

Lusaka Renewable Energy Project-Chongwe Smart City

Project needs

- Zambia faces a mounting deforestation challenge with over 170,000 hectares of forest lost annually contributing significantly to Zambia's GHG emission profile
- Electricity Access in rural areas remains low at less than 10% of the population resulting in the use of charcoal as an alternative source of energy.
- ZESCO, the power utility company, tends to rely on heavy fuels for off-grid solutions in rural areas further increasing fossil fuel based emissions
- Poverty levels remain high especially in rural areas ranging between 50 and 70% coupled with high unemployment levels. Combined, they worsen the pressure on natural resources such as trees, water and land-use practices.
- Gender inequalities remain an ensuing challenge from unemployment and high poverty levels in the country and in various Chiefdoms

Mitigation impact

Estimated mitigation impact over lifespan	3,234,655 tCO ₂ eq
Estimated project lifespan	25 years
Project duration	6 years

Project overview

- The programme seeks to rapidly procure 100MW of solar energy at low cost through competitive tendering for the construction of grid-connected capacity, to increase private sector participation in line with the country's national development imperatives. Direct benefits include:
 - Reduce energy deficit by introducing sustainable supply of solar based renewable energy into the grid and thereby contributing to reduction in the use of charcoal and in turn lowering the rates of deforestation;
 - Reduce greenhouse gas emissions from electricity sub sector of the energy sector
- Attainment of these objectives will have triple benefits: ensuring access to sustainable energy to rural communities, creation of jobs and protecting the environment thereby contributing to poverty reduction and climate change mitigation

National context

- Zambia's Revised Nationally Determined Contribution (NDC) targets emission reductions of 20,000GgCO₂eq by 2030 BAU and 38,000GgCO₂ eq with substantial international support.
- Priority sectors of intervention include sustainable Forest Management, Sustainable Agriculture, Renewable Energy and Energy Efficiency, Transport, Coal and Waste.
- The Eighth National Development Plan has targeted reforms to make the sector more efficient and effective. Focus will be on increasing electricity generation capacity and promotion of alternative green and renewable energy sources as well as scaling up rural electrification. The increase in generation capacity will be anchored on the reforms that will be undertaken in the electricity sub-sector to attract private sector investments.
- Zambia's NDC Implementation Framework includes increased share of renewable energies in the national grid and increased energy efficiency as one its outcome indicators towards achieving the country's revised and ambitious contribution to the objectives of the Paris Agreement.
- Government, through the Ministry of Energy, has developed the Renewable Energy Strategy and Action Plan whose aim is to guide and facilitate the acceleration and adoption of Renewable Energy technologies in Zambia and contribution to economic growth and poverty reduction through wide-scale diffusion of Renewable energy technologies

Justification of funding request

Both the Financial and Economic IRR are much higher than the Interest Rate of 4% used to fund the project, thereby indicating that the project is viable.

Special Purpose Vehicle: Private Sector Promoters in Partnership the Zambia's Industrial Development Cooperation representing the interests of Government

Power Purchase Agreements and network connection to be signed with the Zambia Electricity Supply Cooperation (ZESCO).

Finance required

Total Project cost USD	99.5 million
Requested funding amount	USD 99.5 million
Financial instrument	70% Debt; 30% Equity
Duration of project	25 years

Financial IRR - Pre-tax (%)	12.47%
Financial IRR - After-tax (%)	10.72%
Economic IRR (%)	37.88%
B/C Ratio	47.4
Financial NPV (US\$'000)	123,223
Economic NPV (US\$'000)	6,044,028
LCOE Per kWh	0.11

Sustainability and replicability of the project (exit strategy)

- Zambia has previously deployed similar successful projects in 2015. The proposed project will be a replication by itself.
- A range of outside investors is aiding Zambia's shift to solar power. GET.Invest, for example, mobilises investments in decentralised renewable energy projects. It is a multi-donor platform supported by the European Union, Germany, Sweden, the Netherlands and Austria.
- GET.invest is a European programme which supports investment in decentralised renewable energy projects. The programme targets private sector business and project developers, financiers and regulators to build sustainable energy markets.

Government Contact

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