PROJECT INFORMATION DOCUMENT (PID)
IDENTIFICATION/CONCEPT STAGE

Report No.: PIDC69794

Project Name	Zambia Scaling Renewable Energy Program Investment Plan
Region	AFRICA
Country	Zambia
Sector(s)	Other Renewable Energy (80%), General energy sector (20%)
Theme(s)	Infrastructure services for private sector development (40%), Rural services and infrastructure (30%), Climate change (30%)
Lending Instrument	IPF
Project ID	P160383
Borrower Name	Ministry of Finance
Implementing Agency	Ministry of Energy and Water Development
Environment Category	B - Partial Assessment
Date PID Prepared	14-Jun-2016
Estimated Date of Approval	31-Mar-2018
Initiation Note Review Decision	The review did authorize the preparation to continue

I. Introduction and Context

Country Context

Zambia is a lower-middle-income country with close to 16 million inhabitants and Gross Domestic Product (GDP) estimated at US$ 27.07 billion in 2014; equating to a per capita income of around US$ 1,721. Zambia has made significant socio-economic progress over the past two decades. A relatively stable macroeconomic environment and improved macroeconomic policies since the mid-1990s were further supported by improved copper prices in the 2000s, resulting in average annual growth of about 7.5 percent between 2007 and 2014. The government consolidated macroeconomic stability and successfully navigated the shocks connected with the 2008 global economic and financial crises. However, economic challenges have returned as copper prices have been falling since 2011. Further economic growth has not been inclusive and 61.2 percent (US$1.9/ day PPP terms) of people are living in poverty.

The Zambian economy has deteriorated considerably since August 2015 when global copper prices fell swiftly to 2009 levels. The drop in the copper price was a key driver in the 2015 depreciation of Zambia Kwacha against the US$. In addition to the global headwinds, Zambia experienced domestic pressures in the form of: (i) repeat fiscal deficits (reducing confidence in the economy); (ii) reduced and delayed rainfall in 2015 (undermining agricultural incomes and lowering the water level in reservoirs); and (iii) increased power outages, equal to half of peak demand. Power deficits and copper price concerns will likely further reduce mining production, and employment as firms react to tougher global conditions. Given these challenges and the power deficits, GDP growth dropped to an estimated 3 percent in 2015 and the economy expected to experience an equally

muted expansion in 2016. Assuming that global copper prices recover, there is an expectation that prospects for the Zambian economy will improve over the medium-term, with GDP growth returning to roughly 5-6 percent by 2018; although down-side risks remain.

Poverty in Zambia is widespread, 61.3 percent of the population lives in extreme poverty (US$1.9 per day measure, PPP terms) and is higher among women. Rural poverty at 74 percent is also more than double the urban poverty of 35 percent. Sustained growth and continued political stability have produced only modest improvements in livelihoods. The effect of economic growth on overall poverty reduction has been small, as benefits have accrued to those already above the poverty line. Growth has been primarily driven by mining, construction, and financial services and did little to create jobs and expand opportunities beyond the relatively small labor force already employed in these industries.

Sectoral and Institutional Context

Electricity is the second most important energy source in Zambia after wood fuel, providing 10 percent of the national energy supply. The mining industry accounts for about 55 percent of national electricity consumption, followed by service industries and residential customers totaling about 36 percent. The installed generation capacity is about 2,203 MW, and the main source of electricity generation is hydro, which represents 99 percent of electricity production. The overall national electricity access rate is 25 percent; of which, over 47 percent of the population in urban and peri-urban areas, and only 3 percent in rural areas have access to electricity. As part of its Vision 2030, the Government has set ambitious electrification targets: 90 percent in urban and peri-urban areas and 51 percent in rural areas by 2030. Shortage or poor quality of electricity supply and lack of access to electricity services have an adverse impact on the national economy. Over the decade ending in 2010, these factors reduced the per capita GDP growth rate in Zambia by more than 0.1 percentage point. The country is currently experiencing severe power shortage and load shedding.

Electricity supply in Zambia is largely provided by the Zambia Electricity Supply Company Ltd. (ZESCO), a vertically integrated, state-owned company. ZESCO owns and operates over 90 percent of the generation, transmission, and distribution assets in the country and supplies electricity to all consumers, with the exception of a significant portion of the mining industry. The Zambian electricity sector is overseen by the Ministry of Energy and Water Development, which provides overall policy guidance. There is an independent regulatory agency, the Energy Regulation Board (ERB), which is responsible for licensing, tariff setting, and quality of supply and service standards. ERB is mandated to regulate the sector in a transparent, effective, and efficient manner which safeguards the interests of all stakeholders, in line with the provisions of the Energy Regulation (Amended) Act 2003.

Private sector investment and operation is allowed in Zambia power sector, following the liberalization of the electricity supply industry in 1995. The largest private enterprise in Zambia power sector is the Copperbelt Energy Corporation (CEC), which owns transmission/ sub-transmission infrastructure in the Copperbelt Province of Zambia for the supply of electricity to the mining industry. The other two main private sector entities in the industry are Lunsemfwa Hydro Power Company, with 50 MW of generation, and Ndola Energy, an independent power producer (IPP) that operates a 50 MW heavy fuel oil (HFO) plant commissioned in 2013.

Electricity demand in Zambia has been growing at 4 percent per year, commensurate with the average annual GDP growth of about 5.7 percent during the last decade. While installed capacity in Zambia has been higher than existing peak demand, generation has remained below total energy demand due to lower than expected rainfall over the last two years. Although Zambia is endowed with large hydropower resources, the building of power plants to take advantage of these resources has been sporadic due to lengthy procurement processes and a difficult financial risk environment, resulting in significant delays in the awarding of contracts and commissioning of power plants. The latest capacity addition, after commissioning the Kariba North Bank power station (600 MW) in 1977, was a 360 MW expansion at the same site that was completed in 2014. The continued increase in electricity demand in the midst of this erratic generation development combined with low rainfall has led to the current power shortages. As of May 2016, ZESCO has invoked rolling black-outs (load-shedding) of about eight hours per day on a rotational basis, to manage about 760 MW of power deficit representing 40 percent of peak demand. The cost of this load shedding in the near-term is estimated at about US$250 million, which is more than 40 percent of ZESCO's fiscal year 2013 revenue (about US$600 million). The costs to the economy are significant, with estimates of 40 percent drop in manufacturing production, which could lead to job losses, and about 30 percent reduction in electricity supply to the copper mines, the mainstay of the Zambian economy.

Government has taken short term measures to reduce the power deficit. ZESCO has contracted for emergency power from EDM (Mozambique), Aggreko and ESKOM. 120 MW Itezhi-Tezhi hydro plant was commissioned in March 2016 and 300 MW Maamba coal plant is planned to be commissioned in late 2016. As current level of power deficit is about 750 MW, load shedding will still continue with these new power plants commissioned.

Renewable production could help replace high cost emergency power and reduce the power deficits. Given the short construction period of solar power plants, commissioning solar plants can help reduce power deficits and will be complementary with the hydro based system with substantial reservoir capacity. Other renewable energy options, such as small hydro, wind, geothermal and biomass can also be explored in the long run.

Relationship to CAS/CPS/CPF

This project is consistent with the Bank's twin goal of reducing poverty and boosting shared prosperity, as well as with the World Bank Group's FY13-16 Zambia Country Partnership Strategy (CPS). The CPS, which is closely aligned with the Government of Zambia's Vision 2030 and Zambia's National Development Plans, is articulated around three key objectives: (i) reducing poverty and vulnerability of the poor; (ii) improving competitiveness and infrastructure for growth and employment; and (iii) improving' governance and strengthening economic management. Support to the electricity sector is specifically mentioned as part of the strategy for achieving the CPS's objective (ii).

II. Project Development Objective(s)

Proposed Development Objective(s)

The project development objective is to support the Government of the Republic of Zambia to prepare a renewable energy investment plan for consideration by the SREP for funding.

Key Results

Renewable energy investment plan prepared.

III. Preliminary Description

Concept Description

The project will provide support to the Government Republic of Zambia (GRZ) in the preparation of the SREP Investment Plan for consideration by the SREP subcommittee for funding. The Investment Plan will identify projects that the GRZ would want the SREP fund to support. This will be a high level document which will identify whether the selected projects meet the eligibility criteria to receive funding support from SREP. These include, renewable energy based projects, selected through a consultative process, involvement of private sector participation, ensuring poverty reduction, promotion of gender equality, etc. The investment plan will also identify the Multilateral Financing Agency (MFA) that will co-fund each project. Once the investment plan is approved, then each project will have to follow the identified MFA➢(s project approval process to become eligible for funding. To prepare the Investment Plan, the GRZ will appoint consultants to review existing studies that may be reused in the framework of SREP and identify the most appropriate components and investments following specific criteria. The consultants will also review the enabling environment for the development of renewable energy projects in the country and propose changes necessary. Finally the consultants will review and provide recommendations regarding the current business models and selection criteria and mechanisms with the aim of promoting additional transparency and objectivity.

GRZ designated the Director of the Department of Energy (DoE) of the Ministry of Energy and Water Development as the Focal Point for the preparation of the SREP Investment Plan for Zambia. The Alternate Focal Point is the Director of the Interim Climate Change Secretariat. GRZ has nominated a task force, and is awaiting formal appointment by the Secretary to Cabinet. The Task Force would include: Permanent Secretary, Ministry of Energy and Water Development; Permanent Secretary, Ministry of Finance; Director, Department of Energy; and representatives from Cabinet Office; Ministry of National Development Planning; Interim Inter-Ministerial Climate Change Secretariat; Zambia Environmental Management Agency; Energy Regulation Board; ZESCO Limited; Rural Electrification Authority; and the Office for Promoting Private Power Investment.

Zambian stakeholders indicated the following as the obstacles to the renewable energy investment.

- Lower than cost-reflective tariff is a major constraint to private sector participation in the Zambia power sector;
- Absence of a transparent and competitive procurement framework, standardized power purchase agreements, indicative term sheets to raise debt, etc. negatively affect the level of private investment in Zambia power sector;
- Lack of clarity on the future of mini-grids when national grid reaches the mini-grid areas, puts the mini-grid developers at risk and reduces attractiveness for new investments;
- Absence of a least-cost expansion plan does not allow ZESCO to efficiently expand the power sector;

The investment plan will be aligned with the priorities identified in the National Energy Policy of 2008 (NEP2008), the Sixth National Development Plan (SNDP 2011-2016), and the Vision 2030, which aims to transform Zambia into a prosperous middle income country with universal access to clean, reliable, and affordable energy by 2030. Likewise, the prioritization of investments proposed in the investment plan will consider its alignment with both SREP objectives and GRZ priorities as outlined in the NEP2008 and the Rural Electrification Master Plan (REMP).

The investment plan shall demonstrate how the proposed activities will lead to barrier reduction for renewable energy development and market transformation, including increased private sector participation in the sector. The potential areas of engagement under the SREP may include renewable energy technologies such as small-hydro, solar, geothermal, and wind. During the preparation of the investment plan, the GRZ will identify and review all types of renewable energy applications (including cook stoves) and business models that have potential for replication in Zambia through consultation with relevant stakeholders. The investment plan will be developed to include a broader set of renewable energy priorities to help GRZ access not only SREP resources but also other climate finance resources such as the GCF.

IV. Safeguard Policies that Might Apply

Safeguard Policies Triggered by the Project	Yes	No	TBD
Environmental Assessment OP/BP 4.01	×		
Natural Habitats OP/BP 4.04		×	
Forests OP/BP 4.36		×	
Pest Management OP 4.09		×	
Physical Cultural Resources OP/BP 4.11		×	
Indigenous Peoples OP/BP 4.10		×	
Involuntary Resettlement OP/BP 4.12		×	
Safety of Dams OP/BP 4.37		×	
Projects on International Waterways OP/BP 7.50		×	
Projects in Disputed Areas OP/BP 7.60		×	

V. Financing *(in USD Million)*

Total Project Cost:	0.3	Total Bank Financing:	0
Financing Gap:	0		

Financing Source	Amount
Strategic Climate Fund Grant	0.3

VI. Contact point

World Bank

Contact: Raihan Elahi
Title: Senior Energy Specialist
Tel: 473-4401
Email: relahi@worldbank.org

Borrower/Client/Recipient

Name: Ministry of Finance
Contact: Honorable Alexander Bwalya Chikwanda
Title: Minister
Tel: 260211250481
Email: ALL_MOFNP@mofnp.gov.zm

Implementing Agencies

Name: Ministry of Energy and Water Development
Contact: Oscar Kalumiana

Title: Director, DoE
Tel: 260-211-254491
Email: kalumiana64@yahoo.com

VII. For more information contact:

The InfoShop
The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 458-4500
Fax: (202) 522-1500
Web: http://www.worldbank.org/infoshop

Public Disclosure Copy