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# **Research Report**

## **Renewable Energy Procurement in Ethiopia: Overcoming Obstacles in Procurement from Independent Power Producers**

**Volume 2021 Number 87**

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**Seife Ayele, Wei Shen, Tadesse Kuma Worako,  
Lucy H. Baker and Samson Hadush**

**December 2021**

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## Summary

Developing countries are increasingly using auctions for the procurement of utility-scale renewable electricity, due to the potential for attracting private investment. However, auction design and implementation can face serious obstacles due to complex context-specific factors. In 2017, Ethiopia launched its Public–Private Partnership (PPP) policy and procurement framework to promote infrastructure development, including electricity generation. Since 2018, it has organised renewable energy auctions to procure new capacity from independent power producers (IPPs). However, the new framework faces numerous challenges. Using a literature review and primary data from more than 70 interviews and from stakeholder consultations, this study explores the political economy challenges and opportunities facing IPP project preparation, decision-making, coordination and implementation, and risks to investors. To date, Ethiopia has held two rounds of tenders to procure 1,000 megawatts (MW) of electricity from eight projects; the first tender for two solar photovoltaic (PV) projects led to the signing of Power Purchase Agreements (PPAs) and was hailed as one of the cheapest tariff rates in sub-Saharan Africa, at US\$2.526 cents/kilowatt hour (kWh) over 25 years. However, none of the projects have yet become operational. This study also finds fault lines impeding the implementation of IPP projects, including the risk of foreign currency availability and convertibility of Ethiopian birr to expatriate profits. It proposes measures to overcome these obstacles and mitigate risks, to put Ethiopia on course to achieve universal access to electricity by 2030.

## Keywords

renewable energy procurement; renewable energy transition;  
electricity generation; public–private partnerships;  
independent power producers; policy; Ethiopia.

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## Executive summary

Ethiopia has made major strides in improving its electricity sector in the past two decades. However, the sector remains characterised by heavy dependence on publicly financed hydropower generation, poor electricity access, and unreliable power systems. Over 90 per cent of its current 4,478 megawatt (MW) capacity comes from hydroelectric power generated by the government, and only 44 per cent of the population (estimated at 117 million) have access to electricity. The National Electrification Programme (NEP 2.0) and the Ten Years Perspective Development Plan (2021–2030) (National Planning Commission 2020) aim to increase capacity to 17,056MW and achieve universal access by 2030. Nearly a quarter of new generation capacity is set to be procured from non-hydropower renewable resources, mainly by private sector independent power producers (IPPs).

Various reforms have been introduced to help realise these targets. Recognising the importance of a robust procurement framework to attract private investment into the infrastructure sector, in 2017 the Government of Ethiopia introduced the Public–Private Partnership (PPP) policy. Subsequently, the Public–Private Partnership Proclamation 1076/2018 set out the institutional and legal framework for implementing the policy. Several non-hydro renewable energy projects were planned, and auctions launched from 2018. Yet, the implementation of the new procurement framework faces challenges, as well as bringing opportunities for private sector participation in order to meet the target of universal access. Ethiopia's challenges are accentuated by the fact that it is new to procuring electricity through market-based auction mechanisms and thus has institutional and technical capacity limitations.

The UK government-funded study, **Renewable Energy Procurement in Ethiopia: Overcoming Obstacles in Procurement from Independent Power Producers**, aimed to explore the emerging challenges and opportunities. The study drew on a wide literature review, primary data from more than 70 interviews and stakeholder consultations, and secondary data exploring the political economy challenges facing IPP project preparation, decision-making, coordination and implementation, and risks to investors. This Research Report documents the findings, conclusions and recommendations of the study.

Following the Ethiopian government's PPP policy and Proclamation, in 2018, it set out the roles and responsibilities of institutions implementing IPP projects. Accordingly, it created a PPP Board and a PPP Directorate General Unit (PPP-DGU), both located within the Ministry of Finance, and defined their respective roles and responsibilities; the government also

set out the roles and responsibilities of Ethiopian Electric Power (EEP) (the power buyer). Shortly after it was set up, the PPP Board approved 19 IPP projects. Two rounds of tenders ensued for the procurement of 1,000MW of electricity from eight projects. Launched in October 2018, the first tender was for two solar photovoltaic (PV) projects, each of 125MW, which led to the signing of a Power Purchase Agreement (PPA) with a Saudi Arabian company, ACWA Power, in December 2019. The agreement resulted in one of the cheapest tariff rates in sub-Saharan Africa – at US\$2.526 cents/kilowatt hour (kWh) over 25 years. Another three IPP projects predating the PPP policy and framework were also approved, and EEP signed PPAs with three IPP project developers: one solar PV and two geothermal projects.

While these were significant developments, at the time of writing, none of the projects had become operational. This study revealed a number of major barriers hindering the development of renewable energy in Ethiopia through an auction-based procurement framework, namely: ambitious electricity generation targets; governance for electricity procurement; and the risk to investors.

**The number and size of IPP projects is too ambitious:** Two tenders were announced in quick succession for eight projects, but without significant preparation and learning from projects that are being implemented. Projects also tend to be large scale, which adds risk. Ambitious energy plans are inherent in the system and driven by narratives around Ethiopia's rich renewable resources and unmet demand. IPP projects were seen as 'quick-fix' solutions. We recommend that target-setting should be more realistic and based on the understanding of complex factors, such as risk to investors in raising project finance.

**IPP governance is rife with institutional tensions** due to overlapping roles and responsibilities, particularly between the PPP-DGU and EEP. The latter perceives that its roles and responsibilities have been 'appropriated' by the former, even though the PPP-DGU has limited capacity to prepare and implement tenders. The tensions appear to have demotivated EEP staff, slowing down the tender process. There is no 'silver bullet' solution to this problem, but the core institutions involved need to draw on their competency areas and work together to succeed. The PPP-DGU could focus on provision of sovereign guarantees for IPPs, while EEP, as an off-taker, could focus on all the technical aspects of electrify procurement via IPPs.

Finally, **investors face a number of risks** – principally the foreign currency availability and convertibility of Ethiopian birr. Availability is a reflection of the unhealthy status of Ethiopia's foreign exchange (forex) reserves. While this is not new or unique to Ethiopia, what makes it pronounced to investors and their financiers is the unpredictable nature of access

to forex to expatriate profit. Moreover, armed conflicts in northern Ethiopia, as well as low-level ethnic-based political tensions across the country, conflated with global geopolitics and use of 'soft' power, have been straining investment flows into renewables and other sectors. The study proposes a range of measures to mitigate this risk, including commitment to a timeline for currency repatriation.

The above challenges are largely part of the learning process during the transition from a state-led to a market-led development pathway in the energy sector. While there are no immediate solutions to challenges, there are areas for improvement, as indicated above. The most urgent task for the new tender-based renewable energy IPP projects in Ethiopia is to reach the milestone of financial close (securing project funds) for at least one awarded IPP project, as a successfully implemented project would speak for itself regarding the feasibility and credibility of procurement via IPPs, despite the various challenges and concerns. Before such a milestone is achieved, it would seem unwise to vigorously promote new renewable energy IPPs under current circumstances.



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## Acronyms

AfDB	African Development Bank
CEO	chief executive officer
DFID	Department for International Development (UK)
EEA	Ethiopian Energy Authority
EEG	Energy and Economic Growth Research Programme
EELPA	Ethiopian Electric Light and Power Authority
EPP	Ethiopian Electric Power
EEU	Ethiopian Electric Utility
EPC	Engineering, Procurement and Construction
EPRDF	Ethiopian People's Revolutionary Democratic Front
ESIA	Environmental and Social Impact Assessment
FCDO	Foreign, Commonwealth & Development Office (UK)

GERD	Grand Ethiopian Renaissance Dam
GETFiT	Global Energy Transfer Feed-in Tariff
GTP	Growth and Transformation Plan
GW	Gigawatt
GWh	Gigawatt hours
IDA	International Development Association
IFC	International Finance Corporation
IPP	Independent Power Producer
IRENA	International Renewable Energy Agency
kV	Kilovolt
kWh	Kilowatt hour
MIGA	Multilateral Investment Guarantee Agency
MoWIE	Ministry of Water, Irrigation and Energy (now Ministry of Water and Energy) <sup>1</sup>
MW	Megawatt
NBE	National Bank of Ethiopia
NDPC	National Development and Plan Commission (now Ministry)
NEP	National Electrification Program
PPA	Power Purchase Agreement
PPP	Public–Private Partnership
PPP–DGU	Public–Private Partnership Directorate General Unit
PRI	Political risk insurance
PV	Photovoltaic
REIPPPP	Renewable Energy Independent Power Producers Procurement (South Africa)
REPE	Renewable Energy Procurement in Ethiopia (EEG-funded research project)
RFQ	Request for Qualification
RFP	Request for Proposals
SDG	Sustainable Development Goal
TMGO	Tulu Moya Geothermal
USAID	United States Agency for International Development
USP	Unsolicited proposal

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<sup>1</sup> On 6 October 2021, the Ministry of Water, Irrigation and Electricity was restructured to become the Ministry of Water and Energy (see Fana Broadcasting Corporate 2021a), but reference is made to MoWIE throughout the report.

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# 1. Introduction

## 1.1 Background to the study

An approach that involves using auctions for the procurement of utility-scale renewable electricity has gained prominence in developing countries due to its potential to attract significant private investment (Baker, Hook and Sovacool 2021a). Under market-based auctions (also referred to as competitive bidding programmes or tendering),<sup>2</sup> project developers submit a bid with a price per unit below a certain cap at which they will sell the electricity generated by their project to an off-taker, which could be the state-owned utility or a large consumer. The project that meets the qualifying criteria at the lowest price wins the bid. Auctions are usually held under a series of bidding rounds, which set the volume of generation capacity that can be awarded. In some countries, capacity is specified by technology type, while in other cases, auctions are technology neutral (*ibid.*).

Ethiopia launched its Public-Private Partnership (PPP) policy in 2017 to promote national infrastructure development, including the generation of electricity (Ministry of Finance and Economic Cooperation 2017). Following the publication of Proclamation 1076/2018 (Federal Democratic Republic of Ethiopia 2018) and the formation of the PPP Board in 2018, the PPP-Directorate General Unit (PPP-DGU) began organising renewable energy auctions to procure new capacity from independent power producers (IPPs). Auction design appears relatively simple; however, in practice, its implementation can face serious obstacles due to complex factors of political economy. These include interactions with the broader regulatory system, friction with incumbent actors, and a mismatch of expectations between regulators and private investors (Baker *et al.* 2021b). Despite the huge potential of renewable energy auctions, there are notable knowledge gaps regarding how these obstacles can be overcome and how the risks can be mitigated.

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<sup>2</sup> In this report we use the terms 'competitive bidding', 'tendering' and 'auctions' synonymously. The term 'tender' refers to the procurement process and the term 'auction' to the procedure of selecting competing bids by price. In practice, the two terms are used interchangeably (Gephart, Klessmann and Wigand 2017).

## 1.2 Objective of the study

This study was funded by the UK government's Energy and Economic Growth (EEG)<sup>3</sup> programme Renewable Energy Procurement in Ethiopia (REPE) project, which aims to understand the legal and institutional framework needed for renewable energy competitive bidding programmes to be effective in Ethiopia. The project was designed to draw lessons from Ethiopia's experience of power generation procurement (pre-dating the PPP framework) and from the experiences of other countries (such as South Africa and China) with renewable energy auction programmes.<sup>4</sup> The project aimed to answer the following research questions around barriers and opportunities for private sector participation: What are the barriers and constraints during auction design and implementation of renewable energy projects? Are there adequate skills available in Ethiopia to design, build and operate energy projects? How are any capacity gaps addressed? What are the key agendas of private sector actors involved in IPPs in Ethiopia, and what types and levels of risk do investors face?

## 1.3 Research methods and tools

### 1.3.1 Data collection methods and tools

The study is anchored in the political economy analysis of the Ethiopian renewables sector, which situates energy within the prevailing political and economic structures, institutions and processes, as well as interactions between actors to address constraints to policy change to improve outcomes (DFID 2009; Ayele, Zegeye and Nisbett 2020; McCulloch, Sindou and Ward 2017). We explore PPP/IPP governance structures, their evolution, and who decides and influences their decision-making and outcomes. While appreciating the non-linear nature of the policy process (agenda-setting, policy formulation, decision-making, implementation, and evaluation) (Jann and Wegrich 2007), we use a political economy approach to understand the complex realities at each stage. Thus, in the study, we involved core stakeholders from the renewable energy sector, both state and non-state actors. We used diverse data collection methods and tools, as follows.

1. **Deskwork:** We reviewed academic articles and grey literature on the Ethiopian electricity/political economy of renewable energy, its politics, policy and practice. The study aimed to provide a historical review and analysis of IPP activities focusing on Ethiopia's recent projects,

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3 See **Energy and Economic Growth** (accessed 1 November 2021).

4 This lesson is documented in a paper by Baker, Shen and Ayele (2021b).

and to conduct a comprehensive review of Ethiopian government policies, legal frameworks and programme documents on IPPs.

2. **Stakeholder and key informant interviews:** Deskwork was complemented by in-depth interviews with individuals from key stakeholder institutions, including government departments and donors involved in and/or knowledgeable about renewable energy politics, finance, policy and practice. We also interviewed chief executive officers (CEOs) and managers of project companies, consultants and transaction advisors. In total, primary data was generated from more than 40 interviews and 27 consultation workshop participants (see Table 1.1)
3. **In-depth stakeholder consultation workshop:**<sup>5</sup> As noted, 27 key stakeholders from government and non-governmental organisations participated in a workshop held in August 2019 in Addis Ababa. The aim was to identify major obstacles to and opportunities for renewable energy auction programme design and implementation in Ethiopia.

Phase 1 interviews with government and donor representatives were conducted in person between November and December 2019. However, in early 2020, the project and the fieldwork were interrupted, mainly by the Covid-19 pandemic. Thus phase 2 interviews with project company managers, financiers and consultants were conducted online between June and July 2021.

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5 Participants were from the public sector (Ministry of Finance and MoWIE policymakers, energy regulators, generators and transmitters and distributors) and bilateral and multilateral donors involved in the sector (28 August 2019, Elilly International Hotel, Addis Ababa).

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## Table 1.1 Interviewees and consultation workshop participants

Institutional representation of research participants	Number of participants	Participants' roles
Government agencies: Ministry of Finance/PPP-DGU MoWIE EEP, EEU and EEA	<b>29</b> 7 3 19	Including senior staff at the Ministry of Finance and PPP-DGU heads of departments at MoWIE, and EEP, EEA and EEU; project management team members
Multilateral and bilateral donors	<b>7</b>	Including representatives from the World Bank, the African Development Bank (AfDB) and Power Africa in Ethiopia
Company CEOs, consultants and transaction advisors	<b>7</b>	Including representatives from Tulu Moya Geothermal, ACWA Power and Metehara projects, and key informants
Total number of interviews	<b>43</b>	
Consultation workshop participants (total)	<b>27</b>	Government and non-governmental organisations (NGOs), various donor representatives

Source: Authors' own.

### 1.3.2 Research instruments and analytical tools

Tailored to the specific roles of interviewees, data collection instruments were used to collect data from the major renewables agencies. Tools included questions about the governance of IPP/PPP and the private sector's responses to the newly introduced PPP policy – that is, how policy and its implementation in practice shape their routine and strategic operations when investing in renewable energy projects in Ethiopia. Our questions focused not only on major challenges (and opportunities) but also on how such obstacles and risks might be addressed or mitigated. Interviews were transcribed and early findings were presented to core stakeholders in two webinars,<sup>6</sup> and validated. Interview transcripts and feedback from the stakeholder workshop were used to identify and code recurring themes, followed by analysis and synthesis. The primary data was triangulated with secondary sources in order to draw final conclusions. The combination of interviews and document analysis helped to reveal the power dynamics and dominant players around renewable energy IPP governance, and the perceived (and real) risks of implementing IPP projects, as well as the opportunities they present.

<sup>6</sup> The first webinar was held on 24 February 2021 and the second on 16 November 2021.

## **1.4 Structure of the report**

Focusing on IPP experiences in sub-Saharan Africa, section 2 presents a review and synthesis of the literature on renewable energy procurement through IPPs. Section 3 reviews the evolution and current status of electricity sector development in Ethiopia, covering the most recent drivers of the renewables sector and the context for procurement through IPPs. Section 4 presents our findings, detailing the opportunities and challenges of procuring electricity through IPPs from the perspective of the implementing institutions and their capabilities. Section 5 presents findings on the challenges and opportunities from the perspective of private sector actors. Section 6 discusses possible approaches to reducing or removing the barriers to successful procurement of renewable energy in Ethiopia, while section 7 presents our conclusions and recommendations.

## 2. Renewable energy procurement from IPPs in the global context

### 2.1 Renewable energy procurement from IPPs in a historical context

To understand the emergence of market-based frameworks for the procurement of utility-scale renewable energy from IPPs in sub-Saharan Africa, as indeed elsewhere, we must first situate electricity governance within its historical context, including the ideological tensions that have long existed between state ownership and control of the electricity sector on the one hand, and its liberalisation on the other (Baker *et al.* 2021a). In the first half of the twentieth century, the electricity sector, in countries where it was well-established, was operated and managed by vertically integrated state-owned utilities. Such an arrangement followed the rationale of the time, which saw the state as the 'custodian of the public interest'. However, under global neoliberal trends of the 1980s and 1990s, this rationale started to shift in favour of the liberalisation of the electricity sector alongside other networked industries such as rail and water (Gratwick and Eberhard 2008).

This shift was led by England and Wales, soon followed by other (mostly developed) countries, including Norway, Chile, Australia and New Zealand (Bacon and Besant-Jones 2001), resulting in the so-called 'standard model' of electricity sector reform, which quickly became a global template. The rationale behind the standard model was that public ownership resulted in poor technical performance and was unable to meet the high levels of investment required by the electricity sector, including its expansion to previously unserved areas. Proponents of the standard model argued that a state-owned monopoly utility should be unbundled into private generation, transmission and distribution companies, with transmission carried out by a government or private body companies on the basis of principles of efficiency and cost-effectiveness (Baker *et al.* 2021a). At its most complete, progress within this 'standard model' means moving from a situation where all core functions of electricity generation, transmission and distribution are vertically integrated, to one where significant competition is introduced in generation, transmission and subsequently distribution in wholesale and retail markets (Gratwick and Eberhard 2008). The model relied on the creation of a strong independent national regulator to 'regulate the monopoly prone parts' of the industry (Victor and Heller 2007: 7). In many developing countries, the model was

promoted by multilateral lending institutions such as the World Bank and implemented by technical consultants as part of the loan conditionalities of structural adjustment programmes (Gratwick and Eberhard 2008).

However, the logic behind the standard model and electricity sector liberalisation more generally failed to predict that its implementation in practice would be much more complex and result in various forms of failure, incomplete implementation, and stranded assets, particularly in developing countries (Eberhard and Godinho 2017). There are various reasons for this. First, the high capital costs and long-term investment horizons (of approximately 30 years) of many electricity generation projects made it difficult to attract the anticipated levels of private investment, particularly in low- and middle-income countries. Second, the profit-driven nature of investment prioritised conventional technologies over low-carbon ones such as wind and solar, which during the 1980s and 1990s were considered relatively high risk by investors. The negotiation of the contractual and regulatory terms for private power generation was also challenging and complex, and saw national energy regulators undermined by vested interests, struggling to fulfil their mandate in a market where information is incomplete (Victor and Heller 2007). A further area of tension was the importance assigned to the host government and/or other national stakeholders to provide a sovereign-backed guarantee as a bottom line of risk mitigation for investors. Finally, the emphasis on market competition failed to protect the provision of basic energy services to poor people, and contributed to disastrous social and economic consequences in sub-Saharan Africa and South Asia (Hall 2010). Consequently, there are few countries in which the standard model has been fully implemented (Sen 2014; Baker, Shen and Ayele 2021b).

In recent years, a growing consensus has developed within mainstream thinking, including within the World Bank, that a more flexible and context-specific approach is needed to develop a strong and capable power sector (Foster and Rana 2020). This is particularly important in the context of rapid technological changes in renewable electricity generation at both the utility and distributed scale, leading to increased cost-competitiveness throughout the renewable energy supply chain (Baker *et al.* 2021a). Renewable energy, particularly solar photovoltaic (PV) and onshore and offshore wind, now dominates new investment in the global power sector. More diverse models of electricity governance have also emerged, including various forms of hybrid or dual markets in which vertically integrated, state-owned utilities remain as the dominant player and buyer of electricity, but IPPs contribute a certain amount of generation capacity (Eberhard *et al.* 2016). As the next subsection illustrates, South Africa is a prime example of this: since 2011, utility-scale renewable energy

has been procured from IPPs, but its state-owned utility Eskom remains as the single buyer and owner of the transmission grid, and generates the bulk of the country's electricity generation. As section 3 of this report illustrates, in Ethiopia, renewable energy IPPs have increasingly been facilitated by tenders or competitive bidding programmes, which, in the early 2000s, replaced feed-in tariffs as the most popular mechanism of procurement.<sup>7</sup>

According to the International Renewable Energy Agency (IRENA), by the end of 2018, 106 countries had held at least one auction for the procurement of renewable electricity (IRENA 2018: 88). And with the above context in mind, the introduction of renewable energy procurement programmes in many countries, including in sub-Saharan Africa, has been located within highly diverse national contexts at various stages of liberalisation, institutional efficiency and regulatory capacity.

## 2.2 Energy generation through IPPs in South Africa

The first country in sub-Saharan Africa to implement a competitive bidding programme for utility-scale renewable energy was South Africa, under its Renewable Energy Independent Power Producers Procurement Programme (REIPPPP), launched in 2011 into an otherwise state-owned, coal-fired monopoly electricity sector (Baker *et al.* 2014). REIPPPP remains the largest procurement programme for renewable energy to date in sub-Saharan Africa. As discussed below, despite various challenges and delays to the programme, South Africa has now seen the procurement of approximately 6.4 gigawatt (GW) of renewable energy, the majority from solar PV and onshore wind, from 112 IPPs under four bidding rounds<sup>8</sup> (IRENA 2018). The timeline between bid submission date and preferred bidder announcement ranged between one and ten months. Likewise, the timeline between preferred bidder announcement and financial close<sup>9</sup> was less than 18 months, while the timeline between financial close and start of commercial operation ranged between three and five years. The negotiation and implementation of the REIPPPP, supported by technical assistance from various bilateral donors (including GIZ, the Danish International Development Agency (DANIDA) and the Development Bank of South Africa) took place in a political and economic climate that

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7 Broadly speaking, under a feed-in tariff, the electricity regulator or government sets a fixed tariff above the market rate with a pre-determined return on investment that will be paid to qualifying IPPs or individual generators for each kWh of electricity they sell to the grid over the lifetime of a project. In comparison, auctions follow a competitive market-based framework under which IPPs submit a bid with a price per unit below a set cap at which they will sell electricity to the grid. The project that meets the qualifying criteria at the lowest price wins the bid (Baker *et al.* 2021a).

8 A fifth bidding round was recently launched in March 2021 (IPP Office 2021).

9 Financial close is defined as 'The stage when the Concessionaire ties up with the banks/financial institutions for the funds required for the project, and conditions precedent to initial drawing of the debt have been fulfilled' (Ministry of Finance/PPP-DGU 2019).

has long witnessed strong ideological opposition to private ownership and the introduction of foreign companies in a sector that has resisted many features of the standard model of power sector reform.

The challenges and delays to South Africa's REIPPPP have been at once political, economic and technical. First, there has been strong ideological resistance by Eskom and related political factions to the programme, and to renewable energy and power sector liberalisation more widely. Eskom refused to sign outstanding Power Purchase Agreements (PPAs) from Round 4 of the programme, stating that it would make a loss from having to purchase energy from IPPs and that additional capacity from renewable energy was also unnecessary. Indeed, it took until April 2018, after the inauguration of new President Cyril Ramaphosa, for the PPAs to be finally signed. The future of REIPPPP hung in the balance for some years and Round 5 was only launched in March 2021.

The technical challenges relate largely to the integration of renewable electricity into Eskom's transmission grid, which requires further investment and upgrade in order to accommodate an increase in variable and intermittent generation sources from renewable energy. Moreover, there is now very limited capacity for project connection in areas with good wind and solar resources such as the Northern Cape province, where the majority of solar PV and concentrated solar power projects are located. South Africa's REIPPPP is seen as a trailblazer for the subsequent launch of auctions for the procurement of utility-scale renewable energy elsewhere on the continent (IRENA 2018).

## 2.3 Energy generation through IPPs in sub-Saharan Africa

Most recently, and as the focus of this report, Ethiopia introduced its PPP framework for the procurement of utility-scale renewable electricity in 2017. Other countries in the region have implemented auctions, including Ghana, Mauritius, Malawi, and Uganda (*ibid.*). Uganda was the first country in Africa to unbundle its electricity generation and distribution sectors into separate utilities, to offer private concessions and open the sector to IPPs – a process it started in the late 1990s. After South Africa, Uganda has the largest number of IPPs in the region, making a total of 158MW of capacity from small projects, including hydropower, biomass and solar PV. In 2013, Uganda launched the solar PV auction component of its Global Energy Transfer Feed-in Tariff (GETFiT) programme, a complex process of negotiation and experimentation that received significant technical assistance from Deutsche Bank and the German development bank KfW. However, because this programme is for

small-scale projects and for far less overall capacity than that of South Africa, its design was somewhat different to that of REIPPPP, and it has been less competitive (Bhamidipati, Haselip and Hansen 2019; IRENA 2018).

Sub-Saharan Africa has also seen a series of auctions dedicated and implemented exclusively for solar PV under the World Bank International Finance Corporation's (IFC) Scaling Solar programme, in Ethiopia, Zambia and Senegal. Under the programme, the IFC assists with implementation of competitive bidding programmes for the procurement of grid-tied solar PV in smaller power markets where governments may not be able to dedicate extensive resources to setting up renewable energy procurement programmes (IRENA 2018: 42). This assistance includes helping large developers deal with identified investment risks (such as off-taker credit quality, political risks, and the need for a bankable PPA) (*ibid.*), and the provision of advisory services and standardised contracts.

Zambia was the first country in which the Scaling Solar programme was implemented, with its Industrial Development Corporation acting outside of official ministerial department channels as the procurement unit. Launched in October 2015, the programme marked the first renewable energy procurement programme of significant scale outside of South Africa, and focused on bringing two solar PV projects greater than 50MW on to the grid within two years. These projects began operations in early 2019. Zambia's Scaling Solar programme followed a number of the same steps as the REIPPPP, as well as the competitive tender component of GETFiT, and has been lauded for its low prices (IRENA 2018). However, unlike in South Africa and Uganda, which required that winning projects adhere to socioeconomic criteria, project selection in Zambia was based purely on price; moreover, the government selected the project sites (Kruger, Stritzke and Trotter 2019).

The implementation of Ethiopia's Scaling Solar programme and other IPPs are discussed in subsequent sections.



## 3. The political economy and renewable energy sector of Ethiopia

### 3.1 Electricity political economy context

With 117 million people (2021 estimate), Ethiopia is the second most populous country in Africa after Nigeria. Its government system is a federal parliamentary republic, with 11 self-governing regions<sup>10</sup> and two city administrations. Between 1991 and the end of 2019, the country was ruled by the Ethiopian People's Revolutionary Democratic Front (EPRDF). Since taking power in 2018, Prime Minister Abiy Ahmed has embarked on radical political and economic reforms, including dissolving the EPRDF and forming a new Prosperity Party in November 2019. Agriculture continues to play a dominant role in the economy and contributes 35 per cent of gross domestic product (GDP). About 80 per cent of Ethiopians live in rural areas (Ayele 2021).

Ethiopia is undergoing rapid socioeconomic transformation. For most of the past 15 years, its economy has seen double-digit growth, reaching a respectable rate of 7.9 per cent in 2019 (World Bank 2019b; MoWIE 2019; Ayele 2021). Reforms have been driven by public investment in key sectors, including energy, where the focus has been on hydropower. Ethiopia has abundant and diverse renewable energy resources in hydropower, sunshine, geothermal and wind energy (MoWIE 2019), but it has not sufficiently exploited its resource advantage. Hydropower is the most exploited source but remains below 10 per cent of its potential. Exploitation of the huge potential of solar, geothermal and wind sources is negligible. Consequently, Ethiopia's energy supply is highly dependent on biomass resources, namely firewood and agricultural waste (which accounted for 87 per cent of total national energy consumption in 2017), while modern fuels contributed about 13 per cent of total energy consumption, of which hydrocarbon products constitute 10.4 per cent and electricity 2.6 per cent (MoWIE 2018).

Despite being endowed with abundant renewable resources, only 44 per cent of Ethiopia's population have access to electricity, and with per capita electricity consumption of 100kWh per year, Ethiopia is the second largest electricity access-deficit country in sub-Saharan Africa (MoWIE 2019). Consequently, use of electricity for social and

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10 Following a referendum by residents in five zones and one special district on 30 September 2021, Ethiopia's 11th region, South West Ethiopia, has been created (see Fana Broadcasting Corporate 2021b).



economic developments is very low – for example, only 24 per cent of primary schools and 30 per cent of health centres have access to electricity (World Bank 2019a). Increasing per capita energy consumption thus requires accelerated investment in energy infrastructure in the medium term (World Bank 2019; MoWIE 2019; Gordon 2018).

However, electricity generation capacity showed a huge jump over the past three decades, from 380MW in 1991 to 4,300MW in 2017 and 4,478MW in 2020 (National Planning Commission (NPC) 2020; Tesfamichael *et al.* 2021). With the Grand Ethiopian Renaissance Dam (GERD) and other major projects in the pipeline, Ethiopia aims to reach 100 per cent electricity access by 2030, achieving Goal 7 of the UN Sustainable Development Goals (SDGs). To meet its ambitious goals, over the past seven years, Ethiopia has taken major steps to procure electricity from solar, wind and geothermal sources from IPPs, but not one project has yet been completed. Below, we review policy and institutional reforms and the resource base to provide the context for electricity procurement through IPPs in Ethiopia.

### 3.2 Reforms in the Ethiopian electricity sector

Electric lights were believed to have been switched on at Emperor Menelik II's palace in the late 1890s (Gnognno 2019), but until 1956–57 Ethiopia had no formal national policy or agency to guide the generation and distribution of electricity. Thus, 1956–57 can be seen as the baseline in terms of policies, institutions and technical capacity for the development of electricity in the country. In 1956, an independent vertically integrated entity, the Ethiopian Electric Light and Power Authority (EELPA), was established under the Ministry of Mines and Energy (Teferra 2002). EELPA was tasked with generating, transmitting and providing access to electricity, with mandates to develop technical and human capacity. Then, with the start of three successive five-year development plans in 1957, energy became a key development input, with each plan setting out a vision and targets for electricity generation, transmission and use, and technical development. To meet national targets as well as growing demand, power plants were built with relatively larger installed capacities. One of these was the Koka hydroelectric power plant, completed in 1960, which had an installed capacity of 43MW. In subsequent decades, more large hydropower plants followed, including the 153MW Melka Wakena plant built during the socialist-cum-military government (the Derg) regime (Carr 2017).

Following the electricity sector liberalisation trends in sub-Saharan Africa (see section 2), the period from 1997 to 2013 saw partial reforms to the state monopoly, EELPA. First, in 1997, EELPA was restructured into two entities: the Ethiopian Electric Power Corporation (EELPA), whose

remit was to generate, transmit, distribute and sell electricity; and the Ethiopian Energy Authority (EEA), whose remit was to regulate the sector (Teferra 2002). The reforms made EEPCo 'independent' of its line ministry in order to reduce bureaucratic delays in decision-making and – at least in theory – to allow it to determine tariff rates based on commercial principles. Since 2010, the electricity sector has been driven by two Growth and Transformation Plans (GTP I: 2010/11–2014/15; and GTP II: 2015/16–2019/20) (NPC 2016). To meet its national and global commitments to the Millennium Development Goals (and subsequently the SDGs), Ethiopia continued to reform its energy sector (World Bank 2019b; MoWIE 2019).

Most importantly, in 2013, a radical restructuring of EEPCo was undertaken in order to drive renewable procurement from private suppliers. Several factors led to these changes. First, EEPCo had been dependent on public finances, which was causing large budget deficits for the treasury. Its investment capacity was low, and it was not able to switch to non-hydropower renewable sources (World Bank 2019b). Its tariff rates (which were as low as US\$0.03/kWh in 2006) also failed to reflect production costs and demand (*ibid.*). Second, there was insufficient investment to meet the ambitious target set by the government in its second GTP, aiming to achieve 17,208MW by 2020, up from 4,300MW in 2016/17 (NPC 2016; World Bank 2019b). Third, droughts and climate change have been threatening sustainable power generation from hydropower sources. Finally, there has also been a pressing need to transition towards a cleaner energy system, as more than 80 per cent of the population currently depend on unsustainable traditional biomass energy sources (World Bank 2019b; Gordon 2018).

Hence the reforms undertaken in 2013 split EEPCo into Ethiopian Electric Power (EEP) and Ethiopian Electric Utility (EEU).<sup>11</sup> EEP was mandated to generate power and build transmission lines, while EEU distributes, sells and manages national electricity operations. Other changes in the policy framework include the following (see also Gordon 2018).

- Energy Proclamation No. 810/2013 was issued to encourage independent power procurement and off-grid renewable systems, and to enhance efficient on-grid management. These policy developments brought the likes of Reykjavik Geothermal to Ethiopia to start one of the pioneer IPPs – the Corbetti Geothermal project.
- Geothermal Resources Development Proclamation No. 981/2016 set out a framework for managing geothermal resources, previously covered by the Mining Law.

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<sup>11</sup> The EEA, however, continued to play the autonomous regulatory role of energy efficiency, conservation, safety and quality; as well as issuing licenses, determining tariffs and setting performance standards.

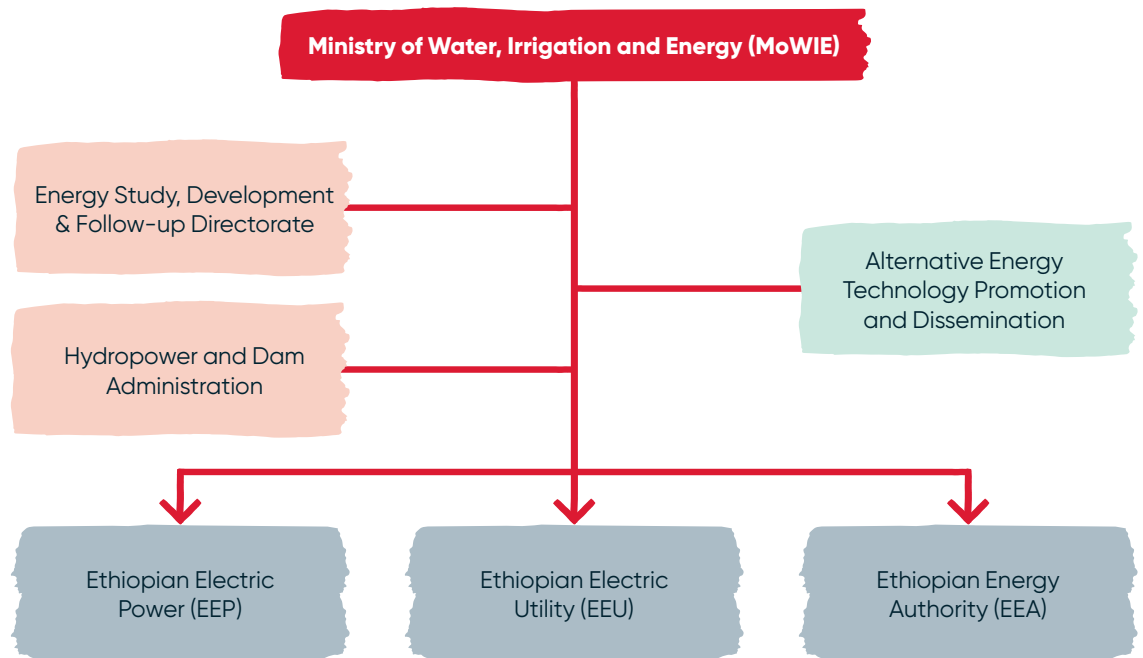
- The 2017 Public–Private Partnership (PPP) policy and subsequent Proclamation No. 1076/2018 both aimed to facilitate private investment in major infrastructure projects, including activities in the electricity sector.
- In 2018, within the Ministry of Finance, a dedicated PPP Directorate General Unit (PPP-DGU) was established to support the design and implementation of IPPs.

Moreover, over the past ten years in particular, policy narratives that drive the sector have also become increasingly important in setting electricity generation and access targets and, at the same time, helping Ethiopia attain its goal of lower middle-income status by 2025 (MoWIE 2019). Narratives about addressing energy poverty or characterising Ethiopia as a ‘tower of energy’, and energy mixing, came to prominence, and Ethiopia continues to plan and implement a series of projects, including its ambitious National Electrification Programme 2.0, Lighting to All. The programme, which comprises on-grid generation, grid extension and densification, and off-grid electrification, provides a roadmap for achieving and financing the universal electrification target (MoWIE 2019). Ethiopia aims to increase capacity generated to 17,056MW by 2030 (NPC 2020; MoWIE 2019).

### **3.3 Governance structure of Ethiopian electricity sector**

The Ministry of Water, Irrigation and Energy provides high-level direction and policy on electricity and oversees its governance. It coordinates a complex and diverse range of actors within the government (including regional bureaus of energy) and non-state actors, cooperatives, the private sector and donors. It monitors sector performance and is accountable for progress and performance (MoWIE 2019).

### Figure 3.1 Electricity governance structure



Source: Authors' own, based on MoWIE (2019)

The ministry supervises the three main electricity agencies (see Figure 3.1):<sup>12</sup>

- The EEP operates and maintains 18 power plants (14 hydropower, 3 wind power and 1 geothermal). It also operates and maintains all high-voltage transmission lines across the country.<sup>13</sup>
- The EEU owns, operates and manages the electricity distribution networks across Ethiopia. It is responsible for maintaining, upgrading and modernising distribution networks to ensure adequate capacity to meet the needs of existing and prospective customers. It is also responsible for meeting the target of enhancing coverage from around 44 per cent to 100 per cent by 2030, in addition to operating and managing sub-transmission (45 kilovolts (kV) and 66kV) and sub-stations<sup>14</sup> (MoWIE 2019). Since 2017, Ethiopia has been exporting electricity (albeit at low levels), with 100MW each to Sudan and Djibouti, earning around US\$80m per year (MoWIE 2019: 6). Kenya is also projected to import 400MW from Ethiopia in 2020 (*ibid.*).

<sup>12</sup> While Figure 3.1 does not capture all actors involved in electricity governance, it is important to note that, besides MoWIE and its subsidiaries, there are regional bureaus of energy and several line ministries involved in the governance system, such as the Ministry of Finance and Economic Cooperation.

<sup>13</sup> See **Power Generation**, Ethiopian Electric Power website.

<sup>14</sup> See **Ethiopian Electric Utility** website.

- The Ethiopian Energy Authority (EEA) is a regulatory agency for the electricity sector, mandated to issue licences for generation, transmission, distribution and sales, as well as the import and export of electricity. It provides a licence for IPPs and monitors compliance.<sup>15</sup>

As we will discuss in subsequent sections, a major departure from the electricity governance structure described above is the governance for renewables procured through IPPs. As noted already, precipitated by huge investment demand for the generation of renewable energy, particularly from solar, geothermal and wind sources, over the past four years the Ethiopian government has put in place a PPP mechanism to promote and facilitate the implementation of privately financed infrastructure projects, including procuring renewable energy from independent power producers. As well as the Ministry of Water, Irrigation, and Energy, the EEP, the EEA, and the EEU, the Ministry of Finance has become a key player in the procurement of renewable electricity from IPPs (see section 4). The Ministry was given the lead role to design PPP programmes and to create a favourable framework for privately financed projects to support Ethiopian economic growth, as well as maintaining macroeconomic stability by reducing growth in public debt, and to ensure transparency, fairness, value for money, efficiency and long-term sustainability (Ministry of Finance and Economic Cooperation 2017). Multilateral and bilateral donor programmes also play a significant role in the procurement of electricity from hydro and non-hydro renewable sources. Notably, this includes the IFC's Scaling Solar programme (see section 2.3),<sup>16</sup> which involved assigning transaction advisors to provide support to project preparation in areas such as: technical and economic analysis, and site identification; bid preparation and tender processes, including request for qualification, request for proposal, proposal review and award; and finalising financial and final project approval, loan agreement, insurance, etc.

Finally, prospective investors in the Ethiopian renewables sector need to interact and navigate with many other agencies for services such as business registration and paying taxes (or claiming exemptions).

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<sup>15</sup> *Ibid.*

<sup>16</sup> See **Scaling Solar, Ethiopia**.

## 4. Findings and analysis of renewable energy IPP procurement in Ethiopia

The next subsections undertake a deeper analysis of the qualitative data that emerged from respondents. The specific aim is to understand the application of the renewable energy IPP procurement framework, the governance of IPPs, auction design and implementation, and the challenges thereof. Hence, the next subsection unpacks the PPP framework, the roles and functions of key stakeholders, and the responses of policymakers and donors on opportunities and fault lines of IPP governance.

### 4.1 The PPP/IPP framework

As noted earlier, in 2017 the Government of Ethiopia launched the PPP<sup>17</sup> policy. As well as ensuring transparency, fairness, value for money, efficiency and long-term sustainability, the policy also aimed to reduce Ethiopia's mounting public debt (Ministry of Finance and Economic Cooperation 2017). Underlying the policy framework are the legal and institutional elements that facilitate projects (Figure 4.1). Proclamation No. 1076/2018 provided the scope for identification and preparation of projects to be financed under PPPs, and defined the stakeholders and institutions established and/or designated to implement the policy (Ministry of Finance and PPP-DGU 2019), as follows.

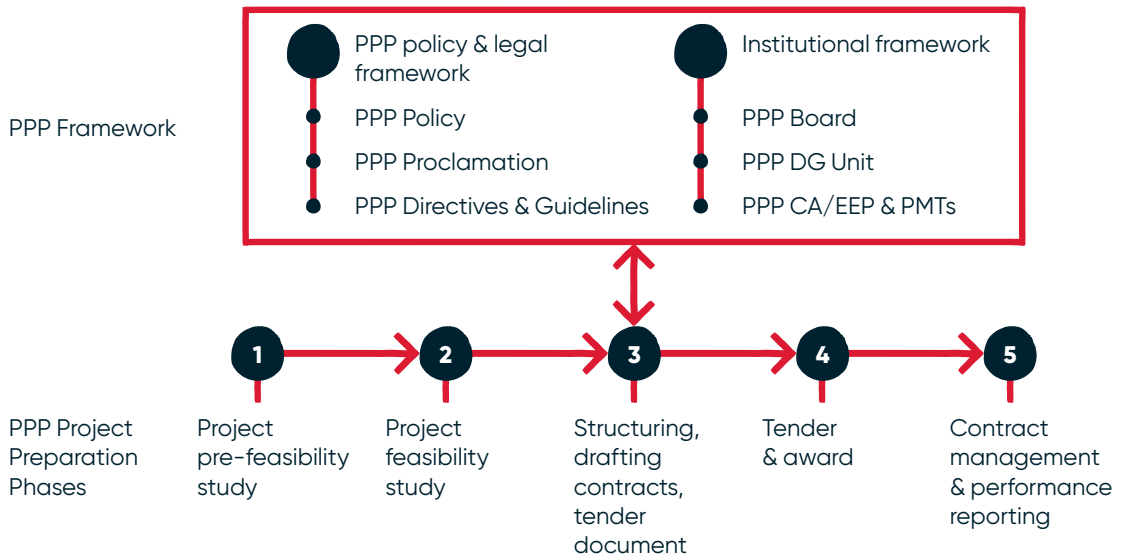
**PPP Board:** On the institutional side of the framework, the PPP Board was designated to serve as the apex body to approve PPP projects. It comprises a panel of senior ministers and officials, including seven from the Ministry of Finance, the National Bank of Ethiopia, MoWIE, the Ministry of Transport, the Ministry of Public Enterprises, the National Planning Commission, the Ministry of Federal and Pastoralist Affairs, two private sector appointed representatives, plus the PPP Directorate-General. The Board is responsible for all PPP projects, covering the approval of project preparation (such as feasibility studies), financial viability, procurement processes, project agreements, approving tender or negotiation of results, selecting private sector actors to participate,

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17 According to Proclamation No. 1076/2018 (Federal Negarit Gazette of the Federal Democratic Republic of Ethiopia 2018), PPP applies to the broad infrastructure sector and it means a 'long-term agreement' between a public sector agency (also known as (aka) a contracting authority) and a private entity (aka a third party) where the private sector provides or contributes to the provision of a public service activity. The private sector receives a revenue stream for providing such service from end-user charges, government budget, or a combination of the two (Proclamation 1076/2018, Article 2). For electricity generation, the private sector receives revenue streams from the public sector buyer/off-taker (that is, the EEP).

and coordinating additional government support, including facilitating access to project sites. The Board is chaired by the Minister of Finance.

**Figure 4.1 PPP framework and project phases**



Source: Authors' own, based on Beyene (2019) and Ministry of Finance and PPP-DGU (2019).

**PPP Directorate General Unit (PPP-DGU):** Based in, staffed and funded by the Ministry of Finance, the PPP-DGU serves as secretariat to the PPP Board, providing technical assistance and support on all matters relating to PPP projects. It is responsible for selecting and procuring projects, through transparent and competitive auction-based bidding procedures. It implements procedures related to project preparation, procurement, bid documents and project agreements. It also monitors and evaluates progress of PPP project implementation. Moreover, the PPP policy (Ministry of Finance and Economic Cooperation 2017: 13) and the PPP Proclamation (Article 12) stipulate transfer of some conventional roles and responsibilities held by participating public organisations such as the EEP to the PPP-DGU. (As we explain below, the application of this policy has been a major source of friction between the PPP-DGU and EEP.)

**Contracting authority (Ethiopian Electric Power – EEP):** Under the PPP framework, EEP is the contracting authority for electricity generation. It initiates PPP projects, supports the PPP-DGU in the procurement process, signs agreements, and follows up on the implementation of the projects it



administers.<sup>18</sup> To fulfil its mandate, by law, EEP is required to form a project management team (or teams).

**Project management teams:** Within the contracting authority, project management teams play an important role in PPP projects. They undertake tasks mandated to EEP.

**PPP project development phases (Figure 4.1 – bottom section):** Prior to an in-depth feasibility study, a project identified for a PPP should first be approved by the Ministry of Finance. If approved, EEP undertakes a feasibility study, considering criteria such as technical and legal issues, and value for money, and a proposal will be submitted to the PPP-DGU for consideration by the Board. A project that receives the Board's approval passes to the open bidding/tendering process<sup>19</sup> – that is, tender documents and contracts will be developed. The bidding process itself goes through two steps. The first is the request for qualification (RfQ), where calls will be made through widely circulated publications (newspapers, websites of EEP, IFC, etc.) encouraging potential suppliers to come forward to express interest. From the PPP-DGU's perspective, the aim is to identify bidders with a track record of successful projects. The second step is the request for proposals (RfP), when bidders that meet the technical, financial and other criteria through the RfQ process will be requested to submit proposals. (As we explain below, most of the challenges in procuring electricity from IPPs are experienced during the processes of preparing bid documents, selecting qualified bidders, and subsequently evaluating and awarding bids.)

**Project Company:** Any bid-winning company is required by Ethiopian law to set up a subsidiary company to implement the project for the duration of the Power Purchase Agreement (PPA) period. EEP and PPP-DGU undertake contract management and performance reporting (Phase 5, Figure 4.1).

Our research participants (interviewees and consultation workshop participants) hailed the PPP framework as 'timely' and a 'significant step' to engage the private sector in electricity generation from renewables. Interaction with research participants generated robust data on the opportunities and challenges associated with procuring renewable energy from private suppliers, as summarised below.

- **Opportunities include:** growing demand for electricity, fuelled by Ethiopia's fast-growing economy and population; low

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<sup>18</sup> According to Article 15.1, the contracting authority or PPP-DGU also identifies projects.

<sup>19</sup> There are, however, circumstances where procurement could be through 'Direct Negotiations' (Proclamation 1076/2018: Article 39). Approved by the Board, the PPP-DGU may engage with private suppliers where there is an urgent need for the provision of the said service, or where the project is of a short-term nature and its anticipated investment does not exceed the amount to be specified by the directive or where the investment relates to national defence, national security, etc.



level of use and coverage rate of electricity; export potential; technological innovations and falling cost, etc.

- **Risks include:** forex availability and convertibility; creditworthiness of the off-taker; access to and security of project site, etc.
- **Merits and demerits of IPPs in solar, wind and geothermal sectors:** reliability of supply; investment needs; potential tariff rates; duration of contracts, etc.
- **IPP governance issues:** overlapping roles and responsibilities, notably between PPP–DGU and EEP; limited consultation over allocation of roles and responsibilities; capacity gaps (notably in law, finances and environmental and social evaluation projects).

Workshop participants and interviewees perceived that in terms of policy, there are either no gaps (or 'little' gaps), and that the challenges are mostly with implementation.

## 4.2 Renewables IPP project auctions and approval processes

Since the PPP framework came into effect in 2018, major progress has been made. The Board has approved 23 projects, 19 of which are in the energy sector – 8 solar PVs, 5 wind and 6 hydro projects. Moreover, eight utility-scale solar PV projects have passed the feasibility study stage and received initial approval by the Board.

Two rounds of open and competitive tenders have also been launched to procure 1,000MW electricity from eight projects. The first tender process was launched in October 2018 for two solar PV projects, each for 125MW, in the regions of Afar and Somali. The bidding process involved around 100 private companies who expressed interest, of which 28 submitted bids under the RfQ. Of those, 12 investors pre-qualified to submit a proposal. The subsequent bidding process (RfP) led to the signing of a PPA with the Saudi Arabian company ACWA Power in December 2019. In May 2019, EEP also announced its Scaling Solar Round 2 for 750MW from six solar projects<sup>20</sup> (see Baker *et al.* 2021b).

In addition, three PPAs were signed with private suppliers who entered the Ethiopian energy market preceding the PPP framework. Since 2013, EEP has been undertaking PPP projects, on a negotiation basis, three of which led to the signing of PPAs: 100MW of solar PV generation project

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20 Weranso, Welenchiti, Humera and Mekele, as well as the newly added sites in Metema/Bahir Dar and Hurso.

in Metehara; and two geothermal projects – Corbetti (up to 520MW of generating capacity) and Tulu Moye (another 520MW) (MoWIE 2019).

### 4.3 Ongoing renewables IPP projects

As already noted, to date PPAs have been signed with five non-hydro renewable energy IPPs with total capacity of 650MW (see Table 4.1 and Figure 4.2), but none of them have become operational. Details are as follows.

**The Gad and Dicheto solar PV projects** (see above) have the greatest potential for solar energy production in the country. ACWA has proposed the most attractive selling rate at US\$0.02526 per kW/h, one of the lowest tariffs on the continent. ACWA Power won a 25-year contract, with total investment in both projects at US\$180m.

**Metehara project:** This project was developed as the first utility-scale solar PV plant, with 100MW installed capacity in Oromia region (see Table 4.1). The tendering process was launched by EEP in May 2016, and among five shortlisted consortiums, the Italian energy company Enel's renewable energy subsidiary Enel Green Power (EGP) was selected in 2017 as the preferred bidder. This US\$120m project is scheduled to generate approximately 280 gigawatt hours (GWh) per year and to sell electricity to EEP under a 20-year PPA. The development of the project has been assisted by the United States Agency for International Development (USAID) Power Africa programme and the World Bank.

## Table 4.1 Non-hydro renewable energy IPPs under implementation in Ethiopia (as at 2021)

Project (energy source & region)	Capacity	Awarded project developer	Cost (US\$ mil.)	Tariff (US\$ in KW/h)	Project tenure
Metehara (solar, Oromia)	100MW	Enel Green Power & Orchid Business Group	120	n/a	20
Tulu Moye (Geothermal, Oromia)	150MW (50+100)	Consortium led by Meridiam & Reykjavik Geothermal	270	0.0695	25
Corbetti (Geothermal, Oromia)	150MW (50+100)	Consortium led by Berkeley Energy & Reykjavik Geothermal	n/a	0.0753	25
Gad (solar, Somali)	125MW	ACWA Power	90	0.02526	25
Dicheto (solar, Afar)	125MW	ACWA Power	90	0.02526	25

Source: Authors' compilation (based on information from project developers and government and donors' websites).

**Tulu Moye:** This is a joint venture between Meridiam and Reykjavik Geothermal, which is now working on the first phase 50MW (of 150MW) generation (it began as a 520MW project, but has been scaled down). The company signed the PPA and the Implementation Agreement with EEP in December 2017 and restarted documentation in March 2019. The project is located about 100km south-east of Addis Ababa, in Oromia region. The project company – Tulu Moye Geothermal (TMGO) – has entrusted the work to Kenya Electricity Generating Company (KenGen), which will drill around ten production wells and two injection wells at a cost of US\$800m. TMGO plans to commission the first phase in 2023 and the second phase in 2025. The company agreed to sell electric power for US\$6.95 cents/kWh for the Ethiopian national grid.

**Figure 4.2 Project sites for renewable energy IPPs in Ethiopia**



Source: GISGeography (2021).

**Corbetti** is the pioneer geothermal project that has a long history, as Reykjavik Geothermal signed a framework agreement with the then Ethiopian Electric Power Corporation in October 2013. Since then, the project has made some progress and experienced some challenges, together with its twin project Tulu Moye, including downscaling capacity from 520MW to 150MW, to be implemented in two phases (50MW + 100MW). Its sponsors – InfraCo Africa (a Private Infrastructure Development Group company), Berkeley Energy (which manages the Africa Renewable Energy Fund), Iceland Drilling and Reykjavik Geothermal – also re-signed the PPA and Implementation Agreement with EEP in March 2020. The company agreed to sell electric power for US\$7.53 cents/kWh for the Ethiopian national grid. The first phase of a 50MW power plant is expected to become operational in 2024.

## 4.4 Renewables IPP governance and project implementation challenges

The main challenges of the renewable energy IPPs in practice are related to the governance framework, which is reflected through institutional tensions, governance fragmentation and limited capability. Moreover, research participants cited competition and transparency issues arising from unsolicited projects, as well as the undue influence of transaction advisors, as key factors. These elements are discussed in more detail below.

### 4.4.1 Ambitious number and size of IPP projects

A significant number of respondents commented that the number and size (as well as the sequencing) of IPP projects prepared and floated for tender was too ambitious. They underlined that, for a country with no experience of any successfully implemented IPP projects, and limited implementation capacity, floating a substantial pipeline of projects (eight) in two successive tenders was unwise. Interviewees noted that, before jumping into tendering, lessons should have been learnt from Ethiopia's own pre-PPP experience – i.e., from geothermal energy IPP projects that have been ongoing since 2013 (Transition Advisor, 28 November 2019). Respondents also suggested that electricity generation targets at project level and in national plans were 'too ambitious'.

We explored possible drivers of ambitious targets with respondents. Some said that setting high targets is a 'perennial problem' in Ethiopia – very much embedded in the 'top-down developmental state' growth and transformation plans (GTPs) (see section 6). They said many of the energy targets in the two successive GTPs were unmet. The key message coming from our respondents was that 'unrealistic' targets have been generating 'false hopes'. Instead, they suggested focusing on one or two exemplar projects and implementing them effectively, demonstrating that IPPs can actually generate and supply electricity. They noted that this will reduce the complex issues of real and perceived risks related to currency convertibility, debt servicing and land access (see below).

### 4.4.2 Institutional tensions

Our in-depth interviews and consultation with stakeholders revealed institutional and professional tensions, notably between the PPP-DGU and EEP, due to overlapping roles and responsibilities between the agencies. With some difference in emphasis, both the PPP-DGU and EEP are tasked with identifying and evaluating the suitability of IPP projects; both are involved in the design and implementation of IPP tender documents, and

(re)negotiations with winning parties.<sup>21</sup> To discharge its duties given by law, the PPP-DGU started by developing capacity (recruiting staff, etc.) from scratch. Many of our interviewees, notably those from EEP,<sup>22</sup> strongly resent this overlap of roles and responsibilities, which wastes time and resources:

... when the PPP framework came to effect [in 2018], we at EEP thought it would build on our ongoing experience with IPPs. But PPP-DGU started by building capacity at the Ministry of Finance. The DGU has no experience in the energy sector (nor in any PPP relevant sectors)... Now what happened was EEP's roles and responsibilities were carved out and given to PPP-DGU. I see this as interfering with EEP's business – our roles and responsibilities. PPP-DGU's dominance in this procurement process makes EEP disempowered.

(EEP 2, 25 November 2019)

The effect of these overlaps has meant that project development and management capacity for PPPs has to be developed in two sites. One official called this 'absurd', as it duplicates effort and adds to bureaucracy, which (according to some interviewees) opens up opportunities for misinterpretation and potentially adverse effects on public interest:

To effectively engage a private supplier, one needs to be a tough negotiator... compared to us [EEP or PPP-DGU], the industry is very experienced and resourceful, it knows the strengths and weaknesses of our decision makers. [Even] compared to us, the industry can secure better access to our high-level decision makers, they use diplomatic routes, donors and funders. Unfortunately, our political decision makers know little about IPPs and, often out of goodwill, make quick decisions that could potentially be detrimental to the public interest.

(EEP 1, 25 November 2019)

Yet, the PPP-DGU seems to justify its actions as part of the process of building the larger national development project:

... Ministry of Finance and PPP-DGU build capacity to coordinate, not only IPPs, but all PPP projects across relevant sectors... Besides, EEP has not been creditworthy, we [MOF and PPP-DGU] give guarantees to suppliers to make it a credible and reliable off-taker.

(Ministry of Finance 1, 25 November 2019)

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21 See Proclamation 1076/2018 – Articles 13; 12 (5), 15 (1).

22 PPP-DGU interviewees also complained about the tension, identifying its source as 'lack of clarity of roles and responsibilities'.

But some EEP officials do not accept this argument. For them, 'giving a guarantee is about managing macroeconomics' and the PPP-DGU 'should leave all technical matters' to them.

Ironically, and despite the posturing, the PPP-DGU relies heavily on EEP technical expertise to discharge 'its' roles and responsibilities. But the consequences of the institutional and professional tensions over staff and their performance were very clear; these have, as we heard repeatedly from EEP officials, created deep feelings of being 'disempowered' and/or 'demotivated', weakening individual and institutional abilities to take 'own initiatives' to address what might be referred to as 'trivial matters' without the direction and approval of the PPP-DGU. According to many of our research participants, this seemingly intractable problem simply prolongs the bureaucracy of decision-making processes. Respondents noted that, despite the contestations, EEP and the PPP-DGU work together, although not in sync. This appears out of necessity – the former wields to the 'positional' power of the Ministry of Finance (and the PPP-DGU) as it has been empowered by the Federal Government of Ethiopia 'to design the Public Private Partnership programme to realize the government's partnership with the private sector' (Ministry of Finance and Economic Cooperation 2017). The Ministry of Finance also commands power over the allocation of the recurrent and capital budget that EEP depends on to develop PPP projects.

#### **4.4.3 Weak and fragmented renewable energy IPP governance**

Respondents noted that overall, the governance of the electricity sector is fragmented and lacks coherence. Although by law, IPP project developers are required to follow PPP directives and start with the PPP-DGU or EEP as their entry point, many (particularly unsolicited proposal (USP) promoters – see below) find themselves caught between several agencies. Some start with EEP or MoWIE or even regional governments, as the policies and guidelines of these agencies command power over access to resources – for example, the Ministry of Finance on ensuring debt repayment guarantees, and regional governments on access to project sites.

Interviewees also noted issues around representation of and participation in PPP Board meetings, and awareness levels among Board members (some of whom did not attend meetings regularly). Of the seven ministers and two private sector actors, there is no representation from regional governments to bring multiple perspectives to the decision-making process. Regional governments in particular command power over access to project sites, but the fact that their will and cooperation is not captured at the point of the Board's decisions means possible delays in availing project sites to investors (as happened in the case of ACWA and Metehara projects).



Those close to the Board also admitted the 'high turnover rate' of officials, which makes it difficult to engage all members on the matters at hand. Many senior interviewees also said that Board members 'lack knowledge and understanding' of IPPs (and PPPs in general), suggesting that some members treat PPPs as 'magic bullets' and/or engineering, procurement and construction (EPC) projects. Some respondents also raised accountability issues for Board decisions:

The Board makes collective decisions, but some members hardly know the technical aspects of the project under consideration or have the responsibility over the institution from which the projects emerge. There is no clear accountability mechanism for the decisions they take either. (MoWIE 1, 25 November 2019)

Some technical interviewees also noted cases of 'political interference in identifying project sites'. For example, while the technical teams focus on grid connection, radiation/global horizon and environmental assessments, in some instances, political decisions are taken, especially if the proposed project would benefit opponents, the effect of which (according to interviewees) was to add 'more risk to the investors or higher tariffs to pay'.

#### 4.4.4 Inadequacy of institutional and human capacity

Similar to many sub-Saharan African countries, the Ethiopian power sector is characterised by lack of functional and competent institutions, which creates structural barriers to achieving universal electricity access and the development of renewable energy in the country (AfDB 2013; KfW Development Bank, GIZ and IRENA 2021).

The design of an institutional structure is indicative of the policy priorities of the government. The current structure of MoWIE has been designed to reflect the importance of hydropower and the electrification programme, which are organised respectively under a dedicated Directorate of Hydropower Design and Study, and Directorate of Electrification (see Table 4.2). With the growing penetration of non-conventional renewable energy technologies, including wind and solar, a dedicated department that coordinates activities related to the development of renewables could be foreseen within MoWIE. According to respondents from MoWIE, EEA, EEP and EEU, activities related to the promotion and integration of renewables are shared among different departments (Table 4.2). This shared responsibility, or lack of clarity, on the mandates of each department for development of renewables could be a source of inefficiency, due to duplication of effort, high transaction costs and lack of accountability. Moreover, from a private investor's



perspective, having a dedicated department or agency overlooking the development of renewable energy could make it easier to do business.

## Table 4.2 Departments involved in renewable energy activities

Institution	Departments involved
Ministry of Water, Irrigation and Energy (MoWIE)	<ul style="list-style-type: none"> <li>– The Directorate of Energy Policy, Strategy and Information</li> <li>– The Directorate of Hydropower Design and Study</li> <li>– The Directorate of Electrification</li> <li>– The Directorate of Research and Development (the Energy R&amp;D wing)</li> </ul>
Ethiopian Electric Power (EEP)	<ul style="list-style-type: none"> <li>– Engineering</li> <li>– Corporate planning</li> <li>– Generation construction</li> <li>– Generation operation</li> </ul>
Public-Private Partnership (PPP)	<ul style="list-style-type: none"> <li>– PPP Capacity Building and Knowledge Management Directorate</li> <li>– Framework Management and Contract Support Directorate</li> <li>– PPP Project Development and Monitoring Directorate</li> </ul>
Ethiopian Electric Utility (EEU)	<ul style="list-style-type: none"> <li>– Universal electricity access programme</li> </ul>
Ethiopian Energy Authority (EEA)	<ul style="list-style-type: none"> <li>– Energy, Research &amp; Development, Measurement, Verification &amp; Laboratory Test Directorate</li> <li>– Competency Certification &amp; Technical Regulation Directorate</li> <li>– Licensing &amp; Economic Regulation Directorate</li> <li>– Geothermal Resource Development &amp; Licensing Directorate</li> <li>– Competency Certification &amp; Technical Regulation Directorate</li> </ul>

Source: Authors' own, based on information from respondents.

All respondents indicated that the departments involved in the promotion and integration of renewable energy are not adequately staffed to implement the policies and programmes that have been introduced in the country to increase uptake of renewable energy.

In general, it is evident that the capacity needs of the five institutions were in renewable energy project development and management.

Interviewees' views of the causes of capacity gaps varied. A senior EEP interviewee acknowledged capacity gaps, while interviewees

from the PPP-DGU strongly noted lack of staff with expertise in international finance and law, and in preparing IPP project bid documentation. However, EEP interviewees, consultants and transaction advisors for renewable energy IPP projects all noted that shortage of expertise within the PPP-DGU was arguably exacerbated by the system's 'inability to capitalise and build on expertise at EEP':

... the main reason for the capacity gap is lack of preparedness to handle matters at implementation stage – the policy was put in place, but we rushed into implementing it, with limited capacity to identify feasible projects, prepare tender documents, evaluate them, negotiate, etc. In fact, on tendering and evaluating tenders, we have become dependent on the investors themselves and advisors... We were supposed to be reviewing and correcting bidders' documents but what has happened was we were guided by the investors or their proxies on how to go about it... based on a small number of projects, we should have had time to learn how to develop and manage IPP projects. [Yes]... the process maybe frustrating and may not be acceptable to investors, but still we are trying to be careful so that we don't make irreversible mistakes.  
(EEP 1, 25 November 2019)

Moreover, many respondents (including from EEA) underlined limited capacity to effectively discharge their roles and responsibilities. In particular, it was noted that EEA lacks independence; because it depends on government for funding, its major decisions (such as on tariffs) are influenced by the government's political agenda and priorities.

To meet these capacity-building needs, EEA and MoWIE respondents agreed that academic training should be prioritised, followed by continuing education, vocational training in specialised centres, workshops and seminars, and e-learning. In contrast, EEU considers that its staff need short-term skill upgrading training in different expertise areas and on-the-job training through participation at project sites. Similar views were reflected by the PPP-DGU, which ranked on-the-job training as the second most suitable capacity-building approach, after workshops and seminars. EEP prioritises vocational training in specialised centres followed by continuous education, and workshops and seminars.

All institutions considered periodic training, together with workshops, as important for efficient capacity-building. In addition, EEA and MoWIE consider that reviewing regulatory and legal texts related to the energy sector should be integrated in the design of capacity-building programmes. Respondents held reservations about

e-learning, due to problems with internet connectivity and the practical nature of many aspects of training in the power sector.

#### 4.4.5 Unsolicited proposals and fair competition and transparency concerns

While a PPP project service is generally procured in response to a request or solicitation issued by the contracting authority (e.g. EEP), there is a legal provision<sup>23</sup> under which unsolicited proposals (USPs) are submitted by 'voluntary' promoters for consideration. Such USPs need to be 'unique' and/or 'innovative' and be in the 'national interest' to be considered for a PPP. Should a USP meet the criteria, after recovering the promoter's cost of project development, the PPP-DGU may allow such projects to be subjected to open competition.

We found that a significant number of USPs were reaching EEP. While on the face of it, increased interest in private procurement of renewable energy was most welcome, respondents revealed some serious concerns about the quality and manner in which these projects were presented to EEP. They also raised issues that pose challenges to EEP as an off-taker – potentially breaching transparency and fair competition rules. According to the interviewees, many USPs were 'poorly prepared' or did not have any unique 'intellectual property-related issue' or any 'national significance'; they were simply projects promoted by private suppliers. A senior EEP interviewee went on to say:

*Bearing in mind the dual roles of EEP as a producer and an off-taker, if we accept a proposal for which we don't have the absorption capacity, then we end up paying the costs. Our decision on whether to accept a USP thus depends on a number of factors, such as tariff rate, our absorption capacity, access to grid and transmission arrangements. As a developer, if we think we have enough feasible projects ourselves, EEP can reject USPs... in which case you may say our off-taker position is contestable.  
(EEP 1, 25 November 2019)*

Moreover, in a bid to secure acceptance by the PPP-DGU, and the Board, USP promoters appear to vigorously mobilise support from federal and regional-level officials to liaise with EEP staff about their proposals, and request review and feedback:

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23 See Proclamation No. 1076, 2018, Chapter Nine.

Many USP promoters, instead of directly submitting proposals to EEP, start with the Ministry or regional government offices or any official that they think will back them up... They come with letters of support by higher regional/federal governments officials<sup>24</sup> to secure cooperation from us [EEP]... but these 'facilitations' put pressure on us whether to follow 'orders' or subject each proposal to due process as and when it arrives. The other problem here is the entire process lacks transparency as none of these influences or requests for support are openly available to all participants. (Participant in EEP/project management team group discussion, 25 November 2019)

It is worth noting here that almost all respondents were quick to point out that such official endorsements were 'generally in good faith' and were meant to 'address high demand for electricity in relation to supply', although some staff observed that the emerging practices might infringe on fair competition, transparency and value for money.

More EEP interviewees noted that USPs 'land' on their desks formally or through informal routes for 'comments' in order to make the proposals 'compelling' or secure a 'buy-in' from the experts and EEP. They said their internal system is 'overwhelmed' by these proposals. A group of EEP technical team members we spoke with also noted the 'fear' of making mistakes that grips them as they analyse USPs – i.e. they don't want to end up making less feasible but politically supported projects. Lastly, many USPs tend to be too small even to justify the cost of processing, hence the PPP-DGU has already introduced a minimum target of US\$50m for projects to make it worth the effort. More guidelines need to be developed on how to evaluate or restrict the number of USPs.

#### 4.4.6 Undue influence of donors and transaction advisors

IPP-led renewable project development has been supported by donors, notably by the Scaling Solar programme of the IFC, the private sector lending arm of the World Bank Group.<sup>25</sup> One of the key support areas was assigning IFC transaction advisors to support project preparation in areas such as: technical and economic analysis; site identification; bid preparation and tender processes (including RfQ, RfP, proposal review and award); and finalising financial and final project approval, loan agreements and insurance. Another area of support has been the development of investment guarantee schemes. However, concerns were raised over the (implicit) influence of some transaction advisors and donors. Some were

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24 Including one seen by the researchers for this study.

25 See **Scaling Solar, Ethiopia**.

said to be 'pushing' and/or 'lobbying senior decision makers' towards a particular outcome or one that Ministry of Finance officials considered to undermine the public interest. Referring to the first-round tender process that led to awards to ACWA, interviewees noted bias on the part of consultants and advisors towards a particular technology from particular sources:

Some [international] advisors were pressuring us [Ministry of Finance staff] to provide forex guarantees to potential winners... We felt that they were siding with the private sector rather than the public sector and we were convinced that their recommendation was not in our best interest, hence we stood up to the pressure. Some of the advisors withheld their technical support and they took the matter to the Board and accused [the Ministry of Finance DGU team] of giving 'wrong' advice... It sounded as if, unless we heeded to their recommendation, they wanted the whole bidding process to fall apart. Despite withholding their technical support, the PPP-DGU drew on EEP experts and recommended the award to ACWA. (PPP-DGU/Ministry of Finance 3, 25 November 2019)

With regards to donor influence, all interviewees acknowledged the wide-ranging support they have received, including financial support to undertake studies, hold events, or pay for consultants and transaction advisors.

## 5. Renewable energy developers' responses to PPP policy, institutions, and governance

This section addresses how renewable energy IPP project developers (investors) have responded to IPP policy and governance, focusing on their interactions with federal and regional-level officials, donors or development finance institutions, highlighting project risks they identified.

### 5.1 Summary of industry responses to renewable energy IPP policy and governance

Particularly since 2013, an increasing number of private entities have been drawn into Ethiopia's renewable energy sector. Among equity investors, there are specialised technology providers (Reykjavik Geothermal), asset management companies (Meridiam), multilateral energy corporations (Enel, Engie and ACWA), and regional/local infrastructure developers (Orchid Business Group<sup>26</sup> and KenGen). Renewable energy developers and financiers we spoke with underlined that their attraction to Ethiopia was based on a range of factors that include untapped resources and unmet demand, a growing economy with high demand for electricity, strong government policy backed up by ambitious targets and a range of incentives. One former renewable energy company manager noted:

Ethiopia is the power hub not only of Eastern Africa, but the whole of Africa. So, there is a huge resource potential, and there is also a huge demand. And access to electricity is very low. The population size is more than 110 million... which makes it the biggest market in terms of market opportunity. (Private developer 4, April 2021)

Another project company manager noted:

We know PPP is in its infancy when it comes to Ethiopia. [Still] the energy liberalisation modality it has taken and the international competitive nature of the IPP are the reasons for our company to engage in the Ethiopian market. (Private developer 1, April 2021)

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26 The only Ethiopian company involved in any IPPs and here it is a junior partner of Enel.

Beside project developers and equity investors, tenders on renewable energy IPPs also attracted EPC contractors and debt financiers worldwide. Likewise, a large number of service and consultancy companies entered the Ethiopian energy market to provide various advisory services on the engineering, legal, and financial aspects of IPPs for both the public and private sectors. As a result, a growing and dynamic business community is now taking shape in Ethiopia. These actors are serving not only as the 'prime movers' of the industry, but also crucial knowledge-brokers to nurture the expertise necessary for the long-term development of renewable energy IPPs:

I believe that opening up the sector to the private developers will give relief for the government, and then also it will get the opportunity for the private investors to do this kind of business in such untapped markets, because the opportunity is big enough, but the government by itself cannot do everything at the moment.

(Private developer 3, April 2021)

## 5.2 Engaging with federal-level government agencies

Many industry respondents were cognisant of the fact that the industry is nascent in Ethiopia and faces many challenges, mindful that, alongside the government, they also have a vested interest in its development:

Look, we're developing a new sector here together, it is a new thing for Ethiopia, so their [government] success is our success and our success is their success.

(Private developer 2, April 2020)

As also noted in the literature (Warsen *et al.* 2018), underlining any PPP arrangement is a trust-based relationship between public and private entities to jointly develop the sector. The establishment of the PPP-DGU was intended to streamline the decision-making processes on IPP projects, yet the institutional reforms have further complicated relations within different government entities and units. Respondents noted that, owing to frequent staff turnover, they regularly have to deal with new and less experienced personnel, prolonging the business deals at hand. Some respondents also commented that, while top decision makers appear to be driving the energy liberalisation agenda, middle- and junior-level bureaucrats were rather slow and do not seem to have embraced that agenda. Many respondents noted 'little' or 'no' change in the 'mindset' towards a liberalised energy sector among lower-level staff. Thus, many industry

actors have to navigate a highly supportive environment (mostly at senior level) and a not-so-supportive environment (at middle and lower levels). Some company leaders noted the need to 'think long term' and be 'flexible' as they operate in what is sometimes an 'unclear' policy environment.

Our data suggests that the companies that have a better appreciation of the complex realities on the ground are those that have made serious commitments to develop projects, despite all the difficulties and uncertainties involved. We found many examples where perseverance led to positive outcomes. One example is the downscaling of the Corbetti and Tulu Moye geothermal IPP projects from 520MW to 150MW. Both developers (and, subsequently, government officials too) noted that the original targets were driven by a strong political aspiration, but with little realism brought to the negotiations.

In the main, project developers clearly appreciated the government's ambitions and aspirations, but some (such as TMGO) brought to their attention the financial as well as technical risks with such large projects, and managed to persuade the authorities to downscale them. According to respondents, this 'helped them to de-risk' the projects and put them on a more 'realistic and attainable path':

I think just to try and sit them [government officials] down so that private companies can challenge and ask the questions can be a progress... Here we made the case, we said let's walk before we can run. And I think that would be helpful, as it proved in our case, for the whole PPP pipeline that the Ministry of Finance in Ethiopia has and wants to deliver.  
(Private developer 2, April 2021)

### 5.3 Engaging with local actors

Beyond federal-level actors, our interviews revealed two major areas of weakness in actor engagements: the PPP policy does not provide enough support to the domestic private sector; and regional and local-level government actors are peripheral to the energy-related decision-making process. The overwhelming majority of respondents noted that the Ethiopian private sector is too weak to participate in or partner with international IPPs. They noted that there is only one junior partner at Enel Green Power<sup>27</sup> (Metehara 100MW solar PV), and that the PPP policy is not 'bold enough' to develop the sector. That said, the guidelines (Ministry of Finance 2019: 24–26) appear to have developed some instruments that favour local businesses, where 'a margin of up to 7 per cent of bonus may be allocated

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27 See **Enel Green Power – Ethiopia**.



to the financial proposal [of RfP] provided by the bidders when the capital share of the domestic party is more than 50 per cent and the following conditions are fulfilled: (a) for a project involving a construction phase, if at least 30 per cent of the raw materials used are from Ethiopia and 50 per cent of the employees are Ethiopians; and (b) when 50 per cent of Ethiopians are involved in the project/company management’.

As noted in section 4, the need to nurture the domestic private sector becomes important in the face of mounting challenges in attracting international suppliers. In the medium term and long term, a viable domestic private sector could mitigate (for example) the forex supply and currency convertibility issues (Ayele, Shen and Worako 2021).

Some respondents noted the limited engagement of regional and local-level government actors in the energy sector decision-making processes: according to the Constitution, land is owned by the state and regional governments have the duty to administer land and other natural resources. Renewable energy IPPs, solicited and unsolicited, are initiated in a top-down manner, with central government agencies (particularly EEP) taking the lead, but little or no involvement of regional and sub-regional authorities (*woredas*<sup>28</sup> in particular) in the formal decision-making processes on project selection and preparation. Such a top-down approach may be deemed to be efficient, yet it could lead to tensions and contestations for IPP project developers, who often directly engage with local officials and communities. We found that, owing to such limitations, the Metehara PV project site had to be relocated more than once as the local *woreda* administration was said to have allocated the piece of land originally allotted to the project to another ‘development project’. Subsequently, there were delays in the environmental and social impact assessment (ESIA) on the basis that the proposed project site was also found to be in conflict with a local irrigation programme. It took another year for EEP to address these challenges.

That said, some companies invest in community-based development projects alongside their renewable energy IPP and create so-called ‘social license’ (Vanclay and Hanna 2019) beneficial to both the company and the local community. TMGO, for example, established a dedicated community liaison unit led by local staff with dedicated budget to support community development initiatives such as water and road access. The company spent approximately US\$500,000 (less than 1 per cent of its initial investment) to support local communities:

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28 A *woreda* is made up of *kebeles* (the smallest localised administrative unit of Ethiopia) and is roughly equivalent to a district.

We recognise that they [local communities] are going to be our neighbours for 30 years. They very much have a hand in whether the project is a success or a failure.

(Private developer 2, April 2021)

According to that interviewee, the result was highly rewarding. The relationship it had built with the community was critical to sparing TMGO from destruction during civil disturbances and violence in 2020. Interviewees boldly noted that the good relations they had built with the community were a major factor in protecting their investments and site facilities (private developer 2, April 2021).

## 5.4 Engaging with development finance institutions and multilateral/bilateral donors

Renewable energy IPPs depend critically on the intellectual and financial inputs from bilateral and multilateral donors and development finance institutions. For example, USAID's Power Africa programme has been playing a prominent role by providing advisory services for the procurement and development of the Metehara project. The Danish Energy Agency and DANIDA have also been assisting on developing capacities around renewable energy projects' development. Although Tulu Moye and Corbetti geothermal projects are not directly supported by international donors, the Government of Iceland and Japan International Cooperation Agency (JICA) have been supporting the initial drilling activities in Ethiopia under the World Bank's Ethiopia Geothermal Sector Development Project (GSDP).

The World Bank Group in particular plays a major role in the development of renewable energy IPPs in Ethiopia, mainly through its umbrella Renewable Energy Guarantees Programme (REGREP). It has provided a comprehensive package of support, including an overall financial envelope of US\$200m (for equity and debt), (IFC) advisory services as transaction advisor, IDA (International Development Association) guarantees, MIGA's (Multilateral Investment Guarantee Agency) political risk insurance, plus IFC blended finance to potential investors (World Bank 2019a). The ultimate goal is to mobilise over US\$1.5bn in private investment for at least 1GW of solar and wind capacities in Ethiopia by 2025. It should be noted that the IDA payment guarantees are essentially partial guarantees, amounting to US\$10m for the Metehara project (compared to total cost of US\$100m), and to US\$25m for two Scaling Solar projects (compared to total cost of US\$300m) (*ibid.*).

REGREP is essentially designed for the credit enhancement and de-risking of renewable energy IPPs to make them bankable projects.

Meanwhile, extensive capacity-building programmes are designed via a Public–Private Infrastructure Advisory Facility (PPIAF) grant, IDA credits, Global Infrastructure Facility (GIF) and Energy Sector Management Assistance Programme (ESMAP) grants to support EEP and PPP–DGU's due diligence on the transactions, plus IFC advisory and USAID/Power Africa, which provide additional transaction advisory support. Many interviewees expressed concerns about the uncertain prospects of this programme, and were hesitant about participating further in Scaling Solar tenders. Considering that REGREP's main purpose is to boost private sector involvement in the development of the renewable energy sector, the critical task at hand is to restore the confidence of project developers and related entities, mainly by reaching financial close of awarded renewable energy IPPs before the next round of tenders.

## 5.5 Risk perceptions and financial close

Over three years of significant progress has been made in institutional reforms and market development, yet, at the time of writing, neither of the solar PV projects that has gone through the renewable energy IPP tender process has reached financial close. For any IPP or PPP arrangement, the mutually accepted scheme for sharing risk between the public and private entities involved is the foundational basis. However, according to our respondents, profound finance-related risks prevail.

The biggest risk factor relates to **forex availability and convertibility of the birr to international currency**. Interviews reveal that the sticking point is the government's reluctance to provide guarantees for forex availability and convertibility to renewable energy IPP developers and debt financiers. Ethiopia's debt service, though not among the worst in the sub-Saharan Africa region, is certainly a concern, particularly as it recovers from the Covid-19 pandemic. Even before the pandemic, its total debt was close to US\$30bn and its debt service ratio around 29 per cent (in 2019) (World Bank Data 2021).

Project developers and debt financiers are concerned not just about the overall shortage of forex but the extent to which repayments of foreign currency can be prioritised in the convertibility pipeline. Delays in accessing foreign currency are expected to be between 4 and 12 months for essential imports and up to three years for non-essential imports, which differs between banks (Lloyd and Teshome 2018). Our interviews illustrate that the electricity sector traditionally has some advantages in the convertibility hierarchy and the waiting period for foreign currency is generally shorter than projects in other sectors, yet such favourable status is never formally

institutionalised. This imposes enormous uncertainty, particularly for lenders, as the major hurdle for all renewable energy IPPs in reaching financial close.

That said, some local consultancies and legal experts believe that convertibility risks can be overrated among private investors or debt financiers, particularly as they entered the Ethiopian market only recently.

**My bigger question is why IPP is so special? We have investors doing bigger projects all these years without asking for convertibility guarantees from the government.**

**(Legal advisor 1, April 2021)**

In the long term, however, the ultimate solution lies in improving recovery and growth of the export sector. EEP is also expected to increase electricity exports to neighbouring countries like Djibouti, Sudan, and Kenya, as Ethiopian exporting sectors have priority in utilising forex according to current regulations. As discussed earlier, another potential route is to nurture local manufacturing capacity on renewable energy equipment to reduce reliance on imports, particularly for some basic spare parts.

Compared to the forex risks, the off-taker risk of EEP is viewed by private entities and financiers as less significant, mainly because its payment obligations under PPAs are guaranteed by the government.

**Security risk:** Another important risk highlighted by respondents is the deteriorating security situation in Ethiopia, particularly in Tigray, Amhara and Afar, where civil conflict and ethnic-based political tensions have led to armed conflicts that are ravaging the country. This is often conflated with global geopolitics and use of 'soft' power to derail investment flows into Ethiopia unless the conflict is resolved. MIGA's political risk guarantees can be a powerful tool to mitigate security risk, but it is not yet clear whether they are still available to investors and financiers who are not using the World Bank and IFC's financial package, such as Gad and Dicheto solar PV projects. Under the current situation, there can be very few political risk insurers willing to provide political risk guarantees for Ethiopian projects. Even if they do, the premium could be excessive, and therefore impact on the agreed tariff.

That said, many among the business community remain positive:

*As a business, as an investor, if you don't invest in Ethiopia and enter the market now, you'll be crying in ten years' time. If you do enter the Ethiopian market now and invest, you'll be crying for the next ten years.*  
(Private developer 2, April 2021)

In sum, at the time of our interviews, investors remained optimistic, citing Ethiopia's untapped renewable energy resources and demand to grow investment. However, the fault lines described here – most notably forex and security-related risks – have been constraining procurement of electricity from private suppliers.

## 6. Discussion of main findings

The newly established PPP framework has laid a solid foundation for the future development of (non-hydro) renewable energy projects in Ethiopia. Yet, notable challenges remain around target-setting, overlapping roles and functions, capacity deficiencies, and risk to private sector investment. We now discuss each of these in turn, with a view to identifying potential solutions.

### 6.1 Setting achievable targets: meshing top-down and bottom-up approaches

For decades, Ethiopia pursued a top-down developmental state strategy, during which time electricity generation and distribution policies and decisions were 'focused on a centralized, top-down approach' (Gordon 2018; Lavers, Terrefe and Gebresenbet 2021). While regional governments have respective bureaus for Water, Irrigation and Energy Development, the generation and grid-level transmission remain federal government functions. Over recent decades, the generation and distribution of electricity was guided by two successive GTPs that fit this characterisation (NPC 2016). Our fieldwork and secondary data also clearly show that ambitious goals for generation of electricity manifest on at least three levels.

**National goals:** GTP I (2010/11–2014/15) planned to increase Ethiopia's power generation capacity from 2,000MW in 2009/10 to 8,000MW by 2014/15. But only 52 per cent of that target (4,180MW) was reached by 2014/15. GTP II planned to increase generation capacity to a very ambitious 17,341MW (NPC 2016) but by 2020, it had reached only 4,478MW (NPC 2020).

**At project level:** Ethiopian IPPs tend to be larger than those of their neighbours (Gordon 2018). As discussed in section 5, the two geothermal IPP projects started with a target of 520MW each but were eventually downscaled to 150MW. Our evidence suggests the need for a more bottom-up approach, involving regional and local government actors in planning specific project sites and sizes, before and during negotiations with IPP project developers.

**In the pace and sequencing of projects:** Before the Gad and Dicheto sites were sufficiently developed, a second-round tender was floated for six more projects, and many more are in the pipeline. This is without accounting for the large number of unsolicited IPP proposals.

The key question, therefore, is: what drives these ambitious targets? Targets are clearly related to the demand and supply side forces and associated policy narratives. The demand side is fuelled by fast economic growth and population growth, and the government's desire to reach lower middle-income status by 2025. Equally, on the supply side, the policy-focused narrative of Ethiopia being a 'tower of energy' with untapped wind, solar and geothermal resources is also a driver. But does this mean that high targets are achievable? The simple answer, as confirmed by the evidence presented in this study, is 'no'. As Lavers *et al.* (2021: 20) note, officials also appear to 'informally' encourage high target-setting, but are prepared to accept below-target achievements: '... plan for 100% [achievement of the targets] but 60% is good'. Yet overambitious targets, both at national level and at project level, can result from either technical inaccuracies or political motivations. Therefore, there is a need for more prudent modelling that accounts for political influence in planning (Dye 2020; Süsser *et al.* 2021).

Moreover, as this study has shown, the exploitation of resource potentials and market opportunities very much hinges on a variety of conditions, ranging from timely availing of land to securing project finance. The lessons learnt from the Metehara project (section 5) indicate the importance of having an inclusive decision-making process to avoid delays in project implementation. They also show that an ideal project site and size must emerge from a thorough consideration of choices between optimal technical, financial, economic, and political options. If a large number of projects are stuck in the pipeline, the limited institutional and human resources capacity will be further stretched in dealing with multiple and simultaneous negotiations.

## 6.2 IPP governance: balancing institutional roles and coordination

Early-stage institutional reforms may lead to overlaps or even a vacuum in some regulatory functions among newly created units and existing ones. In the case of renewable energy IPPs in Ethiopia, the major problem is the duplication of roles between EEP and the PPP-DGU in evaluating and approving projects. Like many countries in the region, Ethiopia faces a dual challenge of financial constraints and notable technical gaps in supporting such projects. Whereas the publicly funded EEP has relatively less incentive to ensure the financial feasibility of projects, the PPP-DGU (under the supervision of the Ministry of Finance) has limited sectoral expertise in reviewing and approving the technical aspects of the proposals. In this regard, the ideal option (at least in theory) would be for the two entities to jointly review and approve the financial and technical aspects of project proposals. Yet in reality, our investigation revealed that the PPP-DGU has



taken over the decision-making functions of the project proposal process, on both financial and technical aspects, and the ensuing contestations are delaying the whole decision-making process. In this regard, the Ministry of Finance and the PPP-DGU could focus on the macro or cross-sectoral management, such as issues around the provision of sovereign guarantees and prudent budget plans for PPPs across different economic sectors. MoWIE (and utility companies), as the guardian ministry for the electricity sector, could be the appropriate agency to take up procurement design and awarding – a task that is closely linked to broader sectoral reforms and development planning. EEP, as the monopoly utility, needs to focus on project-level negotiations as the sole off-taker. Such an arrangement, supported by clearer roles and responsibilities, would avoid overlapping governance duties among these agencies and would be the most effective way to utilise their respective areas of expertise.

Still, Ethiopia's experience is similar to that of other sub-Saharan African countries, whereby a monopoly power generation and transmission utility may well deter renewable energy IPP projects, such as in South Africa. However, South Africa has a dedicated renewable energy REIPPPP office jointly hosted by the Department of Mineral Resources and Energy, the National Treasury, and the Development Bank of Southern Africa, with sole responsibility for delivering renewable energy IPP projects. EEP, as the sole buyer of electricity, and power generator and transmitter utility in Ethiopia, has a dual role in procuring renewable energy IPP projects, both as a competitor for energy generation and off-taker for power purchase. Such dual roles appear to be affecting EEP's motivation to engage with unsolicited IPP project promoters. In addition, wind, solar, and geothermal projects are relatively new energy sources compared to the hydropower sector that has dominated the energy landscape in Ethiopia for decades. If EEP is to remain as the monopoly power generation and transmission utility, at least in the short term, it would be ideal to establish a more dedicated and specialised unit within it, focusing on the off-taker side of negotiations and documentation under renewable energy IPPs.

Putting utility companies at the centre of developing renewable energy IPPs does not mean that other agencies are less relevant; quite the contrary. The governance institutions should be considered as a multi-level decision-making system wherein different government agencies contribute to the process throughout various stages, based on their respective roles and responsibilities, and expertise. Thus, besides the Ministry of Finance (PPP-DGU), MoWIE, and EEP, the role of other agencies in the decision-making process should also be properly considered, including but not limited to the National Bank of Ethiopia, EEA, and regional and local governments.

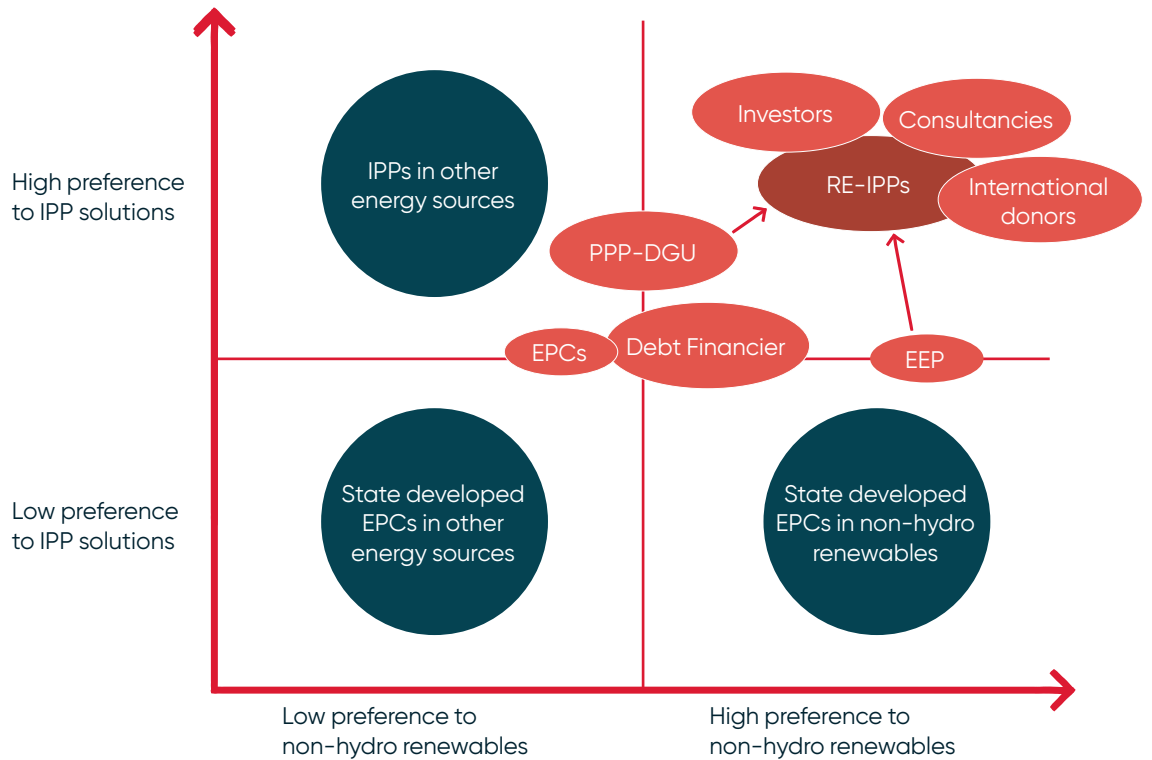


### 6.2.1 Towards a new state–market relationship

Previous studies indicate that a more constructive and symbiotic relationship is needed between key government entities and private sector organisations to develop and maintain an effective and influential policy coalition or network (Rennkamp *et al.* 2017; Shen 2017). It should be noted that any policy coalition promoting policy changes is both value- and interest-driven (Sabatier 1987). In the case of renewable energy IPPs in Ethiopia, international donors and private sector actors are involved in various project development processes (see Figure 6.1), and any coalition should be built around two core belief systems: a commitment to (non-hydro) renewables in Ethiopia's future energy landscape; and a commitment to the role of the private sector in achieving these potentials. However, this study has shown that whereas most of the private sector and multilateral organisations have strong faith in both dimensions (see Figure 6.1), key government agencies have less well-established confidence in either non-hydro renewables or market-based solutions. This issue is particularly acute among managers at the operational level.

Some (particularly middle-level) government officials have been sceptical of the private sector. For decades, except for businesses aligned with the government (often on partisan lines), many businesses have been labelled as 'rent-seekers' (Lavers *et al.* 2021). As illustrated in Figure 6.1, on the one hand, the PPP-DGU as a cross-sectoral agency has strong commitment to IPPs in general, but lacks expertise to drive and support non-hydro renewables. On the other hand, EEP in general aims to promote non-hydro renewable capacities but it is not yet fully convinced of the IPP model. As a result, no leading government agency is keen to develop lasting and cooperative relations with the private sector, to nurture renewable energy IPPs together as the 'niche' market and governance segment. In reality, this misaligned arrangement can lead to hesitation or lack of trust among government officials in engaging and negotiating with private sector actors.

**Figure 6.1 Two core belief systems that sustain policy coalitions around renewable energy IPPs**



Source: Authors' own.

However, developing a constructive state-market relationship requires efforts from both sides. Private sector organisations need to understand and be patient with government officials as the latter try to protect the public interest, while also operating with multiple forms of capacity deficit. Mutual respect and appreciation of resource needs, as well as exchange of knowledge, is critical to a successful policy coalition.

### 6.3 Capacity development

This study has shown that the new electricity generation model from private suppliers faces serious capacity gaps, notably in the areas of international law and finance, debt management, tender preparation, and documentation. Underpinning the gaps are shortages of suitably skilled personnel, poorly designed capacity-building programmes, and lack of retention of qualified staff.

This study has also revealed that during previous capacity-building programmes, training largely involved staff who were not involved in

renewable energy IPP projects. This is often because officials view wind, solar, and geothermal sectors as peripheral energy sources. Having a dedicated team working on non-hydro renewable energy sources would enhance the status of non-hydro sectors and help transform mid-level and junior officers' perceptions of their future roles in Ethiopia's energy mix.

A dedicated team of expertise on non-hydro electricity should be developed, through recruiting new staff and retraining existing staff, reorienting capacity-building programmes to renewable energy IPPs, and filling gaps in training facilities and logistics. Finally, retention of trained experts is another key challenge facing these institutions. Staff turnover should be minimised by creating career structures and promotion opportunities within the relevant agencies.

### **6.3.1 Demonstrate an exemplar project**

Last but not least is the importance of learning by doing. It should be made clear that capacity-building in itself cannot replace the learning-by-doing process needed during the deep and rapid transition from government-led development of IPPs, no matter how well these programmes are designed and implemented. Lessons and experiences should be carefully studied, recorded and shared within and between different units and project negotiation and implementation teams to accelerate the learning curve. Capacity gaps should not be used as an excuse to halt or postpone negotiations and deals. Officials should be given some breathing space for possible miscalculation and even mistakes, particularly for the first few transactions, as part of the learning journey.

## **6.4 Risk management**

Besides governance flaws and capacity gaps, the most immediate challenge in implementing renewable energy IPPs in Ethiopia is the risk that they will be put on hold, for reasons that include the shortage and convertibility of foreign currency, and security risks. Project developers and financiers are concerned about the actual availability and convertibility of the foreign currency to repay the loans, even though the current Investment Proclamation (No. 1180/2020) clearly confirms that foreign investors have the right to repatriate all their profits and dividends abroad, to repay external loans and for other purposes (Federal Democratic Republic of Ethiopia 2020). The other related concern is uncertainty regarding the actual duration of the waiting period for renewable energy IPPs to expatriate the profits they make. If the waiting period remains unpredictable, then it is even more difficult to seek protection from currency-hedging arrangements in the financial markets, as there is no way to determine the cut-off date

for these costly currency swaps. A government policy that clarifies and reduces anxiety among investors and financiers would help. For example, there should be a maximum waiting period for each IPP's request for foreign currency, plus a confirmation of non-differential treatment between state-owned enterprises and IPPs in securing forex. These moves would dissipate fears about being treated detrimentally among foreign investors.

Forex earned through EEP's electricity exports could be utilised as an additional layer of security for the convertibility risks. According to the recent directive from the National Bank of Ethiopia, 31.5 per cent of total foreign currency inflow can be retained by exporters (NBE 2021) and EEP is generating an average of US\$70m annually (EEP 2021), which means that over US\$21m is available each year. In theory, some of these funds could be escrowed to a dedicated account for all implemented IPPs in case of any foreign currency loss incurred beyond the expected waiting period. Such an approach would certainly be subject to approval by the National Bank of Ethiopia and the Ministry of Finance. The World Bank and IFC could also provide back-up funding to further strengthen the escrow account arrangement. Finally, Ethiopia ratified the 1958 Convention on the Recognition and Enforcement of Foreign Arbitral Awards (New York Convention) on 24 August 2020, which helps to increase its attractiveness for foreign investment. Currently, Ethiopia applies the New York Convention only to commercial disputes (contractual and non-contractual) on any signatory country, therefore any arbitration involving government entities requires a waiver of sovereign immunity in advance, which is not yet a standard clause under renewable energy IPPs but needs to be acquired on a case-by-case basis.

As for security risk to investors, the World Bank's MIGA provides political risk insurance (PRI) that includes War and Civil Disturbance coverage for Scaling Solar projects, which covers both loss from tangible assets and business interruption caused by politically motivated acts of war or civil disturbance in the country, including revolution, insurrection, *coups d'état*, sabotage, and terrorism (MIGA 2021). Other PRI providers or export credit agencies can provide similar coverage but normally with higher premium rates than that offered by MIGA, which stands at around 1 per cent of the insured amount each year for average risks. The current situation in Ethiopia means that the actual PRI premium may be significantly higher than this benchmark, which could undermine the financial viability of IPP projects.

It should be noted that PRI can only cover major damage to assets and business interruption, but not insignificant losses from small-scale crimes and non-political incidents. Therefore, apart from PRI coverage, the other crucial risk mitigation strategy for security risks is maintaining close relations with the local government and communities throughout the project cycle.

During the project construction and maintenance phase, the overall security of the project would also rely largely on the relationship with the local government and community, as it is unrealistic to expect the federal government to provide security support project sites on a daily basis. Therefore, building community relationships is not just a corporate social responsibility consideration, but in fact a crucial risk mitigation tool.

#### **6.4.1 Off-taker risks amid institutional transition and sovereign debt crisis**

The success of renewable energy IPPs depends ultimately on the de-coupling of the off-taker risk of EEP from the sovereign balance sheet, which seems to be unrealistic in the near future given the EEP's financial status. In the long term, EEP must act as a creditworthy off-taker of the electricity generated by IPPs. The World Bank has developed a power sector reform roadmap with the Government of Ethiopia, which contains several notable structural reforms in order to achieve that goal (World Bank 2019a). One proposal is to separate transmission and generation activities, whereby the power generation wing would be responsible for building and operating power plants, and the power transmission wing would work on expanding and maintaining transmission lines. Alongside institutional reforms are tariff reforms that started in 2018. Ethiopia has the lowest electricity tariffs in the region, which partially explains why the utility company operates at a loss. The reforms included an incremental increase in tariff rates over four years (from 2018 to 2022), with a minor increase for the first 12 months followed by a progressively steeper annual increase until 2022 (Tesfamichael *et al.* 2021). Meanwhile, subsidies are no longer available under the new tariff system for any consumer using more than 50 kWh/month, as beyond that threshold consumers must pay at an unsubsidised and much higher rate.

The separation of generation and transmission plus a less subsidised tariff system would enhance the overall efficiency of the energy system, as illustrated in many countries (Goto, Inoue and Sueyoshi 2013; Baker *et al.* 2021b). However, it should be noted that the benefits of these reforms may take years to take effect, and the actual change of market participants' risk perceptions on EEP's off-taker risk can take even longer, particularly for long-term PPAs over 20 or 25 years. Therefore, in the short term and medium term, sovereign credit will still serve as the ultimate guarantor for renewable energy IPPs.

## 7. Conclusion and recommendations

Ethiopians are energy poor, and availability of and access to energy is a development imperative. In 2017, Ethiopia took bold policy action to transition its energy sector to non-hydro renewables, a segment of which was to be procured by private suppliers.

Efforts thus far are showing credible progress: PPAs were signed with five IPPs to increase generation by 650MW, and many more projects are in the pipeline. Over 90 per cent of the country's current 4,478MW generation capacity comes from hydroelectric power, but Ethiopia aims to increase generation from a mix of renewables such as hydropower, solar and wind power to 17,056MW by 2030. The share of non-hydropower sources is planned to increase to 27.5 per cent, a large proportion of which will be procured privately through IPPs. The country also aims to raise electricity coverage from 44 per cent of its 117 million population to 100 per cent by 2030, to meet the SDG 'Ensure access to affordable, reliable, sustainable and modern energy for all'.

Ethiopia has rich and untapped energy resources and growing demand for electricity, fuelled by a fast-growing economy and population. However, this study has found major fault lines that are impeding the implementation of IPP projects, as follows.

**The number and size of IPP projects is too ambitious:** Two tenders were announced in quick succession. By many standards within the sub-Saharan African region, IPP project sizes also tend to be large, adding risk to investment. We found that ambitious energy plans are inherent in the system and driven by policy narratives that emphasise Ethiopia's rich renewable resources and unmet demand, but with less attention to institutional and technical capacity to plan implementation, and the risks that investors face as they raise project finance and implement projects. Planners appear to see IPP projects as 'magic bullet' solutions, which can create false optimism. We recommend that target-setting be more realistic and firmly based on the understanding of complex factors such as risk to investors. Project size and sites should emerge from considerations of choices between optimal technical, financial, economic, and political options. A large number of projects stuck in the pipeline will only overstretch the limited institutional and technical capacity when dealing with multiple and simultaneous negotiations. The immediate focus should be on designing and implementing an exemplar project and generating lessons that can address many of the (seemingly intractable) challenges.

**IPP governance is rife with institutional tensions:** Overlapping roles and responsibilities between the PPP-DGU and EEP are the main cause of these tensions, with political and technical differences at the core. EEP feels its roles and responsibilities have been 'appropriated' by the PPP-DGU, while the latter has limited capacity to prepare and implement tenders. These tensions appear to have disempowered and demotivated staff at EEP and slowed down the tendering process. Core institutions need to draw on their competency areas and work in sync to succeed. We suggest that the PPP-DGU focus on provision of sovereign guarantees for IPPs, while EEP, as an off-taker, could focus on all the technical aspects of electricity procurement via IPPs.

**Weak and fragmented IPP governance:** The governance of renewables, relevant policies and requisite technical expertise for managing projects are dispersed across the main institutions, and there is no 'one-stop-shop' for investors, which impedes the procurement process. While IPP project developers are required to follow PPP directives and start with EEP and/or the PPP-DGU as their entry point, many find themselves caught between several agencies. Some start with the Ministry of Water, Irrigation and Energy or even regional governments as the policies and guidelines of these agencies command power over access to resources. Lack of coordination between central and regional governments over availability of project sites is one challenge. Regional governments are not formally involved in the decision-making process, but they play a critical role in making land or project sites available to investors and to project implementation on the ground. We recommend that the PPP-DGU and EEP increase awareness among key institutions involved in IPPs and the project tender processes, making procedures clear and circulating them widely, including via websites.

**IPP project preparation and implementation face capacity deficits:**

Key institutions, including the PPP-DGU, experience dire shortages of expertise and skills in finance, law, and preparation of bid documents. Existing expertise and skills in the system tend to be skewed towards hydropower development. Institutions have taken the short-term solution of implementing capacity-building programmes, and hiring transaction advisors and consultants. We recommend that relevant institutions work together, identifying and capitalising on existing capacity. In the medium to long term, there needs to be a conducive environment for training, attracting and retaining staff, and developing clear career pathways within the organisations, with improved salary scales.

**Increasing interest in unsolicited proposals is putting undue pressure on EEP technical teams:** While an IPP project service is generally procured in response to a request by EEP and/or the PPP-DGU, a



large number of unsolicited proposals are submitted by 'voluntary' promoters for consideration. This study found that not one such project had been approved, yet a significant number are regularly submitted to EEP staff. As there does not seem to be transparency (and fair competition) in evaluating these projects, there is a need for guidelines as to how they should be processed and evaluated.

**Investors face major project risks, real and perceived:** The main challenge has been foreign currency availability, and convertibility of birr to foreign currencies. Availability is a reflection of a sustained unhealthy status of Ethiopia's forex reserves (or mismatches between earnings and high demand for debt service and essential imports, including investment goods and services). Also, like any other country, Ethiopia has many priorities, including importing medicines. What makes it pronounced for investors and financiers is the unpredictability of access to forex to expatriate profit. This study proposes a range of potential solutions to mitigate this risk, including commitment to a timeline for currency repatriation, allocation of a certain proportion of forex from energy exports, and developing the competitive domestic private sector to partner global IPPs and possibly reduce the demand to expatriate profit.

**Weak policy support to the nascent domestic private sector:** We found no Ethiopian company participating in the renewable energy IPP tenders, but there is one junior partner with Enel Green Power on the Metehara solar PV project. In the medium and long term, a viable domestic private sector could mitigate (for example) the forex supply and currency convertibility issues described above. The development of the sector could not only reduce the need to convert birr into foreign currency to repatriate profits, it would also enhance knowledge and increase technology transfer, and boost local technology development and manufacturing. Thus we recommend a strong programme to nurture the domestic private sector through tax incentives, training and coaching, and promoting joint ventures.

**Security risks:** The armed conflicts in northern Ethiopia, as well as the lower-level ethnic-based political tensions across the country, conflated with global geo-politics and use of 'soft' power, have strained investment flows into the renewables and other sectors. Swift solution is key to tackling the worsening situation, as under current circumstances there can be very few political risk insurers willing to cover Ethiopian IPP projects. Project companies' engagement with communities (promotion of community development works) can also provide the requisite 'social license' and be a source of strength during both peaceful and turbulent times, where communities protect foreign investment projects and infrastructure that lasts over two or more decades.



**Access to land/project sites:** IPP projects were developed on assumptions about quick access to project sites, but for some projects the process of getting access on the ground was rather protracted. The socio-political environment required for securing land, consultation with local communities, and resolving compensation issues should therefore be part of the initial procurement plans.

To conclude, Ethiopia's policy to transition to a mix of renewable energy resources and increase the contribution of non-hydro renewables with a segment procured by private suppliers has taken off from solid foundations. The legal and institutional framework to facilitate privately financed project development has resulted in a number of ongoing renewable energy IPP projects, with more in the pipeline. However, notable challenges remain in terms of governance, capacity gaps, and substantial risks to investment. Many of these problems are part of the learning process during the transition from a state-led to a market-led development pathway in the energy sector. A successful completion of at least one project would demonstrate the credibility of the process, and this is the most urgent task.

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