including services to SMEs and consumer finance. Table 12 presents a mapping of institutions that provide green financing to the energy sector in Côte d'Ivoire, as well as their financial products and services.

Table 13: Financial institutions providing green financing to Côte d'Ivoire's energy sector

FINANCIAL INSTITUTIONS		SUBSECTOR SERVED	PRODUCTS AND SERVICES	DETAILS
Type	Example			
COMMERCIAL BANKS	Société Générale de Banque de Côte d'Ivoire SGBCI	Renewable energy and energy efficiency	Corporate and commercial finance	N/A
	Ecobank			Base interest rate from central bank at 4.5%, premium at 1%, final interest rate between 6.5% and 8% for corporate and 8% to 9% for commercial banking
	Banque Atlantique			N/A
	Société Ivoirienne de Banque - SIB			N/A
IMPACT INVESTORS, VCS AND CVCS	Oikocredit	Renewable energy and energy efficiency	Venture capital (debt, equity)	Significant ticket size Foreign-based
SHS PROVIDERS	Baobab+, Fenix International, Orange Energie, PEG Africa, Zola EDF Côte d'Ivoire	Renewable energy	Asset finance/asset-based lending	Provided directly or through partners
DFIS	AFD	Renewable energy and energy efficiency	Credit line to commercial banks	SUNREF
	World Bank	Renewable energy (off-grid)	Consumer finance (debt)	ROGEP
	PROPARCO	Renewable energy	Guarantee fund	ARE Scale up
	EU	Renewable energy	Rural electrification	ENERGOS
	USAID	Off-grid solar	Grant	Scaling Off-Grid Energy Grand Challenge
	AfDB	Renewable energy	Project finance (debt)	N/A
	IFC	Renewable energy	Project finance (debt)	IFC – Gaia Energy IFC InfraVentures

4.5.1 COMMERCIAL BANKS

Some players in Côte d'Ivoire's commercial banking sector are active in financing the energy sector. Société Générale,[100] Ecobank,[101] Attijariwafa Bank,[102] and Orabank,[103] among others, provide financing to renewable energy and energy efficiency companies and/or consumers. For example, Société Générale provides financing to project developers in renewable energy, including for utility-scale on-grid projects, and to SMEs and start-ups working in solar kits and SHS.

Compared to neighbouring countries such as Ghana, with its high commercial financing interest rates, Côte d'Ivoire's commercial banks provide more affordable rates, at less than 10 percent. Typical interest rates for corporate and commercial customers in the energy sector range between 6.5 percent and 9 percent.

Short tenors are a major bottleneck for the energy sector in many African countries. In Côte d'Ivoire, long-term financing is usually defined as a seven-year tenor. This is relatively short for the energy sector and very short for infrastructure-related projects. The loan tenor is driven by risk perceptions; for example, most commercial banks do not have extensive experience with project finance. Some players in the ecosystem, such as Société Générale, can consider and provide longer tenors, of up to 10 years. For longer projects, commercial banks may also consider partnering with DFIs, which can provide partial or full guarantees on longer terms.

The use of securitization and asset company (AssetCo) models allows some commercial banks to provide longer tenors and reasonable interest rates to innovative business models in the energy sector. Securitization involves pooling various types of contractual debt and selling the cash flows to other investors. Securitization can reduce funding costs and transfer risks, among other merits.

The AssetCo model involves creating two distinct legal entities: an operating company (OpCo), which is responsible for business operations, such as sales, operation and maintenance; and an AssetCo, which exists to buy the bundled cashflow from the OpCo. The AssetCo thus seeks financing from commercial banks, which protects the AssetCo's lenders from the operational risks that the OpCo faces. Even if the OpCo experiences financial and/or operational difficulties, payments are received from the AssetCo, which receives regular income from its portfolio.

Some commercial banks have created credit programs for smaller clients, such as SMEs, to facilitate the screening and know-your-customer process. For example, Ecobank developed a checklist for SME financing.[104] If SMEs meet the checklist requirements, Ecobank can provide debt financing. This allows the banks to process applications more quickly, while also managing risk.

Commercial banks also provide some consumer finance, but it is usually made available only to employees. Entrepreneurs and informally employed people find it more difficult to access consumer finance through commercial banks.

4.5.2 MICROFINANCE INSTITUTIONS

MFIs provide both debt financing and consumer finance to SMEs in Côte d'Ivoire, especially in rural areas. Specific financial products for SHSs and energy efficiency are available on a limited basis. Some MFIs, such as Microcred (Oikocredit),[105] have launched their own SHS products, which are sold and financed through microfinance channels.

100 **https://societegenerale.ci/fr/**
101 **https://www.ecobank.com/ci/personal-banking/countries**
102 **https://www.attijariwafabank.com/fr**
103 **https://www.orabank.net/fr/filiale/cote-divoir**
104 Based on interviews.
105 **https://www.oikocredit.coop/en/what-we-do/partners/partner-detail/29268/microcred-cote-d-ivoire**

4.5.3 IMPACT INVESTORS, VENTURE CAPITAL FIRMS AND CORPORATE VENTURE CAPITAL FIRMS

There is a limited supply of equity in the energy sector in Côte d'Ivoire. Commercial banks do not provide equity. It is therefore important to understand the level of activity of the country's impact investors, VC and corporate venture capital firms (CVCs). A variety of impact investors participate in the solar sector in Côte d'Ivoire, including Acumen[106], Investisseurs & Partenaires[107] and Energy Access Ventures.[108] However, none is based in the country.

Investisseurs & Partenaires has set up a local impact investment fund, Comoe Capital,[109] which has a low entry ticket. Ticket sizes in Côte d'Ivoire are either fairly low (less than $500,000) or too high (more than $10 million). The lack of finance for middle-tier enterprises (pre-series A or Series A level) is a major bottleneck for early investors, who cannot expect to exit without off-takers, and for the companies themselves.[110]

The VC and private equity space in Côte d'Ivoire has very few players specialized in the energy sector. Some investors are interested in the fintech space, which is related to PAYGO systems.

Foreign-based impact investors, VCs and CVCs sometimes invest in companies based in Côte d'Ivoire. PEG Africa,[111] a Ghana-based major stakeholder in the SHS sector, receives financing from impact investors such as Investissement & Partenaires and Acumen, CVCs such as Total Ventures,[112] and other firms such as SunFunder[113] and responsAbility.[114] Regional and pan-African funds are also active in the VC space in West Africa. However, there are a limited number of deals in the energy sector in general. Specific to Côte d'Ivoire and francophone Africa, Orange[115] and Engie[116] have set up their own CVCs.

4.5.4 ASSET FINANCE AND ASSET-BASED LENDING (SOLAR HOME SYSTEM PROVIDERS)

Asset finance/asset-based lending is an important financial service in Côte d'Ivoire. Asset finance allows consumers to access equipment while repaying a loan. The asset (equipment) usually becomes the collateral for the financing institution. This type of financing is referred to as PAYGO in the SHS space.

PAYGO sales are initially financed by the SHS company. Customers pay the balance over a one- to three- year period. PAYGO is usually enabled by mobile money systems or, when not available, via cash collections. In Côte d'Ivoire, PEG Africa, Zola Electric (ZECI),[117] MTN[118] and Baobab Plus,[119] among others, provide such services.

4.5.5 DEVELOPMENT FINANCE INSTITUTIONS (DFIS)

Sustainable Use of Natural and Energy Finance (SUNREF), a programme cofinanced by the AFD, EU-Africa Infrastructure Trust Fund and the French Facility for Global Environment (FFEM), aims to support the development of energy efficiency and renewable energy projects by combining a financial and technical approach.[120] In Côte d'Ivoire, SUNREF collaborates with SGBCI and Orabank.

The Regional Off-Grid Electrification Project (ROGEP) is a regional project financed by the World Bank ($200 million) for the period 2017-2022.[121] It seeks to improve investment conditions and attract local and international companies to develop off-grid autonomous solar PV systems for household, utility and productive use.

106 https://acumen.org/
107 http://www.ietp.com/
108 https://www.mtn.ci/
109 https://comoecapital.com/en/
110 Based on interviews.
111 https://pegafrica.com/
112 https://www.ventures.total/en
113 https://www.sunfunder.com/
114 https://www.responsability.com/en
115 https://ventures.orange.com/
116 https://www.engie.com/en/journalists/press-releases/orange-electrification-rural-africa
117 https://zolaelectric.com/
118 http://www.mtn.ci/
119 https://www.baobabplus.com/
120 https://www.sunref.org/en/
121 https://projects.worldbank.org/en/projects-operations/project-detail/P160708?lang=en

The Africa Renewable Energy Scale-Up Facility (ARE Scale Up), funded by PROPARCO, provides upstream support for innovative electrification projects, with a particular focus on solar energy.[122]

The ENERGOS project focuses on improving electricity access in urban areas and extending access in rural areas.[123] The project is financed by the EU, AFD, EIB and the West African Development Bank.

The Scaling Off-Grid Energy Grand Challenge is a USAID initiative, in collaboration with the Shell Foundation, that supports off-grid SHS market companies to expand their business activities in sub-Saharan Africa.[124] Microsoft, Acumen and the United Nations Foundation also support the initiative. It seeks to extend energy access to 20 million households in sub-Saharan Africa through off-grid solar solutions. In 2016, PEG Africa obtained a grant of $150,000 for its activities in Côte d'Ivoire and Ghana.

4.5.6 RECOMMENDATIONS FOR THE FINANCIAL SECTOR

Because banks perceive renewable energy and energy efficiency as high risk, only a limited number of financial products are available to the energy subsectors. Most local banks have a seven-year cap on the tenor of their loans because of the risks involved. Thus, only a small number of projects requiring long-term capital and investment, including equity, are underway in Côte d'Ivoire and these must be sourced from abroad. In addition, local banks are not used to providing project financing. This limits the private sector's capacity to invest in energy projects, as well as households' capacity to invest in renewable energy and energy efficient technologies.

RECOMMENDATION AND POINT OF ENTRY 6

De-risking innovative social models

To further support innovation in energy access and other energy business models, adequate financing conditions should be offered to innovative enterprises. Social ventures and enterprises require capital early on to develop their business model, concept and prototypes and to grow at scale. This requires both financial and technical support.

Impact investment funds, such as Comoe Capital, are active in Côte d'Ivoire, but it provides only low entry tickets (less than $500,000). Other VC and PE funds provide higher tickets (more than $10 million). Thus, financing for pre-series A and series A level is lacking, which limits the industry's growth. It is also a significant deterrent for funds that target seed and early-stage enterprises, as there is no guarantee that they will be able to exit their investment without an off-taking investor at the next stage.

While financing is a significant challenge, it is first important to provide investors a bankable pipeline. Given the current environment, Côte d'Ivoire needs incubation and acceleration services to support entrepreneurs and innovation.

Best practice example: Improve access to innovation

The South African Renewable Energy Business Incubator (SAREBI) incubates businesses in the renewable energy sector. It supports energy entrepreneurs in the renewable, clean, alternative energy and energy efficiency sectors to build scalable, profitable and sustainable businesses by assisting them in various stages of business development, from start up through growth, with a variety of services.

Best practice example: Incubation and investment

The Kenya Climate Innovation Center (KCIC) provides holistic, country-driven support to accelerate the development, deployment and transfer of locally relevant climate and clean technologies. KCIC provides incubation, capacity-building services and financing to Kenyan entrepreneurs and new ventures that are developing innovative solutions in energy, water and agribusiness to address climate change. This initiative is supported by the World Bank's infoDev and is the first in a global network of CICs that InfoDev's Climate

122 https://www.proparco.fr/en/are-scale
123 https://www.eib.org/en/press/all/2016-076-la-bei-renforce-son-action-en-cote-divoire-117-meur-pour-le-developpement-du-projet-energos
124 http://www.scalingoffgrid.org/

Technology Program is launching. It provides both incubation and investment opportunities for early-stage enterprises.

Main implementer	Stakeholders in the innovation sector, including providers of concessional capital, the government and acceleration service providers.
Private sector involvement	The private sector is expected to be involved in developing innovation support models, such as acceleration programmes for innovative business models. This could also target investment funds. Ultimately, private sector stakeholders in the energy sector, as well as end users such as C&I and households, should be able to benefit from acceleration support and financing.
Financial benefits	Acceleration service providers will benefit from concessional financing and technical support.
Mitigation outcomes	Decreased GHG emissions in the overall energy sector

Overall, Côte d'Ivoire's energy sector already involves private stakeholders, primarily in renewable energy and transport subsectors.

In electricity generation, the private sector predominates in biomass and solar power plants, with involvement of IPPs. However, the Government of Côte d'Ivoire must implement clear and detailed regulations and an institutional framework to allow further private sector investment in renewable energy.

The clean cooking subsector also requires further private sector involvement. Currently, only two efficient cookstove manufacturers are active in the value chain and they have not been able to reach scale. Achieving scale and reaching a large number of customers in rural areas require developing supporting government policies and innovative financing scheme for households.

Although a significant share Côte d'Ivoire's climate mitigation actions address the energy efficiency subsector, the Government plans to make the lion's share of the investment required and does not expect private sector investment. However, providing incentives at the household level to encourage consumers to buy affordable energy efficient appliances should support the development of the value chain and private sector investment.

Finally, although the transport subsector represents significant potential for private sector investment, especially for BRT development, the dominance of the informal sector will need to be addressed to leverage private sector investment.

While Côte d'Ivoire must still address barriers and gaps to foster private sector investment, the energy sector offers tremendous investment potential. However, this will require supporting the development of innovative financing schemes, either by developing innovative financing with commercial banks or developing impact investing funds targeting more innovative enterprises, to further support the private sector in this sector.

5. PRIVATE SECTOR INVESTMENT POTENTIAL

Côte d'Ivoire's NDC sets an ambitious target: to reduce its GHG emissions by 28 percent by 2030, including generating 42 percent of electricity from renewable energy. The government is fully aware of the important role of private sector investment in achieving these targets, as both public and private investments are expected to be the main drivers of sustainable economic growth.

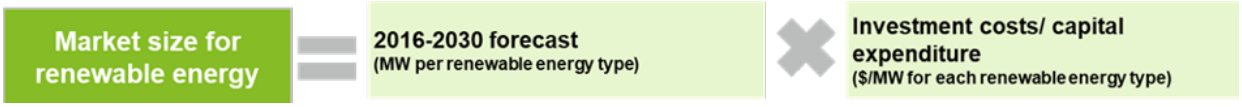
This section provides an estimate of the private sector investment potential in the energy sector in general and in each related subsector in specific.

5.1 DATA SOURCES

The Government of Côte d'Ivoire has already calculated the total investment needed in the energy sector. The country's BUR provides the total investment amount per subsector, as well as the share of private sector investment.[125] The figures are consistent with those in the projects included in the Strategic Development Plan 2011-2030, published in 2011, for the renewable energy and energy efficiency subsectors.[126]

The total investment required for the transport subsector is provided in the country's BUR[127] and the Greater Abidjan Urban Master Plan.[128] However, the degree of private sector involvement is not detailed at this point.

In parallel, the NDC clearly stipulates that the energy sector target is to achieve 42 percent renewable energy by 2030. The following calculation method is used to estimate the size of the market for renewable energy required to achieve this target.



As detailed in the NREAP, to achieve the target, Côte d'Ivoire seeks to reach total installed capacity of 2,632MW by 2030, including 131MW of small hydro, 1,592MW of medium and large hydro, 424MW of solar PV, and 485MW of biomass.

The baseline data for already installed capacity are the same as the figures presented in section 4 regarding the current status of private sector investment in the energy sector. Therefore, Côte d'Ivoire currently has total installed capacity of 1,046MW, including 55MW of small hydro, 824MW of medium and large hydro, 88MW of solar, and 80MW of biomass.

The investment costs per MW for each renewable energy type are based on the investment cost for projects that use the same technology in neighbouring countries. Therefore, the investment costs for solar PV and hydro (small, medium and large) are based on the costs used for projects in Burkina Faso. The biomass investment cost is based on projects implemented in Benin.[129]

5.2 INVESTMENT POTENTIAL

The private sector investment potential for each subsector of the energy sector, based on the Government's plan, is presented below.

125 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
126 Ministère des Mines, du Pétrole et de l'Energie. 2011. *Plan Stratégique de Développement 2011-2030 de la République de Côte d'Ivoire.*
127 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*
128 Japan International Cooperation Agency. 2015. *Le projet de développement du schéma directeur d'urbanisme du Grand Abidjan (SDUGA).*
129 International Renewable Energy Agency. 2018. Planning and prospects for renewable power: West Africa.

5.2.1 RENEWABLE ENERGY

In its BUR, Côte d'Ivoire separates the expansion of renewable energy for energy efficiency from that for electricity production.

RENEWABLE ENERGY FOR ENERGY EFFICIENCY

In its BUR, Côte d'Ivoire estimates the required investment at $98 million (FCFA 49,058 million), with private sector investment accounting for only five percent, or **$5 million** (FCFA 2,453 million). As most of the projects listed in the BUR are related to public-led sectors (such as education and health), the Government expects to finance most of them. Therefore, private sector investment in this subsector is unlikely to be high.

The investment amount includes the following projects:

- Electrify 19 rural communities with solar PV system;
- Electrify 200 health centres in rural areas with solar PV system;
- Equip 500 school canteens with cooking equipment using modern energy sources;
- Irrigate 100 hectares of market gardening with solar pumping system;
- Install 360 multifunctional platforms in areas isolated from the electricity grid;
- Install solar-powered pump units in 580 boreholes; and,
- Extend the use of improved cookstoves in rural areas.

While the available documents do not provide details on how the investment amount is allocated among the projects, private sector involvement is expected to relate primarily to extending the use of improved cookstoves in rural areas. The Government and households thus are expected to make these investments.

RENEWABLE ENERGY FOR ENERGY PRODUCTION

In its BUR, Côte d'Ivoire estimates the required investment at $1.096 billion (FCFA 547,869 million), with private sector investment accounting for 96 percent, or **$1.052 billion** (FCFA 525,954 million). Thus, renewable energy for energy production is the subsector with the highest private sector investment potential.

The investment amount includes the following projects:

- Assess the national renewable energy sources pool;
- Produce biomass energy;
- Produce electricity from solid waste in Abidjan District (SITRADE project);
- Produce electricity from Akouedo landfill biogas;
- Produce energy via treating waste from the Anyama landfill;
- Electrify rural areas with solar PV system;
- Build PCCI 01 solar PV power plant;
- Promote renewable energy for rural communities (promote renewable energy for decentralized electrification to create income-generating activities in rural areas);
- Implement a public lighting pilot project using solar PV system;
- Develop 6MW wind turbine project;
- Develop cogeneration;
- Develop the Drou hydro powerplant;
- Develop a 300kW micro hydro powerplant on Agneby River;

- Develop the Aboisso-Bia hydropower plant; and,
- Strengthen the institutional framework (Electricity Code, Electricity Law, employment management, create an institute).

The two biogas projects, solar PV power plant project and the Aboisso-Bia hydropower plant project are expected to be financed exclusively by the private sector. However, the Government is expected to provide full financing for the public lighting pilot project using solar PV system.

Even so, the Government's renewable energy project pipeline cannot achieve Côte d'Ivoire's 42 percent renewable energy target by 2030. Table 13 presents the calculation of the investment potential to achieve the target based on the NREAP plan.

Table 14: Renewable energy investment potential calculation details

	BASELINE DATA (MW)	TARGET (MW)	DIFFERENCE (MW)	INVESTMENT COSTS (US$/MW)	TOTAL INVESTMENT COSTS (US$)
Small hydro	55	131	76	11,006,000	836,456,000
Medium–large hydro	824	1,592	768	5,182,000	3,979,776,000
Solar PV	88	424	336	3,978,000	1,336,608,000
Biomass	80	485	405	2,718,000	1,100,790,000
TOTAL	**1,046**	**2,632**	**1,585**		**7,253,630,000**

Therefore, achieving Côte d'Ivoire's installed capacity target– will require total investment of about **$7.2 billion** over the next 10 years. This represents a relatively high investment potential for the private sector, especially as the Government of Côte d'Ivoire tends to count on the private sector to achieve its renewable energy targets. Medium and large hydro is the renewable technology with the highest investment potential; private IPPs and SPCs are expected to make these investments.

The private sector is also expected to support the introduction of off-grid solutions in small villages and remote locations. The government expects that 79,553 villages will be connected to off-grid solutions by 2030. The potential for private sector investment is presented in Table 14.

Table 15: Off-grid investment potential calculation details

	NUMBER OF VILLAGES	HOUSEHOLDS	LOWER END COST PER HOUSEHOLD (US$)	HIGHER END COST PER HOUSEHOLD (US$)
Micro-grids	2,001	450,413	391,671,103	89,514,813
Pico-grids	2,399	170,998	185,842,891	23,011,355
SHS	75,153	501,958	54,553,710	109,107,419
TOTAL	**79,553**	**1,123,369**	**632,067,703**	**821,633,587**

The government expects to provide 15 percent of investment costs. Private investment potential in off-grid solutions is therefore estimated at between **$537 million and $698 million**, bringing total investment potential in renewable energy to between **$7.8 billion and $8 billion.**

5.2.2 ENERGY EFFICIENCY

In its BUR, Côte d'Ivoire estimates the total investment required at $95 million (FCFA 47,630 million), with private sector investment accounting for 48.4 percent, or **$46 million** (FCFA 23,038 million).

That amount includes the following projects:

- Provide emergency supply of five transformers;
- Promote energy efficiency in public lighting;
- Strengthen energy management and savings in public buildings;
- Monitor the Government's electricity consumption;
- Implement efficient public lighting with the sale of five million low-energy lamps for the residential sector;
- Conduct energy audit of hotel and administrative complexes in Yamoussoukro;
- Promote energy management in public and private sectors;
- Conduct air conditioning and lighting systems audit of administrative buildings in Abidjan;
- Promote energy management in the 20 hospitals of the country;
- Promote energy efficiency in the industry sector;
- Label household appliances
- Develop a system to analyse the State's electricity consumption; and,
- Conduct awareness campaigns on energy savings.

While the emergency supply of the five transformers is planned to be financed exclusively by the private sector, financing for all the other projects is expected to come from both public and private sectors. The government, appliance makers and industries are thus expected to make these investments.

5.2.3 CLEAN COOKING

Under the NREAP, Côte d'Ivoire has set a target of 10 percent of the population using improved cooking solutions by 2030. Table 15 presents the calculation of the investment potential to achieve this target.

Table 16: Improved cooking solutions investment potential calculation details

	TARGET	POPULATION (2018)[130]	TARGET POPULATION	INVESTMENT COSTS[131] (US$/improved cooking solutions - 6 people)	TOTAL INVESTMENT COST (US$)
Share of population using improved cooking solutions	10%	25,069,229	2,506,922.9	11	**4,596,025.32**

Total investment of approximately **$4.6 million** will be required over the next 10 years to reach the country's target. This represents a relatively high private sector investment potential, especially as households are expected to make most of the investment.

5.2.4 TRANSPORT

In its BUR, Côte d'Ivoire estimates that total investment of $2 billion (FCFA 750 billion) will be required to renew the entire road transport vehicle fleet. This project aims to replace second-hand vehicles, a source of significant pollution, with less-polluting new vehicles. However, the document also notes that the Abidjan urban train is currently under construction to improve energy efficiency in the transport sector, at an estimated cost of $2 billion (FCFA 918 billion).

The Greater Abidjan Urban Master Plan also includes a BRT system (Abidjan Urban Mobility Project), financed partly by the World Bank. The project cost totals $540 million, including for the following components:

130 World Bank Group. 2018. *Population, total – Côte d'Ivoire.*
131 Based on stakeholder interviews.

- Implement the East-West BRT between Yopougon and Bingerville;
- Strengthen SOTRA and restructure the feeder system to mass transit lines;
- Organize the informal transport sector and last-mile accessibility; and,
- Develop human capital and provide operational support.

The International Development Association and AFD are expected to provide $300 million and $100 million, respectively, and private sector financing is expected to total $130 million (from private equity) to operate the BRT system.

Planning is underway for a second 10-kilometre BRT line, with support from the Swedish International Development Agency. A feasibility study on developing 200 kilometres of BRT was also conducted in 2018, with support from the AfDB and the Global Environment Facility. Table 16 presents the calculation of investment potential to achieve this target.

Table 17: BRT investment potential calculation details

	KILOMETRES	DFI FINANCING	LOWER END COST PER HOUSEHOLD (US$)	HIGHER END COST PER HOUSEHOLD (US$)
First BRT line	20	400,000,000	130,000,000	530,000,000
Second BRT line	10	200,000,000	65,000,000	265,000,000
BRT line under development	200	4,000,000,000	1,300,000,000	5,300,000,000

Based on the investment required for the first BRT line, the second will require a total of $265 million; $65 million will come from the private sector. The 200 kilometres under consideration will require total investment of $5.3 billion, of which $1.3 billion will come from the private sector.

While the investment potential totals $1.289 billion, the BUR estimates the private sector investment potential at **$1.103 billion** (excluding the transport subsector). In addition, Côte d'Ivoire requires total investment of **$7.8 billion to $8 billion** to achieve its renewable energy target, to be leveraged primarily from the private sector. The country needs additional investment of about **$4.6 million** to meet its improved cooking solutions target, to be leveraged primarily from households. Renewable energy for energy production is thus the subsector that offers the greatest potential for private sector investment.

6. REPORTING FRAMEWORK TO ALIGN BUSINESS OPPORTUNITIES WITH NDC IMPACT TARGETS IN CÔTE D'IVOIRE'S ENERGY SECTOR

Encouraging the private sector to invest in NDC actions is important if Côte d'Ivoire is to achieve its climate goals. It also constitutes a significant business opportunity for the private sector. However, the private sector can further capitalize on these opportunities by better aligning with the objectives detailed in the NDC and the SDGs.

This section details the rationale for private sector alignment with the NDC targets and the SDGs and provides a reporting framework for the private sector.

6.1 RATIONALE FOR PRIVATE SECTOR ALIGNMENT WITH NDC IMPACT TARGETS

Governments and international organizations engage the private sector to leverage stakeholder investments in the NDCs. The NDCs can offer the private sector additional business opportunities, but it is often unaware of those opportunities. It is therefore important to highlight and translate these in clear reporting frameworks, which the private sector can then leverage to enhance its understanding of the added value that climate investments bring.

A clear understanding of this alignment, or the extent to which it can align with NDC actions, offers the private sector potential advantages. First, it enables the sector to clearly actionable actions, which can be translated into business opportunities.

From a longer-term perspective, adopting reporting frameworks is also the first step towards reporting and disclosing impacts on climate objectives and SDGs. For the private sector, this can improve valuations and credit scores. Impact investors and climate finance sources may also be more comfortable providing financing to private stakeholders with established reporting frameworks and that understand the impact their business has on the country's climate challenge.

6.2 REPORTING FRAMEWORKS

Côte d'Ivoire's NDC and the SDGs have been chosen as the main reporting frameworks for this report. Business opportunities in the energy sector identified here are linked to NDC objectives and SDG targets in the following tables. To provide more in-depth information to businesses, clear metrics representing measurable key performance indicators are also included.

The reporting frameworks are intended to be leveraged and tailored by individual businesses, depending on the specific characteristics of each. For example, SHS providers offering financial services, such as asset-based lending, may use impact metrics related to access to finance.

6.2.1 RENEWABLE ENERGY: ON-GRID UTILITY SCALE POWER GENERATION

On-grid utility-scale power generation-related businesses, such as IPPs and developers, have a direct impact on the amount of clean energy available. They also offer important co-benefits, such as in health and education, and contribute to the larger and longer-term goal of reducing the energy cost and increasing the ratio of renewable energy available on the grid.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NDC target	NREAP Specific action	SDGs	Outcomes (SDG target or equivalent)	
DEVELOPING ON-GRID RENEWABLE ENERGY POWER GENERATION PLANTS (IPPS)	Increase the share of renewable energy to 42 percent in the electricity mix by 2030	Increase small hydro installed capacity to 131MW Increase medium-large hydro installed capacity to 1,592MW Attain utility- scale solar electricity installed capacity to 424MW Attain utility- scale biomass electricity installed capacity up to 485MW	7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services 7.2 Increase substantially the share of renewable energy in the global energy mix	***Reduced cost of energy (US$)*** ***RE ratio in the energy mix (%)*** # of households connected # and value (US$) of investments Total capacity installed (by energy source) (MW)
			13 – Climate action	Accelerated decarbonization of the energy and C&I sectors (reduced GHG emissions)	Direct emission reduction achieved through installation of renewable energy capacity (tCO_2e)
			3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Reduced ratio of fossil fuels used in the energy mix (total % of the energy mix)
			4 – Quality education	4.1, 4.2, 4.3 Improved access to education for all girls and boys	School attendance rate (increased # of students)

KEY

Direct impact | ***Long-term industry impact*** | Co-benefits

6.2.2 RENEWABLE ENERGY: INDUSTRIAL USE OF RENEWABLE ENERGY GENERATION

Industrial use of renewable energy generation related to businesses, such as developers, has a direct impact on the provision of clean energy at reduced cost, contributing to the decarbonization of industries.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NDC target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
PROVIDING RENEWABLE ENERGY SOLUTIONS TO INDUSTRIES	Increase the share of renewable energy to 42 percent in the electricity mix by 2030	Implement a strategy to reduce waste in industry energy consumption Encourage companies to invest in energy-efficient equipment Evaluate the potential for substitution or optimization (cogeneration or valorization)	7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services 7.2 Increase substantially the share of renewable energy in the global energy mix	Reduced cost of energy (US$) Reduced need for diesel generators (litres of diesel used) # and value (US$) of investments Capacity installed (MW)
			9 – Innovation and infrastructure	9.4 Upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes	Direct carbon reduction achieved by installing of renewable energy capacity (tCO_2e) Reduced ratio of fossil fuels used in the energy mix (total % of the energy mix)
			13 – Climate action	Accelerated decarbonization of the energy sector	
			3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Reduced use of fossil fuels (diesel generators, etc.) (litres of diesel)

KEY

Direct impact | ***Long-term industry impact*** | Co-benefits

6.2.4 RENEWABLE ENERGY: SHS/OFF-GRID ENERGY GENERATION IN SOLAR PV

SHS/off-grid energy generation-related businesses, such as SHS providers, have a direct impact on providing access to clean energy at reduced cost, especially to low-income households. They contribute to the decarbonization of industries such as agriculture and other small-scale industries, if they serve this type of customer. Some developers also provide financing to them, thereby directly improving customers' access to finance.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NDC/NREAP target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
PROVIDING SHS SOLUTIONS TO HOUSEHOLDS AND SMALL INDUSTRIES/ SMES	Increase the share of renewable energy to 42 percent in the electricity mix by 2030	Facilitate the development of PV projects (promotion of PV solar kits, PV pumping system)	7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services 7.2 Increase substantially the share of renewable energy in the global energy mix Improved access to energy, especially in rural areas	Reduced cost of energy (US$) # of households with a SHS kit in rural areas # of households with a SHS kit in urban areas Average capacity installed by household (W) # of SMEs and other productive enterprises with SHS kit Average capacity installed by SME (W) Total capacity installed (MW)
			1 – No poverty	1.2 Reduce at least by half the proportion of men, women and children of all ages living in poverty in all its dimensions	# of low-income households with SHS kit
				1.4 Ensure that all men and women, in particular the poor and the vulnerable, have equal access to basic services, appropriate new technology and financial services, including microfinance	# and value of loans (US$) (asset financing) developed directly by SHS providers (households/SMEs) # and value of loans (US$) provided by local financing organizations
			9 – Innovation and infrastructure	9.3 Increase the access of SMEs to financial services, including affordable credit, and their integration into value chains and markets	
			2 – No hunger	2.1 End hunger and ensure access by all people to safe, nutritious and sufficient food all year round 2.3 Double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition and non-farm employment	# of water pumps using SHS kits

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NDC/NREAP target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
			2.4 Ensure sustainable food production systems and implement resilient agricultural practices that increase productivity and production		Direct carbon reduction achieved through installation of renewable energy capacity (tCO_2e)
			9 – Innovation and infrastructure	9.4 Upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes	
			13 – Climate action	Accelerated decarbonization of the energy sector	
			3 – Good health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination	Reduced use of fossil fuels (diesel generators, etc.) (litres of diesel)
			4 – Quality education	4.1, 4.2, 4.3 Improved access to education for all girls and boys	School attendance rate (increase in the # of students)
			5 – Gender equality	5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Increased # of women with stable income generation activity

KEY

Direct impact | ***Long-term industry impact*** | Co-benefits

6.2.6 CLEAN COOKING

Clean cooking-related businesses, such as stove manufacturers and fuel producers, have a direct impact on providing clean energy for cooking. They also contribute to decreased rates of deforestation. These businesses have a significant impact on poverty levels and on improving access to finance for clean cooking. They offer significant co-benefits in health, gender equality and education.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NREAP target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
MANUFACTURING IMPROVED COOK-STOVES **MANUFACTURING LPG COOKSTOVES** **MANUFACTURING EFFICIENT FUELS** **DISTRIBUTING CLEAN COOKING SOLUTIONS**	Increase the share of population using improved cooking solutions to 10 percent by 2030 Increase the share of charcoal produced by efficient carbonization technologies to 16 percent by 2030 Increase the share of population using modern alternative cooking fuels (LPG) to 90 percent by 2030	N/A	7 – Sustainable energy	7.1 Ensure universal access to affordable, reliable and modern energy services	# of efficient stoves deployed # of LPG stoves deployed # of households serviced in rural areas for efficient fuel Direct carbon reduction achieved through the use of efficient fuels (LPG, pellets, briquettes) (tCO_2e) Volume of wood fuel/ inefficient charcoal used for cooking decreasing (tons) ***Additional ha of forest preserved***
			13 – Climate action	Accelerated decarbonization of the energy sector	
			15 – Life on land	15.2 Promote the implementation of sustainable management of all types of forests, halt deforestation, restore degraded forests and substantially increase afforestation and reforestation globally	
			1 – No poverty	1.4 Ensure that all men and women, in particular the poor and the vulnerable, have equal access to basic services, appropriate new technology and financial services, including microfinance	# and value of loans (US$) (asset financing) developed directly by clean cooking solution providers (households) # and value of loans (US$) provided by local financing organizations (MFIs, banks)
			3 – Good health	3.9 Reduced deaths and illnesses from household pollution	# of related illnesses and deaths
			5 – Gender equality	5.4 Recognize and value unpaid care and domestic work through the provision of public services, infrastructure and social protection policies and the promotion of shared responsibility within the household and the family as nationally appropriate 5.5 Ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life	Reduced use of biomass (wood fuel) for cooking (tons) Time spent collecting fuel (hours per week) Time spent cooking (hours per week) Increased # of women with stable income generation activity
			4 – Quality education	4.1, 4.2, 4.3 Improved access to education for all girls and boys	School attendance rate (increase in the # of students)

KEY

Direct impact | ***Long-term industry impact*** | Co-benefits

6.2.7 LOW-CARBON TRANSPORT SECTOR (BRT SYSTEM)

Low-carbon transport systems, including BRT systems, have a direct impact on decreasing the amounts of fuel used for personal vehicles. They offer significant health benefits by reducing air pollution.

BUSINESS OPPORTUNITY	CLIMATE FRAMEWORK		SDG FRAMEWORK		METRICS
	NDC target	Specific action	SDGs	Outcomes (SDG target or equivalent)	
INFRASTRUCTURE DEVELOPMENT FOR BRT LINES **OPERATION OF BRT LINES**	Decrease GHG emissions by 28 percent by 2030, compared to BAU scenario	Improve mobility and development of low-carbon transport offers Integrate energy/climate dimension in territorial planning documents to limit distances, work in functional mix and propose efficient public transport policies Support municipalities to develop urban transport plans (such as Abidjan urban train) Facilitate the purchase of low-polluting vehicles and disposal of the most polluting ones by implementing standards, incentives or obligations	11 – Sustainable cities and communities	11.2 Provide access to safe, affordable, accessible and sustainable transport systems for all 11.6 By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	# of lines Kms of BRT operational # of users Decrease in personal vehicle traffic (# of vehicles per day) Decrease in commuting time (time per day used for commuting) # of standards and obligations implemented for vehicles # of incentives implemented for the purchase of low-polluting vehicles # of polluting vehicle disposed # of low-polluting vehicles purchased
			7 – Sustainable energy	Promoting the use of energy efficient transportation systems	Reduced use of fossil fuels for personal vehicles (litres of diesel used) # of fuel-efficient vehicles introduced to the fleet # of vehicles recycled
			13 – Climate action	Accelerated decarbonization of the transport sector	Direct carbon reduction achieved through installation of BRT lines (tCO_2e) Direct carbon reduction achieved through renewal of vehicle fleets (tCO_2e)
			3 – Good Health	3.9 Substantially reduce the number of deaths and illnesses from hazardous chemicals and air, water and soil pollution and contamination.	Reduced ratio of fossil fuels used in the energy mix (total % of the energy mix and litres of diesel for personal vehicles)

KEY

Direct impact | ***Long-term industry impact*** | Co-benefits

6.2.8 OTHER TOOLS

To better leverage the reporting framework, it is recommended that private sector stakeholders use additional tools. For example, to calculate GHG emissions reduction and better mainstream the NDCs and SDGs into their operations, private companies may consider leveraging the following tools.

Calculating GHG emissions: Greenhouse Gas Protocol[132]

Calculating GHG emissions can be challenging for businesses. It requires following specific and complex methodologies, which may not be easy to approach without the appropriate guidance.

The Greenhouse Gas Protocol provides standards, guidance, tools and training for businesses and government to measure and manage climate-warming emissions. It provides online tools to measure and manage GHG emissions, as well as related trainings. The platform builds on a long-term partnership with international stakeholders, including the World Resources Institute (WRI) and the World Business Council for Sustainable Development (WBCSD).

Tools include the Project Protocol, which is used to quantify the greenhouse gas benefits of climate change mitigation projects. It provides specific principles, concepts and methods for quantifying and reporting GHG reductions—i.e., decreases in GHG emissions or increases in removals and/or storage—from climate change mitigation projects (GHG projects).

The Protocol also provides extensive guidance on developing business-level emission inventories, measuring emissions from purchased/acquired electricity and estimating avoided emissions.

Aligning with and mainstreaming the SDGs/Sustainability – Impacti Solutions[133]

Aligning with the SDGs and integrating sustainability goals into operations can be an important step for enterprises. The SDGs and sustainability provide new business opportunities that the private sector can explore. However, businesses may find it complex to understand where they fit in the scope of the SDGs.

Impacti Solutions provides tools that can help the private sector understand the SDGs and impact areas where specific businesses can have the greatest effect. The Rapid SDG Opportunity Finder Tool provides personalized recommendations on priority SDGs and impact areas suited to specific businesses. After businesses choose their priority SDGs, the tool introduces them to thematic areas within each SDG. Businesses receive a personalized SDG business profile with chosen priorities at the end of the assessment. This helps them identify strategies to better integrate SDGs in their operations.

Impacti Solutions also provides an online platform to view and update an SDG business profile and connect with like-minded businesses and an Impact Data Management Tool, which can be used to streamline data management, track and manage impact, and create reports.

132 https://ghgprotocol.org/companies-and-organizations
133 https://impacti.solutions/

7. CONCLUSION

Côte d'Ivoire has been implementing significant measures to achieve its objective to become an emerging economy by 2020. Described in 2016 as Africa's fastest-growing economy, the country has achieved significant growth since then (real GDP growth of 7.4 percent in 2018).[134] Although it is a relatively low GHG emitter, with only 0.81 tCO_2/inhabitant (excluding forestry), its national development strategy, combined with strong demographic growth, will lead to a substantial increase in GHG emissions in coming years if mitigation actions are not taken. In addition, Côte d'Ivoire is highly vulnerable to the impacts of climate change that affect all key sectors of its development. [135]

Côte d'Ivoire sets an ambitious target in its NDC: to reduce its GHG emissions by 28 percent by 2030, including generating 42 percent of electricity from renewable energy. The country focuses on the energy sector, as it produces the second-highest amount of emissions after agriculture and those emissions are expected to increase the most under the BAU scenario. Côte d'Ivoire has also set a target to become the main energy hub in West Africa. It thus needs to develop its energy generation capacity, taking its NDC targets into account as well. The electricity production subsector emits most of the energy sector's GHGs, due to the country's strong reliance on natural gas-fired generation (thermal).

The Government of Côte d'Ivoire has been implementing policies to develop an enabling environment to achieve the NDC targets, including in renewable energy, energy efficiency and transport. Côte d'Ivoire recognizes the importance of involving the private sector in the process and has developed policies to liberalize the energy market. While renewable energy-related policies focus on the importance of hydro and biomass technologies, those related to energy efficiency focus on efficient lighting and implementation of energy efficiency standards. In the transport arena, the Government adopted the Abidjan Urban Mobility Project, which includes development of a metro, BRT and water transport in Abidjan to address the lack of reliable mass transport. Although Côte d'Ivoire has worked to offer a favourable investment environment, as shown by its improved ranking in the Doing Business Project, and a regulatory environment favourable to foreign investment, its economy is expected to be severely affected by the Covid-19 pandemic. Return to growth is expected in 2021, but Côte d'Ivoire is likely to grow more slowly than pre-pandemic projections until 2024.

Côte d'Ivoire's macroeconomic environment is stable overall and its economic growth has been brisk, supported by infrastructure development and recent pro-business reforms, which are expected to continue over the coming years. While election-related spending plans will likely increase the fiscal deficit, it will decline gradually in coming years. Election-related political instability is anticipated due to the upcoming presidential election in October 2020. The country has been implementing reforms in recent years to improve its overall business environment and attract private investors, especially in the energy sector. Côte d'Ivoire thus offers a relatively attractive investment climate for investors. However, despite the relatively positive enabling environment, the country also presents a number of sectoral barriers and gaps that hinder additional significant private sector investment. Economic growth still depends heavily on agriculture-led activities, which are highly sensitive to climate conditions and fluctuating commodity prices.

The Government plays a dominant role in the country's renewable energy market, specifically in the hydropower subsector, and IPPs dominate in other technologies (solar and biomass). However, private investors plan to enter the hydropower market and the Government has already signed several memoranda of understanding with private developers for future projects. The private sector is already involved in existing biomass and solar PV projects and is expected to continue investing. However, the country lacks clear institutionalized procedures and policies specific to renewable energies. This makes it difficult for private investors to enter the market and increases investment risks significantly. Supporting the developing of these procedures would help the renewable energy market to expand. This could include developing FITs and auctions, among others mechanisms, and could be based on international experience.

134 International Monetary Fund. *Côte d'Ivoire Data* **https://www.imf.org/en/Countries/CIV.**
135 Government of Côte d'Ivoire. 2015. *Contributions Prévues Déterminées au Niveau National de la Côte d'Ivoire (INDC).*

The C&I market offers significant potential for renewable energy production developers in Côte d'Ivoire. The market could be supported further by establishing net metering to provide more developers and C&I customers more revenue streams. This would also support development of the biomass energy generation market.

Clean cooking in Côte d'Ivoire is driven primarily by the LPG market in urban areas. The market for improved cookstoves remains limited and constrained by the absence of a formalized value chain. To enhance and kickstart the market, the Government could develop awareness campaigns and social campaigns, which would stimulate the demand for clean cooking solutions. Once awareness has improved, it will be important to develop the enabling environment in terms of credit for cookstove purchases. Lease arrangements or other innovative business models can facilitate this.

Deploying energy efficiency also faces several barriers. The key one is the lack of demand for these solutions, which appears to be the result of the cost of energy efficient appliances. Côte d'Ivoire could therefore reduce the cost of appliances by developing a rebate programme, such as those implemented in neighbouring countries and South Africa.

In the transport sector, BRT development plans are being implemented. However, the last-mile transport system is still informal. Programmes supporting the renewal of automotive fleets should thus be scaled up and receive additional Government support.

Fostering innovation and supporting early stage financing will support private sector investment. Venture capital and impact investing activities remain limited. Financing conditions could be improved by strengthening the investment pipeline to attract potential investors by leveraging incubation services and integrating investment practices within incubation and acceleration services.

Renewable energy is the only subsector with quantified targets in the NDC. Private sector investment is expected to be highest in this sector (96 percent, or $1 billion, according to the Government of Côte d'Ivoire[136]). To achieve the 42 percent renewable energy target by 2030 will require private sector investment of between $7.8 billion and $8 billion. In addition, household investment must reach $4.6 million if 10 percent of the population is to be using improved cooking solutions by 2030. According to Government policies and documents, the public sector will be largely responsible for financing energy efficiency measures. This is explained by the lack of clarity regarding objectives, standards and requirements affecting the private sector in the industrial, household and other sectors.

Thus, renewable energy offers significant investment opportunities for the private sector in terms of meeting Côte d'Ivoire's 42 percent renewable energy target by 2030.

136 Ministère de la Salubrité, de l'Environnement et du Développement Durable. 2018. *Premier Rapport Biennal Actualisé de la Côte d'Ivoire sous la Convention-Cadre des Nations Unies sur les Changements Climatiques (CCNUCC).*

UNDP NDC SUPPORT PROGRAMME

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IN CONTRIBUTION TO THE NDC PARTNERSHIP
ACCELERATING CLIMATE AND DEVELOPMENT ACTION

Supported by:
Federal Ministry for the Environment, Nature Conservation and Nuclear Safety
based on a decision of the German Bundestag

aecid Spanish Agency for International Developement Cooperation

Federal Ministry for Economic Cooperation and Development