<u>The Namibian Coat of Arms to be Added once Approved</u>

GOVERNMENT OF THE REPUBLIC OF NAMIBIA

MINISTRY OF MINES AND ENERGY

NATIONAL ELECTRIFICATION FUNDING PORTFOLIO

December 2021

Acknowledgements

The Ministry of Mines and Energy (MME) gratefully acknowledges the many valuable inputs received from numerous contributors during the development of the National Electrification Funding Portfolio which was developed in tandem with the National Electrification Policy of 2021.

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Foreword

Access to affordable electricity is a key requirement for socio-economic development. Providing energy services plays a particularly important role in creating the conditions in which individuals as well as commercial and industrial actors meet their basic energy-related requirements while being empowered to reach their personal development aspirations.

The Government of Namibia is cognisant that access to electricity remains a national challenge. Particularly in rural Namibia, access to modern energy services is often significantly underdeveloped, especially when compared to most urban centres. It is for this reason that the Government considers it critically important to spell out its electrification intentions, which is to include private sector service providers joining the effort in delivering electricity services to all.

The Government recognises the abundance of local renewable energy resources that Namibia is so richly endowed with. These are important as both on- and off-grid electricity generation technologies using renewable energies have tremendously advanced in recent years. As a result, our indigenous energy resources can play an increasingly prominent role in delivering electricity services to communities as well as commercial and industrial activities that are critical for the nation's continued development.

Accelerating national development to benefit all Namibians implies that the Government intends to substantially increase access to reliable electricity services, with the aim to achieve universal access by 2040. This is what the National Electrification Funding Portfolio and the National Electrification Policy (which was developed in tandem with this Portfolio) are about: using contemporary technologies and approaches in conducive market environments to provide reliable and affordable electricity services that spur individual and national development while benefitting from local resource endowments where these can be used. In this way, the Government seeks to actively unlock the country's growth and investment potentials, in close collaboration with established as well as new utilities as well as private sector actors, to enable sustainable economic growth and socio-economic advancement of the people of Namibia.

It is my hope that this National Electrification Funding Portfolio will provide practicable support during the implementation of the National Electrification Policy, to allow the Government to deliver reliable, affordable and sustainable access to electricity services that create tangible development prospects for all Namibians.

…………………………………………………….

Tom K. Alweendo, Member of Parliament

Minister of Mines and Energy

Acronyms and Abbreviations

bn	billion
DFI	Development Finance Institution
ECB	Electricity Control Board
EDI	Electricity Distribution Industry
EE	Energy Efficiency
Electricity Act	Electricity Act, 2007 (Act No. 4 of 2007)
Electricity Bill	Electricity Bill, 2019
ESI	Electricity Supply Industry
GRN	Government of the Republic of Namibia
GSM	Government Support Mechanism
IPP	Independent Power Producer
LA	Local Authority
Minister	The Minister of Mines and Energy *(unless indicated otherwise)*
Ministry	Ministry of Mines and Energy (*unless indicated otherwise*)
MoF	Ministry of Finance
MoHE	Ministry of Higher Education, Training and Innovation
MME	Ministry of Mines and Energy
MoPE	Ministry of Public Enterprises
MTF	Multi-tier Electricity Services Framework *(as introduced in the NELP)*
MURD	Ministry of Urban and Rural Development
MW	Mega-Watt
MWT	Ministry of Works and Transport
NamPower	Namibia Power Corporation
NEF	National Energy Fund
NEI	Namibia Energy Institute
NELFP	National Electrification Funding Portfolio
NELP	National Electrification Policy
NEP	National Energy Policy
NERA	Namibia Energy Regulatory Authority
NPC	National Planning Commission
NQA	Namibia Qualifications Authority
NSC	Namibian Standards Council
NSI	Namibian Standards Institution
NTA	Namibia Training Authority
OMAs	Offices, Ministries and Agencies of the Government of Namibia
RC	Regional Council
RE	Renewable Energy
RED	Regional Electricity Distributor
REFIT	Renewable Energy Feed-in-Tariff
REP	National Renewable Energy Policy
SADC	Southern African Development Community
SAPP	Southern African Power Pool
SRF	Solar Revolving Fund
Utility	Licensed operator active in the Namibian electricity industry

Glossary and Definitions

Term	Definition
access to electricity *2	An end-user supplied by a power supply system that delivers Tier 3 or higher services on the multi-tier electricity service framework as defined in the National Electrification Policy (2021).
economic return/benefit	The socio-economic returns/benefits that accrue to Namibia, including externalities that are not fully borne by a service provider or customer.
electrification *2	In the context of the National Electrification Policy, electrification means the installation of technologies that provide access to electricity to one or several end-users, undertaken by or on behalf of Government or a regulated electricity supplier.
electrification agent	A distribution and/or supply licence holder or an authorised entity under contract to such a licence holder who implements electrification.
financial return	The monetary return generated on capital invested.
Government Support Mechanisms	Government Support Mechanisms include but are not limited to • Tax incentives • Viability Gap Funding • Upfront payments • Guarantees • Output grants • Tax holidays • Losses carried forward • Depreciation allowances • Customs duties or exemptions • VAT and other tax exemptions
off-grid *2	An electricity end-user, supply system or distribution network not connected to the national electricity grid, irrespective of the location or proximity to the grid.
Regulator *2	The authority responsible for the regulation of the country's electricity industry.
renewable energy *1	Renewable energy is energy that is derived from resources or processes that are naturally replenished on a human timescale. Solar, wind, hydropower, bioenergy, geothermal and ocean/wave power are examples of renewable energy sources.
sustainable development *1	Development that meets the needs of the present without compromising the ability of future generations to meet their own needs.
universal access to electricity *2	Access to electricity services for all.

*1 Definitions as provided in the National Energy Policy, 2017.

*2 Definitions as provided in the National Electrification Policy, 2021.

Executive Summary

Namibia's national development ambitions are guided by Vision 2030, which was adopted in 2004. Vision 2030 foresees the provision of secure and affordable energy to the country's developing economy and its people, providing the overall long-term development goals for the country while subscribing to the principle of sustainable development. Specifically, Vision 2030 foresees "a prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony and political stability".

An industrialised Namibia, as per Vision 2030, can only be realised provided that secure, sufficient, and economically priced energy supplies are and remain available. This ambition has definite repercussions for the country's ongoing electrification and the creation of access to modern energy services for its citizens, commerce and industry. This also means that national electrification efforts must be accelerated.

Electrification is a pre-requisite for Namibia to achieve her development objectives. Socio-economically, access to affordable electricity is a pre-requisite to a more competitive economy, while universal access to electricity is a critical requirement for equality of opportunity within the economy. Environmentally, displacing energy sources that emit particulate matter as well as noxious gases is achieved by switching to cleaner sources of energy. Legally, Namibia's energy policies are clear about the Government's intent to advance national electrification efforts. Technically, a wide variety of new technologies are available to meet the electrification needs of end-users, including by way of mini-grids or stand-alone solar home systems, which broaden the technical scope to beyond supplying electricity by way of a connection to the national electricity grid. Financially, national electrification undertakings require long-term funding commitments other than from the Government. Politically, electrification continues to remain a high priority as it is widely recognised to positively impact the lives of those who have access to it.

Namibia's electrification constraints are, to a large degree, related to the availability of capital required to undertake electrification projects. This is because many of these projects are not commercially viable on a standalone basis and remain heavily dependent on non-commercial capital such as public funds and cross-subsidies, for their undertaking. At the same time, Namibian public funds that can be allocated to electrification remain limited.

Despite local funding constraints, a wide variety of global concessional funding options as well as commercial funding opportunities exist and could be applied to expedite the local electrification drive. However, harmonised vehicles to capture and exploit these global funds are not yet established, meaning that these funds are not yet being utilised to their full potential.

The provision of affordable electricity consists of two core components: firstly, the installation of infrastructure, which requires capital expenditure; and secondly, the provision of and payment for electricity services. The initial cashflow implications of providing access to electricity are negative, i.e., there is an upfront outlay of capital in order to provide access to electricity. In some instances, this cashflow can be recovered, over a period, through the sale of electricity. The degree to which costs can be recovered, and the potential loss or return generated from the initial capital outlay, plays a vital role in determining the best possible funding option for every electrification project.

At present, most of the operational costs for electrified low-income houses are subsidised through a tariff cross-subsidy. However, such cross-subsidies have considerable limitations and drawbacks, and their potential for further expansion is neither considered significant nor realistic. An exception is the envisaged National Electrification Support Tariff (NEST) levy, which is to apply to all electricity consumers except those benefitting from this support tariff. The NEST will enable low-income households to consume a set amount of subsidised electricity, aligned to basic needs, and thus should contribute to a reduction in poverty. While some tariff cross-subsidisation of operational costs for low-income households is possible, this is impractical for capital costs. Distortions associated with tariff-linked capital cost subsidies are likely to be counter-productive and may undermine macro-economic development efforts. As a result, alternatives are needed.

In order to provide for the capital needs associated with expediting national electrification, an Electrification Fund, constituted of specialist sub-funds, that benefits from a National Electrification Funding Portfolio, is proposed. This Fund, as is introduced in this document, includes several distinct funding types and potential sources of funding that may be employed to contribute to Namibia's future electrification undertakings.

The purpose of the Electrification Fund is to

- aggregate regular electrification funding contributions from the Government, state-owned enterprises, and, if applicable, end-user levies;
- attract private capital into the country's electrification efforts by offering co-funding for private-led electrification efforts;
- capitalise on global development, DFI and climate-related financing;
- maximise and encourage electrification investments by licensees by providing co-funding to render project costs commercially acceptable; and
- optimise the return per dollar of public funds spent on electrification.

The Electrification Fund will provide a single point of access for electrification funding from a variety of sources, including from the Government, development finance institutions (DFIs), private capital, electrification end-users and others for those undertaking electrification activities. The Fund is to actively engage relevant Government entities as well as other potential funders to seek and secure additional funding for electrification in Namibia. The Fund will "crowd-in" funding for electrification, and leverage the current resources deployed for electrification to accelerate the country's electrification efforts without additional cost to Government.

The Fund must be credibly, professionally and transparently managed to assure both contributors and beneficiaries that all funds are accounted for, used for the intended purposes in line with Government policies and plans and that it constitutes a funding vehicle that can be relied on by all relevant stakeholders. It is therefore essential that the Fund is to be managed by a credible funding entity following transparent and rigorous governance, management and operational processes.

The Fund will seek to attract grant and concessional funding to the greatest degree possible. It will thus not primarily focus on generating financial returns but seek to optimise disbursements to maximise electrification per dollar spent.

This Report provides a high-level description of the ownership, governance, management and select operational aspects of the Electrification Fund. Provided that the Fund is actively supported by the country's key electricity stakeholders, it could bring about a marked increase of funding to substantially upscale national electrification efforts in Namibia in future.

1. Introduction

1.1 Structure

The content of this document is structured as follows:

- **This chapter** introduces the broader context in which the National Electrification Funding Portfolio is to be read.
- **Chapter 2** identifies the funding needs to achieve Namibia's electrification objectives.
- **Chapter 3** describes the general funding considerations required for further electrification.
- **Chapter 4** provides a brief overview of the use of cross-subsidies in the electricity industry.
- **Chapter 5** introduces the Electrification Funding Portfolio.
- **Chapter 6** introduces the Electrification Fund.
- **Chapter 7** details the steps towards implementing the Electrification Fund.
- **Chapter 8** provides brief conclusions.

1.2 Purpose

This document is **the National Electrification Funding Portfolio (NELFP)** for **Namibia** and communicates the Government's intent and objectives pertaining to the diversification and optimisation of the funding strategy for national electrification.

This NELFP should be read in tandem with the National Electrification Policy (NELP), which is to guide electrification efforts into the future. Together with the to-be-developed National Electrification Master Plan (NEMP), the NELP and NELFP constitute the National Electricity Support Mechanism which was approved by Cabinet, and which is the foundation on which universal access to electricity in Namibia is to be achieved.

1.3 Objective

The objective of this document is to set a framework for the diversification and optimisation of funding for development objectives pertaining to national electrification.

1.4 Custodianship

The primary custodian of the National Electrification Funding Portfolio is the Ministry of Mines and Energy, as the primary custodian of electrification in Namibia. The Ministry will, however, require substantial support from secondary custodians, including the Ministry of Finance and the National Planning Commission, as the entities responsible for the broader financing framework for national development.

1.5 Stakeholders

Namibia's electrification stakeholders, and by extension, electrification funding stakeholders, can be broadly categorised into four groups, namely:

The Government of the Republic of Namibia, via the:

- Ministry of Mines and Energy
- Ministry of Finance
- National Planning Commission
- Ministry of Works and Transport
- Ministry of Urban and Rural Development

The Electricity Supply Industry, including:

- Electricity Control Board
- NamPower
- Electricity Distributors
- Private sector actors
- Energy Associations

Financial Intermediaries, including:

- the Development Bank of Namibia
- Namibian and Regional Commercial Banks
- the Environmental Investment Fund
- Development Finance Institutions

Consumers including:

- Representative consumer organisations
- Select Corporates
- Select Non-Governmental Organisations

1.6 Context

Namibia's national development ambitions are guided by Vision 2030, which was adopted in 2004. Vision 2030 foresees the provision of secure and affordable energy to the country's developing economy and its people; it provides the overall long-term development goals for the country; and it subscribes to the principle of sustainable development. Specifically, Vision 2030 foresees "a prosperous and industrialised Namibia, developed by her human resources, enjoying peace, harmony and political stability".

The Government's medium-term goals and strategies are expressed in National Development Plans (NDPs), which are formulated in accordance with Vision 2030 and revised every five years. Regarding energy-related developments, the national development framework described above has the following implications:

1. An industrialised Namibia, as per Vision 2030, can only be realised provided secure, sufficient, and economically priced energy supplies are and remain available. This ambition has definite repercussions and implications for the country's on-going electrification and creation of access to modern energy services for its citizens, commerce, and industry.
2. Economic and social upliftment of the people of Namibia includes access to modern energy services, including electricity, at fair and affordable prices. Without such access, the people of Namibia cannot realise their personal development ambitions. Again, it is the country's energy industry that must ensure that the energy resources are available to power the nation and her people.

The National Energy Policy (NEP) of 2017 foresees an increase in local, decentralised electricity generation using renewable resources by means of leveraging Namibia's natural resource endowments to increase energy self-sufficiency and promote the availability of affordable electricity for Namibia's economy and people. It also expresses the ambition of creating access to at least one form of electricity service for all Namibians.

The National Renewable Energy Policy (REP) of 2017 advocates the thrust towards increasing the renewable energy contribution to the country's electricity mix. Renewable energy generation technologies, such as those used for decentralised electricity generation and off-grid applications, have the potential to contribute to reaching the NEP goal of universal access to electricity in Namibia.

The Independent Power Producer Policy (IPPP) of 2018 foresees significant investment in renewable energy IPPs, in alignment with the National Integrated Resource Plan (NIRP). The IPPP foresees that IPPs will contribute to off-grid investments and the advancement of rural electrification.

In keeping with the key policies identified above, this National Electrification Funding Portfolio (NELFP) is informed by the requirements of sustainable development, where social, governance, economic and environmental considerations are the pillars on which the actions towards enhancing access to electricity services for all Namibians are built.

1.7 Rationale for electrification

The rationale for further electrification is based on the following principal considerations:

- **Socio-economically**, access to affordable modern energy such as electricity is a pre-requisite to a more competitive economy, while universal access to electricity is a critical requirement for equality of opportunity within the economy. In addition, there is broad consensus that access to modern energy leads to positive socio-economic impacts and human development, which implies that this Policy focuses on how such socio-economic value is best created through electrification.
- **Environmentally**, displacing energy sources that emit particulate matter as well as noxious gases is achieved by switching to cleaner sources of energy. Modern technologies, including those benefitting from renewable sources, often lead to a reduction of such harmful emissions. This implies that electrification holds numerous environmental advantages over the use of other forms of energy, provided clean generation technologies are employed.
- **Legally**, Namibia's energy policies are clear about advancing national electrification efforts. In practice, however, numerous barriers continue to exist, which prevent a more pronounced roll-out of electrification projects. The rationale of this Policy is to address the key legal aspects in order to strengthen the legal and regulatory changes required to accelerate national electrification efforts.
- **Institutionally**, an accelerated approach to national electrification must be appropriately anchored, which this Policy addresses by way of identifying and describing the roles and responsibilities of all relevant actors that are to collaborate to achieve the desired outcomes.
- **Technically**, a wide variety of new technologies have become widely available to meet the electrification needs of end-users, including by way of mini-grids or stand-alone solar home systems, which broaden the technical scope to beyond supplying electricity by way of a connection to the national electricity grid.

- **Financially**, national electrification undertakings require long-term funding commitments other than from the Government. This necessitates a refocus of the traditional approach to funding electrification efforts, to broaden the funding approach to include national and international sources, as well as from revenues generated from within the electricity industry. This Policy provides a holistic view on how core funding by the Government can best be leveraged to optimise future national electrification outcomes.
- **Politically**, electrification continues to remain a high priority as it is widely recognised to positively impact the lives of those who have access to it.

1.8 Electrification status, gaps and challenges

Namibia's electrification ***status*** includes:

- According to the 2011 National Census an estimated 71% (19%) of all households in urban (rural) areas have access to electricity (including off-grid sources).
- According to the National Household Income and Expenditure Survey of 2015/16, the country has a national electrification rate of approximately 45%. This means that more than half of Namibia's population does not reap the benefits of having access to electrical energy.
- Informal areas around urban centres (i.e., peri-urban areas) are rapidly expanding. In most instances, the rate at which such areas are electrified, if at all, is much lower than their growth.
- Most rural households do not have access to modern energy services, and contemporary rural electrification efforts have not been effective in significantly reducing either the existing backlog or growth in new rural households.
- In most instances, the electrification of low-income households requires a capital as well as an operational subsidy, due to low disposable incomes and the high cost of supply.
- For a variety of reasons, the commercial viability of most Namibian electricity distribution entities is marginal. This implies that the imposition of electrification obligations (e.g., as part of an electricity supplier's regulatory licence conditions) will most likely increase the risk of failure of such entities or increase electricity prices unless external funding is made available.

The country's electrification ***gaps and challenges*** include:

- A common narrative that relates socio-economic upliftment to prioritised additional electrification has not found its way into national policy deliberations or national development planning.
- The socio-economic impacts associated with electrification seldom inform national, regional or local electrification planning efforts or the setting of priorities for allocating project funding.
- In 2020, un-electrified schools, clinics and Government offices remain a reality, and more than one-half of the country's population do not have access to electricity.
- Despite the wide-ranging and significant impacts on national development, the responsibility for electrification continues to be shouldered by the line Ministry, on behalf of the GRN, and the country's electricity supply industry alone.

- The sources of funding for electrification by the state and the country's utilities are limited and remain inadequate to achieve universal access within the next two decades.
- Electrification requirements are generally poorly quantified, especially in peri-urban areas and rural Namibia. Most contemporary survey data is unclear as to whether access has been achieved, which is in part due to the absence of a national definition of access to electricity.
- Extending the grid to provide additional access to electricity is costly. Therefore, providing a grid connection to everyone is generally considered unrealistic, but it is seldom acknowledged as such.
- Off-grid electrification options have neither been embraced nor are they actively used (except in pilot projects, for government institutions, and for a small number of mini-grids) to provide access to modern energy services in locations that are far away from the existing grid.
- Namibian utility business models make little or no provision for effectively providing electricity services to those that remain beyond the immediate reach of their grid infrastructure.
- In 2020, national electrification plans are outdated, are not being followed, do not integrate grid- and off-grid options, and do not include urban informal areas.
- Most national electrification efforts are not optimally supported by existing institutional, regulatory and governance arrangements.
- Current regulatory provisions do not compel licensed electricity distributors to contribute in a significant way to the Government's national electrification efforts.
- The licence conditions of electricity distributors related to electrification remain vague and are not strictly enforced, noting however that the ECB is in the process of revising these.
- While grid-connected households benefit from cross-subsidies, off-grid and non-electrified households do not benefit from such support measures.
- Existing cross-subsidies do not promote producer price competitiveness, which is a requirement for Namibia to become industrialised as envisaged in its development plans.
- Consequently, cross-subsidies can hamper the country's macro development objectives and subvert economic principles and price signals.

1.9 Status of electrification funding

In 2021, the status of capital funding of electrification efforts is summarised as follows:

- In formal urban areas electricity access is ultimately paid for by the purchasers of serviced land and pre-funded by land developers, including local authorities and private land developers.
- The licensed electricity distributors fund limited informal urban and sometimes rural electrification from their capital budgets, which are ultimately derived from electricity sales to consumers.

- The Government funds rural electrification through allocations from the national budget and, more recently, allocations from the National Energy Fund (NEF) electricity levy which is derived from electricity consumers.
- NamPower funds rural and, more recently, urban electrification from its capital budget allocation which is derived from electricity consumers.
- NamPower manages European Investment Bank (EIB) and Swedish International Development Agency (SIDA) funding for rural electrification attached as a grant component to some of NamPower's infrastructure loans.
- Participants in some private farm electrification undertakings fund their own electrification.
- The Solar Revolving Fund (SRF) of the MME provides loan funding for private off-grid systems.
- Commercial banks provide asset-based loans to businesses and individuals for purchasing off-grid electricity systems (for farms, and rural households and businesses).
- Private businesses and individuals self-fund off-grid electricity systems and grid connections (for farms, and rural households and businesses).

1.10 Principles of the funding framework

The following describe the principles of the funding framework:

Least-cost funding

Optimised funding requires that electrification funding needs are optimally matched with suitable finance, in order to ensure maximum service delivery at minimum price. This means that the international stock of potential electrification funding is assessed alongside local resources and matched to electrification needs. As a result, local electrification funds are utilised alongside non-government local capital and government and non-government foreign capital in order to provide electrification services to the largest number of beneficiaries in the shortest time-period and at the lowest possible cost.

Maximised service delivery

It is broadly accepted that access to modern energy services is a pre-requisite to national development, to the long-term reduction in poverty and the amelioration of high degrees of inequality currently observed in Namibia. In order to resolve this issue, service delivery is to be prioritised over ownership, and in the interest of national development, regulation and funding should focus on embracing a diverse array of old and new approaches, including innovative funding and technology options.

Smart partnerships and private funding

To date, very little electrification in Namibia is achieved with private funds. However, while not all electrification is suitable for private funding, there are several areas and manners in which private capital can be utilised to speed up the implementation of the national electrification agenda. In such instances, private capital and private-sector involvement in electrification shall be embraced.

Design and targeting of cross-subsidies

Where cross-subsidies exist, these should not distort economic incentives to the detriment of economic and social development. This is to say that cross- subsidies should be carefully designed and targeted to be pro-poor and pro-production and pro-industrialisation, with surplus cost being carried by more price-inelastic (price insensitive) luxury consumption, and price-inelastic productive use. The approach to cross-subsidisation also needs to take cognisance that electricity consumers have emerging and unprecedented options to reduce their reliance on utility supplied electricity. This limits the scope for cross-subsidies since consumers with luxury consumption are also most able to invest in alternatives if these are cheaper, thereby avoiding the "tax" on luxury consumption.

Establish crowding-in mechanisms for private funding

In order to maximise the effectiveness of finite public funds, these funds should primarily be used to crowd-in additional funding. This crowding-in serves two purposes, firstly to de-risk projects; and secondly, to contribute to project capital costs to the point at which projects become viable for private, licensee and other funding. In so doing, the return on every dollar of public funds spent, in terms of scope of electrification achieved, is maximised.

Establish suitable entry points for non-governmental financing

Private and development finance can be harnessed to improve electrification outcomes at no additional cost to the Government through strategic utilisation of public funds. This funding will be introduced through various entry points, including direct funding to Government as budget support, indirect or co-funding through/with Government for specific projects, grant and debt funding to state-owned enterprises such as NamPower, grant and debt funding to regional and other distributors, and as grants, debt and/or equity for direct service provision to customers. However, the suitability of different entry points depends upon the capital provider's mandates, financial return expectations and the soundness of the financing counterparty.

2. Electrification Funding Needs

This chapter provides an overview of the funding needs to achieve Namibia's electrification objectives.

Table 1 identifies the entities and their estimated annual electrification investments benefitting electrification categories except the category A end-users, as are identified in Table 2.

Table 1: Estimated Current Annual Electrification Investments

Funding Entity	Estimated Typical Annual Amount [N$]
MME electrification budget (from annual budget allocations)	N$40 million
NamPower capital budget (from end-user tariffs)	N$35 million
NamPower EIB/SIDA funds (international grant funding)	N$10 million
Distribution licensees (from own funds, loans from the NEF and/or commercial bank loans; investments are recovered via end-user tariffs).	N$20 million
Total	**N$105 million**

Table 2 provides a summary of the different approaches to fund electrification undertakings per main electrification category as identified in the NELP.

Table 2: Electrification Funding Approaches by Electrification Category

Category	Characteristics	Funding Approach	Support Needed to Accelerate Electrification
A	Urban planned and serviced area, including areas that are designated for such development. Medium capital and low operating cost, medium to high household consumption in addition to some consumption by commercial and institutional customers [1].	Private developers, local authorities or REDs pre-fund such electrification activities, which are recovered via the sale of land. Purchasers of serviced land parcel(s) fund their acquisition by using own resources or via a commercial bank loan.	Enhancing the delivery of fully serviced land will accelerate access to electrification.

[1] Electricity services are usually provided by way of a connection to an underground distribution network. Such networks have a high cost per installed kilometre. However, taking the density of connections into account, and the low cost to operate such network infrastructure, the average cost per connection is medium.

Category	Characteristics	Funding Approach	Support Needed to Accelerate Electrification
B	Urban semi-formal area (often a low-income area). Low capital and operating cost; household consumption is mostly low, with limited commercial and/or institutional consumption [2].	Electrification activities are funded by licensees, mostly using own financial resources, allocations from the MURD and through loans from commercial banks and/or the NEF.	Access to grants and/or concessional loans are needed to accelerate such electrification undertakings.
C	Urban informal area (also referred to as peri-urban). No established capital cost model exists, household consumption is usually low or very low, due to the low income of end-users. In most cases, there is little formal commercial and/or institutional consumption of electricity.	Currently, such areas are mostly not electrified as a viable funding mechanism for such electrification undertakings does not exist. The status and legality of land tenure is often uncertain. Off-grid stand-alone supply systems may be an option provided a viable business model is applied.	New funding and implementation model are required. There exists scope for private investments in off-grid solutions, these could be funded by a combination of grants, concessional loans and commercial loans, but necessitates viable business models.
D	Village or settlement. Medium capital and medium operating cost due to overhead networks serving dispersed locations. Usually, household electricity consumption is low, while significant commercial and/or institutional consumption occurs.	The initial backbone grid network infrastructure is customarily funded by the Government as part of its rural electrification drive. Categories A to C may apply in this context.	Funding is needed to electrify villages and settlements. Scope for private investments using off-grid solutions exists, e.g., mini-grids, which could be funded by grants, concessional and commercial loans. Once electrified, categories A to C and E may apply.
E	Rural locality. High capital and high operating cost despite overhead networks due to a high dispersion of end-users per location. Typically, household electricity consumption is very low, and the commercial / institutional consumption is mostly low.	The initial backbone grid network infrastructure is customarily funded by the Government as part of its rural electrification drive. Additional house connections usually paid for by end-user. Licensee funding support may be available for additional house connections.	Funding is needed to electrify these localities. There exists scope for private investments using off-grid solutions, e.g., mini-grids. These could be funded by a combination of grants, concessional and commercial loans, but necessitates viable business models.

[2] Such electricity services are usually provided by way of a connection to an overhead low-cost distribution network. The capital expenditure requirements of such networks are much lower than their underground counterparts. In combination with a high density of connections, the average cost per household connection is usually low.

Category	Characteristics	Funding Approach	Support Needed to Accelerate Electrification
F	Rural stand-alone households, institutions, farms or businesses. No specific model for providing capital for electrification exists for these end-users, except for the SRF and private self-funding. Household consumption of electricity is usually low, and cash incomes are sporadic, especially in non-commercial-farming areas.	Some such supply systems are funded using an end-user's own financial resources, or through SRF loans or commercial bank loans.	Funding is needed to accelerate the electrification of these dispersed settings. Scope exists for private sector investments, offering off-grid solutions such as mini-grids or stand-alone power supply systems. These could be funded by a combination of grants, concessional and commercial loans, but necessitates viable business models.

Various studies estimated the funding requirements to undertake specific electrification activities, as summarised in Table 3, noting that most studies put forward their own specific access goals.

Table 3: Estimated Funding Requirement to undertake Household Electrification

Reference	Approach	Electrification Access Goal	Estimated Capital Investment Requirement [N$]	Estimated Number of Households to Reach Electrification Access Goal	Timeframe
REDMP (2010)	Grid	Rural: 37%	Rural: N$ 1.5 bn	60 000 rural households, based on a total of 231 000 rural households in 2010	20 years
National Electrification Support Mechanism (2015)	Grid	Urban: 100% Rural: 30% Overall: 70%	Urban: N$2.8 bn Rural: N$0.6 bn	Urban: 128 000 Rural: 33 000, based on an estimated 400 000 households for universal access by 2024	10 years
Scoping Study – Towards a 50% Electrification Rate in Namibia (2017)	Grid and off-grid	National: 50%	N$0.84 bn	Total: 31 000, based on an estimated 300 000 households for universal access by 2020	3 years
Draft Least-Cost Geospatial Electrification Plan (2020)	Grid and off-grid	National: 100%	N$7.5 bn	Total: 432 000 to-be-electrified households by 2030	10 years

Table 3 illustrates that universal access to electricity necessitates at least N$7.5 billion by 2030 [3]. This implies an average capital expenditure of some N$750 million per year, i.e., more than seven times the current annual investment of all parties engaged in electrification, as shown in Table 1.

[3] It is noted that the estimate provided in the Draft Least-Cost Geospatial Electrification Plan (2020) is likely to be overoptimistic as the assumed average cost per connection is considerably below other contemporary estimates.

3. Funding Considerations

3.1 Background

Electrification funding has two parts, namely capital investments and operational funds. To date, the conventional method of providing national electrification in Namibia has been via a connection to the national grid, with capital provided by several channels as listed in Table 1. However, the process of rolling out electrification on a large scale has been hampered by insufficient funding and cashflow challenges. As a result, a new, expanded and more efficient approach to electrification funding is required.

Responsibility for National Electrification

Electrification is a national imperative to support the development of the country. In principle it is thus the primary responsibility of Government to promote and source funding for electrification, as anchored in the custodianship identified above, and not the primary responsibility of the electricity supply industry or the electricity utilities.

In line with existing national policies, Namibian electricity utilities are operated and regulated as self-sustaining commercial entities. This means that infrastructure funded by the licensees needs to be commercially viable so that their goal of self-sustainability is achieved. This in turn means that they have limited capacity to fund electrification projects that are often not commercially viable, and that they cannot bear primary responsibility for funding electrification without an impact on electricity tariffs.

Therefore, implementing large scale accelerated electrification of low income and rural households requires the provision of funding that will not have to be repaid by licensees on commercial terms. In this way, such electrification efforts can therefore be accommodated within the existing pricing model without significant impacts on end-user tariffs which are already considered to be high and face competition from alternative forms of supply.

Regulatory Approach in Namibia's Electricity Industry

Electricity distribution licensees are regulated on a "cost-plus-return" basis, i.e., their tariffs are determined by allowing prudent costs plus a regulated return on assets funded by the licensee (referred to as the "revenue requirement"). Licensees are expected to fund infrastructure investments using a combination of accumulated funds and loans.

Electricity sales based on cost-reflective tariffs allow the licensee to recover the cost of these investments through allocations for depreciation of the assets (recovering the capital cost) and a regulated return on assets funded by the licensee (covering the funding cost, be it equity or loans). This means that new assets funded by the licensee result in an increase in revenue requirement. If the new assets result in an increase in revenue from sales to new customers that is proportional to the additional cost, then there does not need to be an increase in the overall electricity price paid by consumers. If the new assets do not result in a proportional increase in sales (as is usually the case for rural or low-income electrification) then the overall price to some or all consumers must be increased to cover the increased costs. The same applies to operating costs which also increase when assets and customers are added.

The base principle applied to tariff design is that of cost-reflective tariffs, which applies both to the overall price of electricity (i.e., the licensee should recover all prudent costs plus the return on assets from its tariff revenue) as well as to the structuring of tariffs in distinct charges and the level of tariffs charged to different customer categories based on their individual demand and affordability characteristics. While most licensees are close to or at overall cost reflectivity (i.e., their overall tariff revenue meets the approved costs plus returns), there remains work to be done in terms of the structures and levels of tariffs charged to customer groups, as was shown in the ECB's 2019 National Electricity Distribution Tariff Study.

While this regulatory model is well established and has produced good results in terms of the sustainability of licensees, the impacts of accelerated electrification on the licensees' costs and their tariffs must be proactively managed to avoid undesirable tariff escalations and/or undermining the viability of licensees.

Pricing

As many Namibian households are located away from the national grid, they have not benefitted from national electrification projects undertaken in the past. Moreover, many rural households do not have the cash incomes required to pay for electricity consumption at commercial rates, even at low consumption levels. As a result, an economically sound cross-subsidisation policy, as articulated in the NEST mechanism, is needed to ensure wide household-level access to electricity at affordable prices for necessity-level. Furthermore, a similar policy is needed for productive uses, as well as for commercially competitive prices for industrial users to ensure global competitiveness for Namibian products.

Any funding and/or subsidies benefiting electricity users or groups of users should focus on supporting low-income consumers as well as the productive uses of electricity in areas where the full cost of electricity supply cannot be borne by the consumers.

Cashflow challenges

The provision of affordable electricity consists of two core components: firstly, connectivity (i.e., the installation of infrastructure), which requires capital expenditure; and secondly, the provision of and payment for electricity services using the installed infrastructure.

The initial cashflow implications of providing access to electricity are negative, meaning there is an upfront outlay of capital in order to provide access to electrification. In some instances, this cashflow can be recovered through the sale of electricity units and/or services; however, this is not true in all instances. The degree to which costs can be recovered, and the potential loss or return generated from the capital investment, plays a vital role in determining the best possible funding option for every electrification project.

The funding flows required to achieve the objectives of national electrification are substantial. While some of the funds invested can be recuperated via the provision of paid-for electricity services, the development nature of electrification suggests that certain electrification will be unavoidably cash negative and are therefore considered non-viable. However, the socio-economic benefits of such projects remain, meaning that funding electrification remains a national priority even if individual projects are considered commercially non-viable.

Risks

Inherently, there is a trade-off between risk and return when investments are considered. For many electrification-related projects, financial returns are not commercially viable. However, this could be due to intrinsic beneficiary usage and thus cashflow, or due to elevated capital costs due to client nature and risk, or even, normal capital costs. In certain instances, de-risking a project can cause capital costs to fall to a point at which an otherwise not-viable electrification project becomes viable. In these instances, Government Support Mechanisms (GSMs) (either from the later discussed electrification fund or Government) may present the most economical electrification enabling mechanisms available to the Government.

3.2 Development objectives vis-à-vis development finance

The specific development objectives pertaining to national electrification are expressed in the National Electrification Policy of 2021. While core electrification objectives are either direct development objectives, or a prerequisite for other developmental objectives, the funding required for electrification need not be development-related funding per se, and the objectives may indeed be better secured with a combination of funding from licensee, public, development and non-development, i.e., commercial, funding.

In view of the development objectives and the critical nature of electrification for development, ownership of infrastructure and clients is viewed as less important than sustainable long-term service delivery. With service delivery being of primary importance, a blended funding mix can ensure that services are provided to the broadest scope of people at the lowest possible cost in the shortest possible time. On the other hand, ownership as a primary issue and service delivery as a secondary issue would result in heavy reliance on finite public funds, a sub-optimal funding mix, limited capacity to provide services in a reasonable period and ultimately, sub-optimal development outcomes.

A similar consideration is warranted with regards to cross-subsidisation as a funding strategy. While cross-subsidisation is a useful tool in the provision of affordable energy to households and businesses, it is, in and of itself, insufficient to address the overarching funding requirement for universal electrification in Namibia, as is further discussed in chapter 4.

3.3 Project funding considerations

The nature of funding required per component of the electrification challenge depends heavily on what the component is, where it is located and who the end user is. In this regard the short summary below explains the different funding considerations of projects or sub-projects. These options create the framework that informs the most suitable funding mix per project or sub-project with regards to electrification.

There are three typical types of projects:

1. **Public projects** (typical public goods): These are non-self-funding projects, where economic returns are greater than financial costs, yet financial returns are either non-existent or substantially below the financial return hurdle commensurate with the project risk. These projects will only be undertaken by a government or a quasi-public entity (usually backed by government). Should Government not undertake or support such projects they will not happen.
2. **Commercial projects**: These are projects that are self-funding, which is to say that they are cashflow generative, with an ability to service or repay project debt as required, and still generate an adequate equity return to incentivise investment through risk-weighted returns commensurate with those required by private financiers. These projects exhibit financial returns in excess of financial costs.

3. **Intermediate projects:** These are projects that are not conventional public nor self-financing projects, but somewhere in between. Their economic benefit is greater than financial costs, but financial benefit is below financial cost. However, these projects are cashflow generative, and able to generate some return, albeit insufficient to meet risk-adjusted return requirements of financiers. Thus, these projects will often seek some input from Government, either to reduce financial cost to financiers through, for example, Government grants, or to reduce project risk through various forms of GSMs.

Given the finite nature of public funding, as well as the cashflow implications of electrification which often results in material negative cashflow for an extended period, private sector funding, through various forms of patient capital, can alleviate this burden from Government and other stakeholders.

An optimisation of capital allocation, in effect saving public funds for where they are most needed (i.e., where private capital will not participate) and for where they can play a catalytic role in "crowding-in" private finance, will ensure the maximum service delivery for minimum public fund utilisation.

Table 4: Summary overview of projects with different social/economic and financial returns

Social* ▷ // Financial ▽	**Low Social Return ▷ High Social Return**		
Low Financial Return ▽ High Financial Return	*Project or component generates a **low financial** and **low social** return* Neither private not public capital should be used to fund these projects.	*Project or component generates a **low financial** and **moderate social** return* Private capital is unlikely to fund these projects directly, however public funding may be warranted due to moderate social returns.	*Project or component generates a **low financial** but **high social** return* Private capital is unlikely to fund these projects directly. Public capital should be utilized to fund projects directly, or to crowd-in private capital. Example: rural electrification of households
	*Project or component generates a **moderate financial** and **low social** return* Private capital may wish to fund these projects. No public support should be provided to make projects more viable due to low social return.	*Project or component generates a **moderate financial** and **moderate social** return* Private capital may wish to fund these projects. Public support or collaboration may be considered to make projects more viable due to moderate social return.	*Project or component generates a **moderate financial** and **high social** return* Private capital may wish to fund these projects. Public support or collaboration should be implemented to make projects more viable and crowd in investment. Example: Electrification of a mix of household and business users
	*Project or component generates a **high financial** but **low social** return* Private capital will likely fund these projects, no public capital, and no guarantees should be required to ensure investment takes place. Low multiplier effect but potential for cross-subsidization/taxes. Example: bottle store	*Project or component generates a **high financial** and **moderate social** return* Private capital will likely fund these projects, no public capital, guarantees should be required to ensure investment takes place. Moderate multiplier effects and potential for cross-subsidisation/taxes.	*Project or component generates a **high financia**l and **high social** return* Private capital will likely fund these projects, no public capital, guarantees should be required to ensure investment takes place. Moderate multiplier effects and high potential for cross-subsidization/taxes.

*The term “social return” is, in this context, interchangeably with “economic return”.

3.4 Aligning financing with customer needs

Depending on the nature of electrification, the funding utilised should be matched with the consumer profile. This is to say that while public funds could be used for any type of electrification, private and development funds have certain limitations. Thus, utilising finite public funds where private funds could be utilised, may lead to a situation where non-commercially viable customers are left unserved as finite public funds have been exhausted elsewhere.

Based on the above, funding utilisation should be considered along the below lines:

1. **Maximising sustainable tax/cross-subsidy revenue**

   Projects that can be privately financed without any public funds should not utilise any public funds. By nature, these would be projects with internal rates of return that exceed the weighted average cost of capital. Where possible, and where the customer type and energy use align to the current NEST and any future tariff subsidy model, taxes or surcharges should be charged to the consumer and/or service provider to provide funds for cross-subsidisation of operational expenses or for new capital investment by the state or its actors. This model is suitable for commercially viable projects with surplus profit.

2. **Covering operational costs and repaying capital cost**

   Projects that can be privately financed without any public funds should not utilise any public funds. Where it is not possible or where the customer type and energy use does not align to the current NEST and any future tariff subsidy model, no taxes or surcharges should be charged to the consumer and/or service provider. This model is suitable for marginal projects with economic profit only.

3. **Covering operational costs and subsidising capital costs**

   Projects that can be most efficiently constructed and/or operated by private operators (in Namibia's case, usually off-grid projects), but where the repayment on that investment is not possible from the consumer alone, due to client type and energy use profile, should consider a blended funding model using a Public-Private-Partnership (PPP) model or independent of it, government guarantees or suitable form of GSMs. These options, at a high level, are most suitable for projects that generate some cashflow from paid-for energy services, but not sufficient cashflow to cover the capital cost of the capital invested.

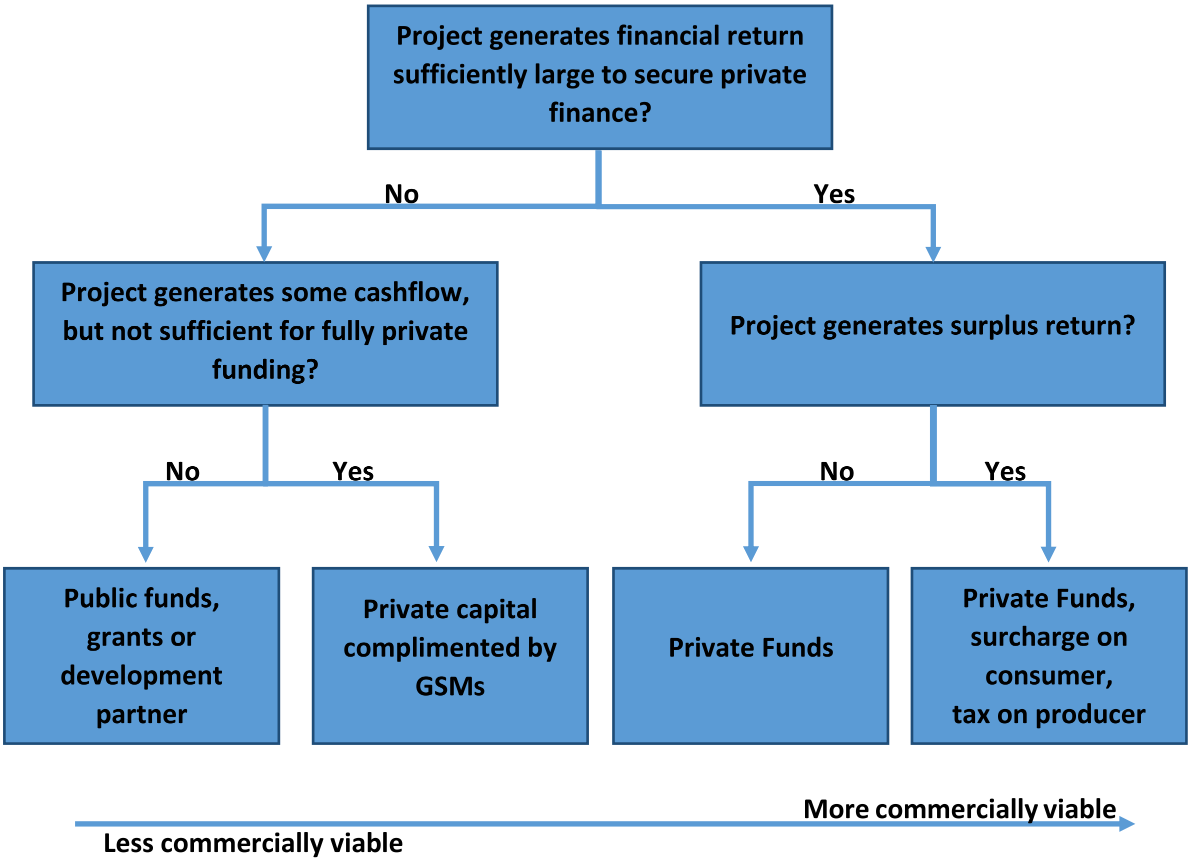
4. **Minimising operational losses and subsidising capital costs**

   Projects where there is very little or no in-coming cashflow are not suitable for private finance, and these projects should be provided for through the national budget, development partners and grants. The funds required for these investments will likely be raised through specific and general taxes, while operational costs could be cross subsidised through the tariff mechanism.

Combining projects from different categories listed above has the potential to move a project from category 4 to a category 3 or 2. This is part of the fundamental philosophy behind the REDs industry model adopted by the Government and leveraging this model may assist in making projects more fundable and sustainable through economies of scale and the combination of different project types.

Figure 1 illustrates the decision-process by which to decide on how best to fund projects of different commercial viability.

Figure 1: Potential sources of finance for projects of various commercial viability



4. Cross-subsidisation

4.1 Introduction

Cross-subsidies are a well-known and frequently applied instrument used in the design of electricity rates and charges. The use of cross-subsidies implies that one or several customer types pay an additional charge which is added to their tariffs, the revenues of which are then used to lower the prices of other end-user groups. Raising subsidies therefore increases the price of electricity for some, while making them available in the form of cross-subsidies lowers the price of electricity for other end-users. A cross-subsidy is a distortion of the price of electricity. To be effective, they must be narrowly focused on those from whom subsidies are raised and those to whom they flow to minimise undesirable price distortions.

Generally, one distinguishes between explicit (direct) and implicit (indirect) cross-subsidies. Explicit cross-subsidies are those that are charged to one or several customer groups and used to reduce charges of other end-users. Implicit cross-subsidies are those that arise due to factors such as higher end-user densities (which imply a lower cost of service per connection and therefore increases average revenues in such areas), the use of cost-effective technologies in one area versus the less-effective technologies in other areas (which implies that areas served with optimised technologies may generate more revenues per unit connection cost than those in other areas).

Cross-subsidies are best designed to meet specific objectives. To illustrate, these can be informed by socio-economic considerations, whereby end-users who are relatively insensitive to the price of electricity can be levied additional charges, which can be transferred to other end-users who are price sensitive, such as low-income electricity consumers. Another objective used in the design of tariff may include the levelling of the playing field of grid- and off-grid technologies, for example where some revenues generated through the sale of electricity delivered by way of an established grid network is used to reduce the cost of supplying end-users who are provided for by way of off-grid electricity.

Economically, the use of cross-subsidies remains contentious. Cross-subsidies may lead to welfare losses, as are expected to occur when customers in densely populated areas generate a subsidy that benefits those in sparsely populated areas. In such a context, a re-distribution of funds occurs within the same system (e.g., a specific RED), which is economically less efficient than it would be if subsidies were to be generated and redistributed at a national level, as could be done by the Government through the budget (i.e., paid for from the country's total tax income). For decades, Namibia's electricity distribution industry has used subsidies, whereby these are generated and re-distributed within one and the same distribution area, without benefitting from external funds to achieve specific subsidisation outcomes.

4.2 Explicit cross-subsidies in Namibia's electricity industry

The National Electricity Distribution Tariff Study of 2018/19 illustrated that an estimated N$ 700 million per year flow from general and institutional electricity consumers to household end-users. Household electricity consumers benefitted from such subsidy flows regardless of whether they were considered as high or low-income end-users. In this way, general and institutional end-users have shielded household electricity users from the actual un-subsidised price of electricity.

The flow of these subsidies has evolved over many years. In most instances, the escalation of prices for some customer categories and the associated buy-down of electricity prices for other end-users has been left to develop in a largely un-coordinated manner.

In contrast to such licensee-specific cross-subsidies, the ECB developed the National Electricity Support Tariff (NEST) Mechanism which the ECB is to roll out during 2021. The NEST is to benefit low-consuming households served by a low capacity (15 Ampère) connection. The mechanism is based on an inclining block tariff, where its first block recovers the cost of generation, while its second block recovers NamPower's bulk cost of supply. Approved by Cabinet, the subsidy required for the implementation of the NEST is raised from all electricity consumers except direct beneficiaries, through a separate NEST levy.

4.3 Implicit cross-subsidies in Namibia's electricity industry

Implicit cross-subsidies are those that may exist because specific supply characteristics in one area may differ from those in other areas, leading to higher/lower average revenues and costs per connection. For example, implicit cross-subsidies are likely to exist between high-density and low-density supply areas. This is because the average cost per connection arising from the operation and management of networks in a high-density setting (e.g., a town) is lower than those in a low-density setting, e.g., a rural area.

To date, the extent of such cross-subsidies can be inferred but has not been determined nor can it be readily quantified. To illustrate, while the distance per average grid connection in urban areas is much lower than that in rural areas, underground network infrastructure is often used in urban environments which are an order of magnitude more expensive to install compared to the relatively low-cost overhead network technologies used in rural areas. To some extent, this factor compensates for the longer networks used in rural areas. Exceptions include farm networks with a much higher cost per connection than urban or rural village connections due to the dispersed nature of settlements on farms in Namibia.

Historically, a key reason to establish Regional Electricity Distributors (REDs) was that such entities would serve a combination of urban and rural areas. This creates economies of scale which in turn enhances their viability, while the mixed customer base holds the potential for cross-subsidies. Specifically, income generated in urban areas (having business customers and lower operating cost) could potentially be used to improve the viability of providing services in rural areas. It is noted that rural networks operated by regional councils require both a capital as well as an operational subsidy (both from the Government) as they cannot be sustained on their own.

In future, implicit cross-subsidies could assist Namibia's EDI to also provide off-grid electricity services. This has been trialled with the mini-grids at Tsumkwe and Gam, which today benefit from CENORED's operational support and access to the utility's pool of cross-subsidies.

4.4 Conclusions

The use of existing explicit cross-subsidies has considerable limitations and drawbacks, and their potential for further expansion is neither considered significant nor realistic. An exception is the envisaged NEST levy, which is to apply to all electricity consumers except those benefitting from this support tariff. The NEST will enable low-income households to consume subsidised electricity (for essential use), and in this way, contribute to the alleviation of poverty, which is a national development imperative.

However, explicit cross-subsidies generated in supply areas are unlikely to raise the funding required to accelerate national electrification efforts, except possibly in select urban supply areas such as the City of Windhoek. This implies that funding arrangements other than cross-subsidies must be found to finance the achievement of universal access to electricity. This document introduces multiple potential funding sources to support Namibian electrification without relying on cross-subsidies applied in the country's electricity industry today.

The main application of explicit and implicit cross-subsidies, including the NEST mechanism, thus remains the balancing of operational costs between different customer categories within a given electricity distributor's area of responsibility, as practiced as part of Namibia's REDs industry structure model.

5. The Electrification Funding Portfolio

This chapter identifies potential funding sources to support Namibia's ambition to reach universal access to electricity and provides a brief discussion of their characteristics and the main disbursement entities.

5.1 Introduction

As expressed in the National Energy Policy of 2017 and the National Electrification Policy of 2021, Namibia aims to achieve universal access to electricity. This is an ambitious goal which is part of the country's wider development objectives. However, progress towards universal access remains slow, which is – in part – due to ongoing funding constraints.

In the recent past, such funding constraints were mainly experienced because the Government is seen to be the primary source of funding. In addition, many electrification projects are not financially viable on a stand-alone basis or have extended pay-back periods. Such constraints imply that entities undertaking electrification efforts must be able to fund upfront capital costs of infrastructure installation and be able to continue operations for an extended period before such capital is recouped, while having to support such projects in terms of their operational requirements. This implies that most electrification projects cause net cash outflows, often for a considerable period, which burden an entity's cashflows and constrain their capacity to invest in electrification. Such cashflow constraints, coupled with a finite pool of public capital, have contributed to slower-than-intended attainment of past electrification objectives.

However, funding constraints could be alleviated through an **Electrification Funding Portfolio**, to optimise the availability of funding earmarked for future electrification efforts. Such an **Electrification Funding Portfolio** is to broaden the sources of funding through two primary approaches, namely

1. by increasing the volume of funding available for electrification projects through the "crowding-in "[4] of private capital, concessional and development funding, as well as grants; and
2. by optimising the funding mix, structuring and syndicating funding and leveraging current public and other funding to extend its effectiveness.

The further subsections of this chapter elaborate the **Electrification Funding Portfolio**, which is to be implemented through the **Electrification Fund** which is described in the next chapter.

5.2 Purpose

The Electrification Funding Portfolio showcases the types of funding sources that are to be utilised to fund Namibia's electrification undertakings and identifies the potential contributors that may become involved in providing funding for such endeavours in future.

[4] Crowding-in occurs when government spending leads to an increase in third-party or private sector investment. The crowding-in effect occurs because the Government de-risks, creates economies of scale for, or supports, project or economic activities.

5.3 Funding types

Table 5 identifies the principal funding types that may potentially contribute to fund Namibia's electrification undertakings. The table also provides a summary of the key characteristics of such funding, and the entities that would likely be involved in their disbursement. Usually, project-specific considerations determine if and to what degree the various funding types are employed to best meet the requirements of a given project or electrification undertaking.

Table 5: Funding types, their key characteristics and associated disbursement entities

Funding Type	Key Characteristics	Disbursement Entities
Distribution licensees	• Licensees can fund electrification from their capital budget which may include raising commercial financing. • Under the present regulatory and policy framework such funding is ultimately paid for the electricity end-user and impacts electricity tariffs, thus limiting its scope. • Licensee capital budget funding is normally limited to assets that will be owned by the licensee.	• Distribution licensee capital budgets
Government	• Government funding can take many forms, including many of those mentioned below. Most commonly, Government funding has grant-like characteristics. • Government funding tends to be deployed where private investment does not naturally occur, for example as a result of financial returns on investment being below risk-thresholds. • Government may deploy capital without seeking a direct financial return and is more likely to target investments with net-positive economic (social) benefits than financial return.	• Central Government • State Owned Enterprises • Local Government • Regional Government • Development Finance Institutions (DFIs)
Development Finance Institution (DFI) Debt	• DFIs, usually owned by governments or charitable institutions, provide debt, equity and other financial resources to economic development projects in a country / region. • Obtaining DFI financing is usually a lengthy process, and often requires the borrowing entity to provide supporting information to show that a given project is viable. • A further drawback of this type of financing is that the DFI may place certain restrictions on the	• Development Bank of Namibia • African Development Bank • Development Bank of Southern Africa • Other international DFIs

Funding Type	Key Characteristics	Disbursement Entities
	borrowing entity and may impose monitoring and compliance requirements. • Extending financing for development projects are much higher risk, as there is not guarantee that the project will be a success. However, DFIs often extend funding to entities that are unable to obtain financing from commercial banks. Usually, this funding can be structured to accommodate specific project requirements.	
Commercial Debt	• Commercial debt financing takes place either through the issuing of a bond or taking out a loan, to raise capital for a specific purpose. The capital amount and interest thereon must be repaid to the lender, generally within a specified time period. The lender does not acquire any shares or interest in the borrowing entity. • Certain activities of a borrowing entity may be restricted when acquiring debt financing, e.g., that it cannot make distributions to shareholders before the full loan amount has been repaid. • There are several advantages linked to debt financing, including that interest paid on a loan is tax deductible, and once the loan is repaid, the borrowing entity has no relationship with the lender.	• Local banks • International financial institutions • Debt funds • Private investors • Development banks
Quasi-equity	• Quasi-equity financing is a hybrid of debt and equity financing that gives the issuer a combination of equity and debt like returns and risk profiles. This may include the right to convert to an equity interest in the borrowing entity in the event of default. This is usually subordinate to debt provided by senior lenders such as banks. • The shareholders of the borrowing entity may lose some control over it, for example when the lender acquires shareholding because debt cannot be repaid or exercises its option to acquire equity in the entity. This type of funding can place restrictive covenants on the borrowing entity, e.g., as unsecured debt at higher interest rates. • Flexibility is one of the biggest benefits of quasi-equity financing. The debt can easily be	• Local banks • International banks • Debt funds • Private Investors • Development banks

Funding Type	Key Characteristics	Disbursement Entities
	structured and customized for the specific cash flow needs of the borrowing entity. Usually, one can also loan much higher amounts than with a standard loan.	
Equity	• Equity financing is when an investor provides capital to an entity in exchange for shareholding in that entity. • A disadvantage of equity financing is that the investor will share in the profits and must be included in the decision-making of the entity. It is therefore important to get an investor who agrees with the goals of the entity, as the investor may act contrary to the entity's interests, which can lead to its downfall. The only way to remove an investor is to buy him out, which can be expensive if the share price has increased. • However, an investor who agrees with the objectives of the entity and can deliver a positive contribution will be one of the best financing options as there is no obligation to repay the funds received from an investor, which leaves more capital to invest in the entity.	• Local companies • Foreign companies • Venture Capital funds • Private Equity funds • Private Investors
Grants	• Grants are funds that are provided to projects or entities without expectation of payment of interest or repayment of principal, nor shareholding. • Grant funding can, however, be administratively intensive. The application process is often tedious and uncertain. Also, most grants are subject to stringent monitoring and compliance requirements. • Grants do not have to be repaid. In most cases, the only return that an investor requires relate to improved social or environmental circumstances, making this an attractive funding option, where available.	• Local government • Bilateral institutions • Development institutions • Charities • Foundations • Donors

5.4 Potential funding entities

A variety of public and quasi-public institutions provide funding aimed at enhancing the broader public good. They include various international funding institutions, DFIs, regional and local financial institutions, export credit agencies, climate finance institutions and others. Climate finance institutions include international climate funds and intermediary institutions that make available public funds raised in industrialised countries to address climate-relevant projects in developing economies. DFIs are often used as conduit and implementing partner for climate-related funds, and in this way provide climate funds to emerging country beneficiaries.

Traditionally, public funding provided grants and concessional loans to fund projects. In more recent times there is an additional focus on using such funds to leverage private capital rather than for direct financing only. As electricity-related projects in regulated markets (as is the case for Namibia) will generate steady revenues to repay the costs, broadening the provision of finance to beyond grants and loans to include guarantees, derivative instruments, liquidity facilities and others provides new avenues to overcome the traditional private sector investment challenges.

Annexure A provides an overview of select potential funding entities that may contribute to fund Namibia's future electrification undertakings, and their key characteristics.

5.5 Summary

Namibia's electrification constraints are, to a large degree, related to the availability of capital required to undertake electrification projects. This is because many of these projects are not commercially viable on a standalone basis, and thus heavily dependent on non-commercial capital such as public funds, grants and/or cross-subsidies, for their undertaking. At the same time, Namibian public funds are finite and required for a multiplicity of purposes. Cross-subsidies face similar constraints, whereby if not strategically applied, they can cause material market distortions, and may become positively counterproductive. As a result, only a very finite cross-subsidy income can be generated for electrification without creating a raft of unintended consequences and economic distortions.

While constraints as to public and cross-subsidisation funds delay electrification progress, there are a plethora of global concessional funding options, as well as commercial funding options, that could be applied to expedite the local electrification drive. However, vehicles to capture and exploit these global funds are not yet established, meaning these funds are not yet being utilised at all, or to their full potential. The following chapter details the establishment of an electrification fund that would ameliorate this challenge, ultimately embracing the girth of available funding to expedite the nation's electrification, and thereby ultimately contribute to its development.

6. The Electrification Fund

6.1 Introduction

The Electrification Funding Portfolio introduced in the previous chapter includes several distinct funding types as well as potential sources of funding that may be employed to contribute to Namibia's electrification undertakings. The Portfolio is therefore a critical pre-requisite to fill the funding gaps that prevent or delay current electrification efforts.

The Electrification Funding Portfolio requires an instrument that draws on the information provided in the Portfolio to channel it into electrification projects. This instrument is the proposed **Electrification Fund**, which is introduced in this chapter.

6.2 Introduction to the Electrification Fund

Purpose

The purpose of the Electrification Fund is to:

- aggregate regular electrification funding contributions from the Government, state-owned enterprises, and, if applicable, end-user levies;
- attract private capital into the country's electrification efforts by offering co-funding for private-led electrification efforts (expected to focus on but not necessarily be limited to off-grid electrification);
- capitalise on global development, DFI and climate-related financing;
- maximise and encourage licensee electrification investments by providing co-funding that brings project costs to terms that are commercially acceptable (expected to focus on but not be limited to grid electrification); and
- optimise the return, in terms of electrified households, per dollar of public funds spent.

Objectives

The Electrification Fund's purpose is to aggregate funding from Government, state-owned enterprises, and, if applicable, end-user levies under a single umbrella, and to develop sub-funds, lines of credit and other commitments (collectively referred to as "the Fund" or the "Electrification Fund" hereafter) from a variety of sources, including DFIs, private capital, electrification end-users and others, and to provide a single point of access to the said funds for those undertaking electrification activities. The Fund is to actively engage relevant Government OMAs as well as other potential funders to seek and secure additional funding for electrification in Namibia.

The Fund is to provide least-cost blended funding that is specifically and singularly earmarked for electrification activities by state-owned entities, licensed electricity distributors as well as future private sector actors in Namibia.

The Fund must be credibly, professionally and transparently managed to assure both contributors and beneficiaries that all funds are accounted for, used for the intended purposes in line Government policies and plans and that it constitutes a funding vehicle that can be relied on by all relevant stakeholders.

Ownership

The Electrification Fund shall be owned by the Government under the custodianship of the Ministry of Mines and Energy, and the entity that houses the Fund. The Fund will be operated and managed to the benefit of all electrification stakeholders. The Fund is to be fully ring-fenced from the Government's financial allocations and controls and operated in the form of a single-purpose, professionally managed financing vehicle.

Governance and Management

In order to ensure that the Electrification Fund can raise capital from various sources at concessionary rates for an extended period, the Fund will follow the highest corporate governance standards and will be managed by a suitable independent fund manager.

The governance structure of the Fund is of vital importance to ensure its credibility, and to attract third-party funding. The governance of the Fund must therefore fulfil the following requirements:

- The separation of powers
- Strong checks and balances
- Independent oversight [5]
- Well established, documented, diligent and adhered-to processes
- Appointment of suitable financial expertise
- Appointment of suitable technical expertise
- The highest financial reporting standards
- The highest reporting and record keeping standards
- Transparency
- Diligent risk management
- Unfettered stakeholder representation

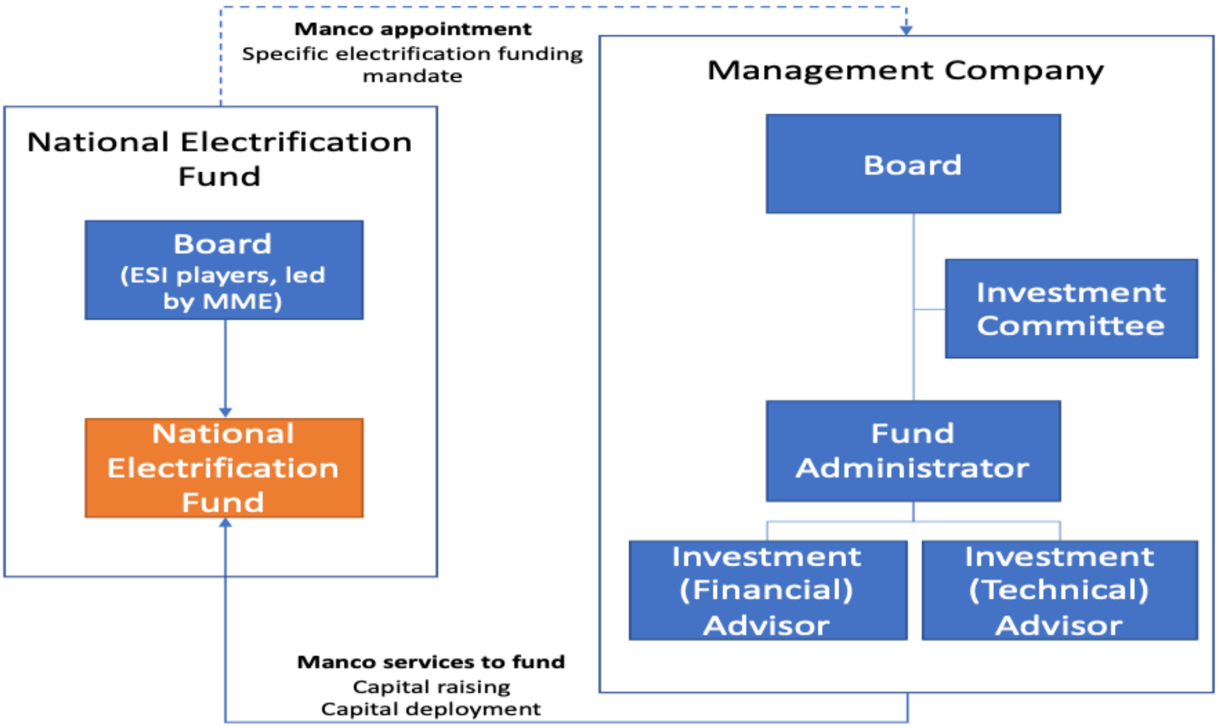
[5] Excluding regulatory oversight.

6.3 Establishing the Electrification Fund

Structure of the Fund

Figure 2 illustrates the envisaged structure of the Electrification Fund. The Fund is governed by a Board of Directors who appoints a management company ("Manco") to administer capital raising and deployment on behalf of the Fund. The Board[6] determines the mandate of the appointed management company and provides strategic direction in compliance with Government policies and plans (specifically the NELP and NEMP), governance and oversight to the appointed management company. The appointed management company implements the mandate provided by the Fund's Board and provides regular updates and feedback to the Board.

Figure 2: Governance and management structure of the Electrification Fund



Within the management company, the Board will have final sign off on all disbursements. The Board is supported by an Investment Committee, who may co-opt technical and finance professionals from across the stakeholder base, to review the Fund Administrator's submissions and ensure their suitability for funding, following rigorous stress-testing.

The Fund Administrator actively engages with existing and potential funding sources to seek and secure additional funding for electrification. In addition, it administers all disbursements by the Fund, and ensures that these meet the guidelines of the Fund. The Administrator regularly engages with all ESI players for the identification of projects to be funded (in line with priorities identified in the NEMP

[6] If housed in an existing entity then the Board referred to here is the existing board of the entity, which may be augmented with co-opted additional members when matters relating to the Electrification Fund are deliberated.

and in accordance with electrification obligations included in the entity's licence conditions), their funding needs and the appropriate implementation models.

The Administrator furthermore organises Board and Investment Committee meetings and coordinates the activities of the financial and technical advisors, who prepare the technical, financial and due diligence assessments, and proposals for review by the Investment Committee.

Given the technical complexity of electrification, combined with the financial complexity of ensuring that the Fund provides maximum electrification benefits for minimum public dollars spent, it is important that the Fund Administrator employs the requisite skillsets.

Potential specialised funds

In order to secure funding, credit lines or other commitments from specialist financiers, particularly those with specialised mandates (for example the Green Climate Fund), the Electrification Fund would need to accommodate sub-funds, and thus take a "fund-of-funds", or core and satellite structure.

The fund-of-funds structure (see *Figure 3*) entails a parent fund with an overarching mandate (e.g., electrification) and one or more subsidiary funds with specialised mandates (e.g., electrification via green technology; electrification with a greater than 5% return etc.).

A core and satellite approach (see *Figure 4*) would allow for a fund with an overarching mandate (the core), that co-invests with satellite funds specifically created for electrification and similar activities by specialist financiers that wish to maintain full control of their funds until drawdown.

These structures are not mutually exclusive and would allow for blending of funding types in the core fund, or at project level, as suitable on a case-by-case basis. It is envisaged that both sub-funds and/or satellite funds will be established as additions to the core fund over time, and thus that these should be catered for in the initial core fund development.

These specialist funds can be formed with the same management structure as the overarching fund (as per Figure 2) and can be represented by the same (or different) board members, with complimentary specialist skills added where needed. Further, the capital deployment (and capital raising) functions of these funds can be outsourced to the same management company, under suitably modified management agreements to cater for the specific mandate requirements of the funders.

Figure 3: Fund-of-funds structure

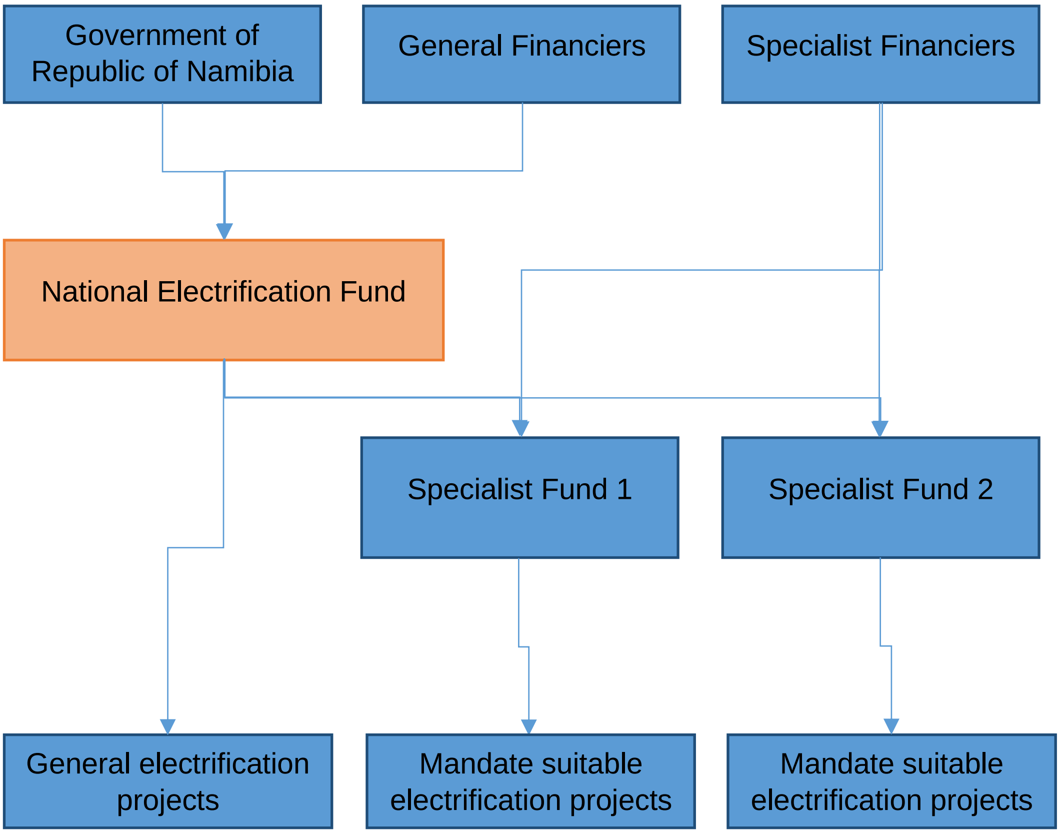
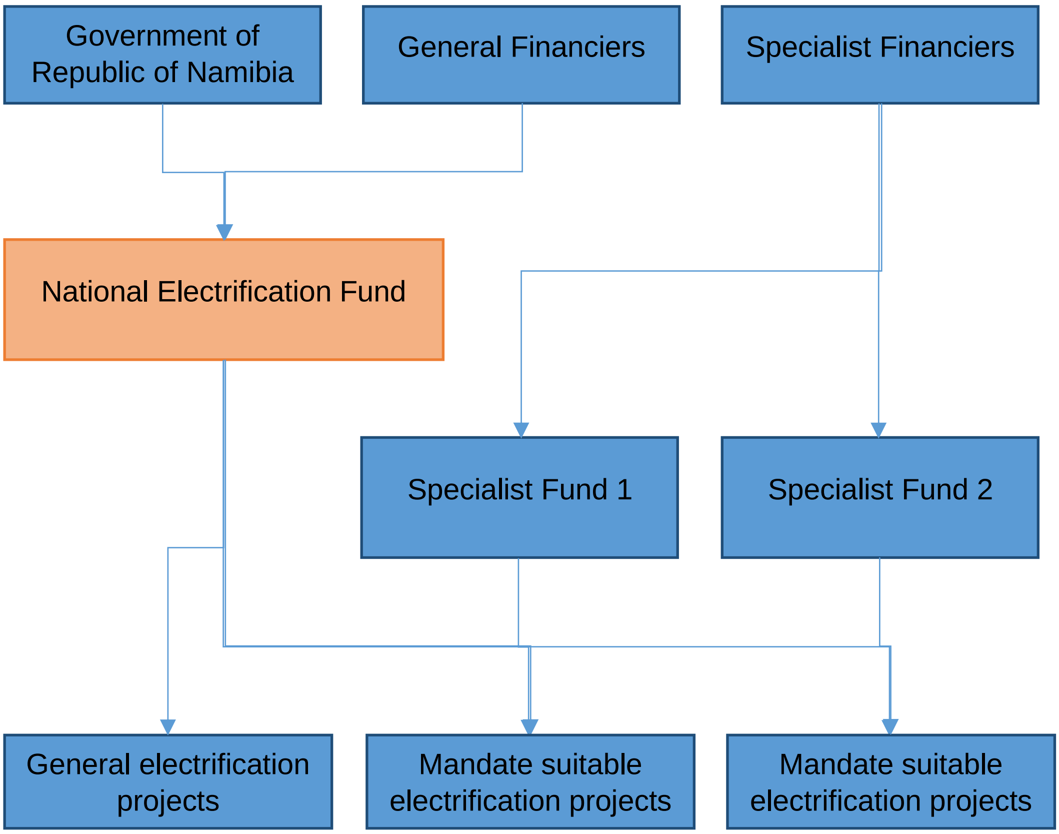


Figure 4: Core and satellite fund structure



Management Company

While the Fund may be established as a new entity, the appointed Fund management company should be a suitable existing entity, if possible, rather than establishing an entirely new vehicle. In this way, the Fund is to be a separate ring-fenced entity, served by an established management company, which has benefits regarding

- its cost structure;
- the speed at which it can be established and be operationalised;
- the percentage of capital that can be employed into electrification efforts;
- the credibility associated with being managed under an established entity;
- an existing balance sheet in the overarching entities to leverage funding; and
- minimising the investments into the establishment of processes to become operational.

An entity that qualifies to manage the Electrification Fund must have established credibility, both locally and internationally, ideally have an extended track record of financial management, and boast a strong balance sheet. In addition, in order to attract development finance and development partner support and grants, it is advisable that the fund follows a cost recovery and not-for-profit model and is managed by a State-Owned Enterprise or quasi-Government entity. Table 6 identifies some potential entities to manage the Fund and summarises the pros and cons.

Table 6: Potential entities to house the Electrification Fund

Institution	Pro's	Con's
Development Bank of Namibia	• Strong balance sheet • Specialist financiers • Extensive existing investment structures, systems and associated infrastructure • Existing ring-fenced third-party funding	• Limited electrification-specific in-house expertise
Environmental Investment Fund	• Specialist financiers • Access to and accredited to international funds, e.g., the Green Climate Fund • Existing investment structures, systems and infrastructure	• Smaller balance sheet • Limited specific electrification expertise
NamPower	• Solid international reputation • Strong balance sheet • Well-established finance department with established systems and processes • Long-term track record • Strong in-house electrification expertise	• Limited third-party investment expertise • Limited experience with international funds • Managing a Fund is not part of NamPower's core mandate

Capitalisation of the Fund

Seed capitalisation is to be provided by the Government, with an annual commitment made on a rolling three-year basis through the Medium-Term Expenditure Framework. Additional funding must be sought from potential funding partners by the Fund Administrator.

Potential Funding Sources

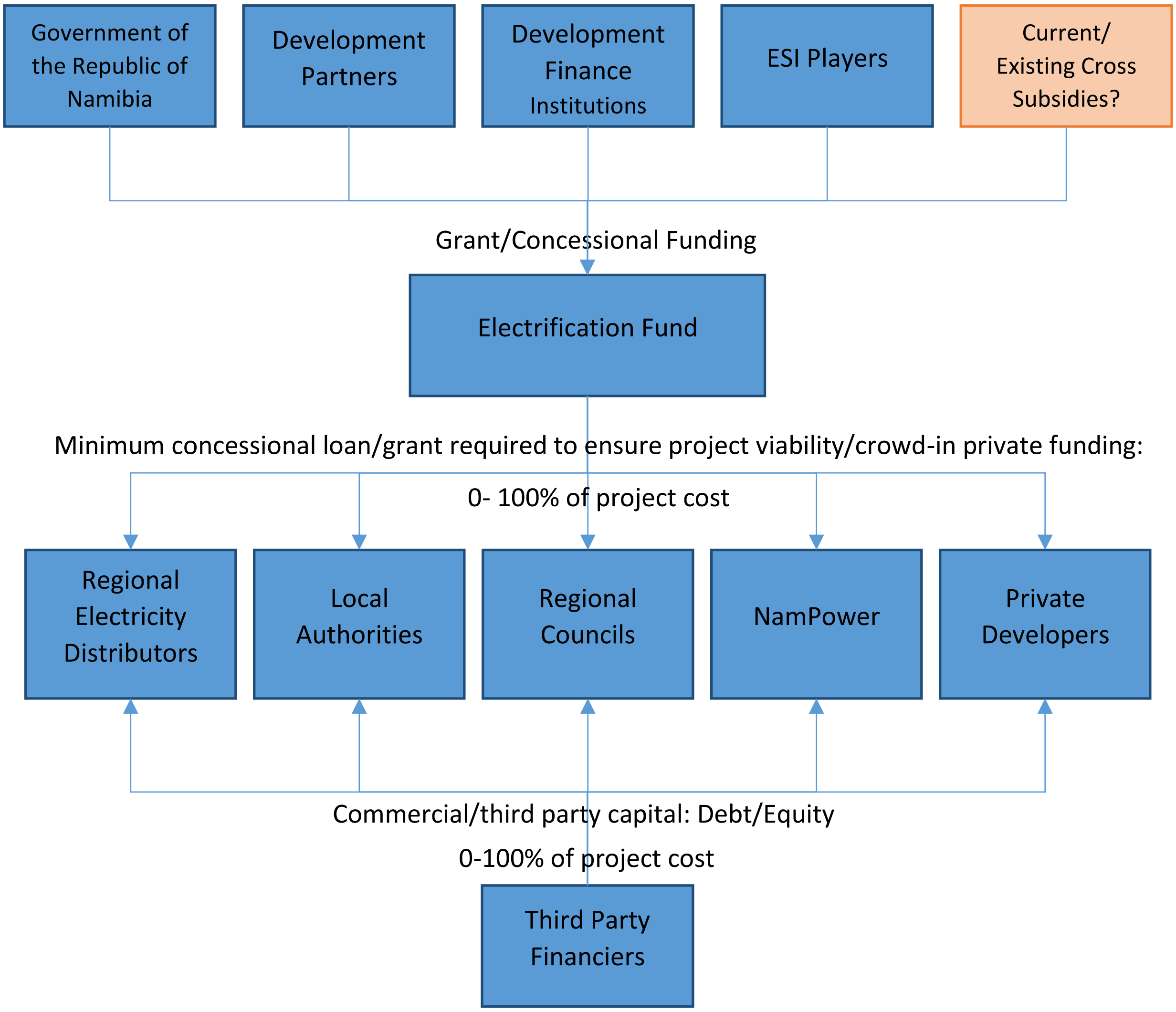
The Fund is expected to rely on concessional loans and grants from development finance and similar institutions to lower the weighted average cost of capital for electrification and to ensure that private investment can generate a commercial return on investment to attract private capital. Potential financiers are likely to include the Green Climate Fund, KfW, various sovereign wealth funds and impact investment funds, as identified in the Electrification Funding Portfolio and as further developed and refined by the Fund Administrator.

Potential Partners

The Fund will not compete with other financiers, but rather facilitate investments through the removal of bottlenecks, providing catalytic capital, lowering project capital costs and de-risking investments. As a result, the Fund's success depends on securing reliable investment partners, providing concessional funding, including local commercial banks, local private equity, venture capital and debt funds, local pension funds as well as development finance institutions.

By creating working relationships with potential partner entities, the Fund must ensure that long-term partners can be won to finance electrification projects. With the Fund's involvement, reducing risk and providing vetting through technical partners, other financiers may get involved in financing activities and thereby reduce some of the burden on the Fund itself.

Figure 5: Fund capitalisation and disbursement structure



Role of Government

The Government is the Fund's principal stakeholder and plays a leading role in its anchoring as an independent stand-alone financing vehicle that is singularly focused on enhancing electrification in Namibia. To this end, the Government will initiate the establishment of the Electrification Fund, and specify the broad framework conditions for its governance, management and day-to-day operations, including incorporating specialised funds as sub-fund or satellite funds.

While contributing initial seed funds to operationalise the Fund, and making annual contributions to the Fund, the Government will ensure the Fund's governance by a Board of Directors, who will appoint and oversee the management company for its management and operations. As the founding member, the Government will be represented on the Fund's Board, in this way contributing to the Fund's governance, strategic orientation and decision-making, and ultimately determining the mandate and appointment of the management company.

Board of Directors

The Fund and all sub-funds are to be governed by NamCode-compliant Boards. These Boards are to be chaired by independent non-executive directors. There are to be more non-executive directors than executive directors. Most non-executive directors are to be independent, to reduce potential conflicts of interest and promote objectivity. The Boards should meet at least four times a year.

A Board member's independence is determined from the perspective of a reasonable and informed third-party, i.e., they do not have a direct interest, position, relationship or association which, if viewed from the third-party perspective, is likely to cause undue influence or bias the decision-making process. Such independent directors may not be employed by the Fund in any executive capacity, or be a partner in the Fund's audit firm, or senior legal advisor for the preceding three financial years. They may also not be professional advisors to the Fund.

Directors must be free from any business or other relationships that could be seen to materially interfere with the individual's capacity to act in an independent manner. Also, they may not receive remuneration contingent upon performance of the Fund.

The duties of the Board include fulfilling an oversight role, setting strategic direction, monitoring the Fund's performance and reporting back to the providers of the Fund. The Board must review the proposed investment decisions referred to them by the Investment Committee, and in writing decline or accept such investments, and keep records of their decisions and reasons for such.

The key functions of the Board include to:

a) observe utmost good faith and act with due skill, care and diligence;
b) conduct the business of the Funds in a responsible way and not engage in practices which would prejudice the interests of financiers, service providers, customers and other stakeholders;
c) ensure long-term sustainability of the Funds;
d) ensure that the business of the Funds are conducted in full compliance with relevant Government policies and plans (specifically those relating to electrification);
e) promote and maintain ethical standards of conduct and deal fairly and honestly with financiers, service providers, customers and other stakeholders;
f) not disclose to third parties any confidential, financial or technical information acquired during negotiations with financiers, service providers, customers and other stakeholders;
g) not use the Funds to promote their private interests; and
h) be accountable to investors by fully disclosing information in a clear, fair and non-misleading manner.

Apart from the principles for potential candidates of the Board as suggested by the NamCode, other dimensions are to be taken into consideration for appointments. While not every individual Board member will possess each and every skill required, the Board must aim to include core competencies and expertise in terms of legal matters, financial accounting, investment/capital allocation, and electrification.

Management Company

The management company will be required to comply with the highest standards of corporate governance, as required and detailed above for the Fund's Board of Directors.

Investment Committee

Members of the Investment Committee shall co-opt financial and electricity sector experts as needed to supplement already present available skills. The Committee receives, reviews and stress-tests proposed investments that are prepared by the Fund Administrator and recommends changes and improvements to such proposals. When satisfied, the Committee refers proposals to the Board for review and approval.

The Board can co-opt these additional members of the Committee on recommendation of the Administrator and after consultation with the Minister of Mines and Energy. These co-opted members of the Investment Committee should be representatives of the MME, the Regulator, major licensees and major private sector electrification agents.

Fund Administrator

The day-to-day operations of the Funds are to be managed by a Fund Administrator. The primary responsibilities of the Administrator are to coordinate the funding sources for the Funds, oversee the Fund's investments, coordinate the meetings of the Board and Investment Committee, prepare investment proposals (in consultation with relevant electrification agents), manage the Fund's financials and operations, provide financial monitoring and record keeping, and manage the interactions with its Advisors.

The management company appoints the executive(s) of the Fund Administrator.

Advisors to the Fund

The management company will appoint Advisors, potentially on a consulting or contract basis, to develop funding requests, prepare funding and investment proposals, and tailor these for submission to the Investment Committee. These must meet the relevant standards in terms of their format, assessment and review, with recommendations in terms of funding amount and type, duration, and exit strategy if applicable.

Technical Advisors are most likely to be individuals that are active in the country's electricity industry, with a working knowledge and understanding of electrification activities and technologies. Their practical understanding, skills and experience is required to determine the viability of proposals, and thereby provide credible recommendations on all relevant technical matters to the Investment Committee.

Financial Advisors are to be individuals or entities active in the country's financial sector, with a working knowledge and understanding of transaction structuring, transaction advisory and expertise in financing. Their practical understanding, skills and experience is required to determine the financial viability of proposals, and thereby provide credible recommendations on all relevant financial matters to the Investment Committee.

The Board shall appoint Advisors on recommendation of the Administrator.

Strategy

The Electrification Fund's principal strategy is to blend various sources of grant and concessional funding with commercial funding and strategic guarantees, to create a blended funding mix that optimises the cost of capital for electrification undertakings in Namibia with minimum possible public fund use per unit of electrification.

Fund Differentiator

Unlike many conventional funds, the Electrification Fund's primary focus is to provide optimised financing to maximise electrification per dollar spent, rather than generating financial returns. This focus is to enable the Fund to receive grant funding, both from the Government and from other sources, as well as concessional funding from development finance institutions.

The Fund will not seek to generate a conventional, commercial, direct return on investment per se, but is focused on using grants and concessional funding to crowd-in (invest side-by-side with) private capital, by making the minimum investment to ensure that electrification projects become viable.

Stakeholders

To ensure broad-based buy-in, the Fund has a broad stakeholder base, including but not limited to:

- The Government of the Republic of Namibia, via the:
  - Ministry of Mines and Energy
  - Ministry of Finance
  - National Planning Commission
  - Ministry of Works and Transport
  - Ministry of Urban and Rural Development
- The Electricity Supply Industry, including:
  - Electricity Control Board
  - NamPower
  - Electricity Distributors
  - Private sector actors, including Energy Associations
- Financial Intermediaries, including:
  - the Development Bank of Namibia
  - Namibian and Regional Commercial Banks
  - The Environmental Investment Fund
  - Development Finance Institutions
- Consumers including representative consumer organisations and select corporates.

6.4 Investment philosophy

The Fund's investment philosophy is to crowd-in funding for electrification projects in Namibia, by providing the minimum grant funding and de-risking required to attract commercial capital. To this end, the Fund's portfolio is to be established under this basic premise, supported by its investment policy.

6.5 Investment policy

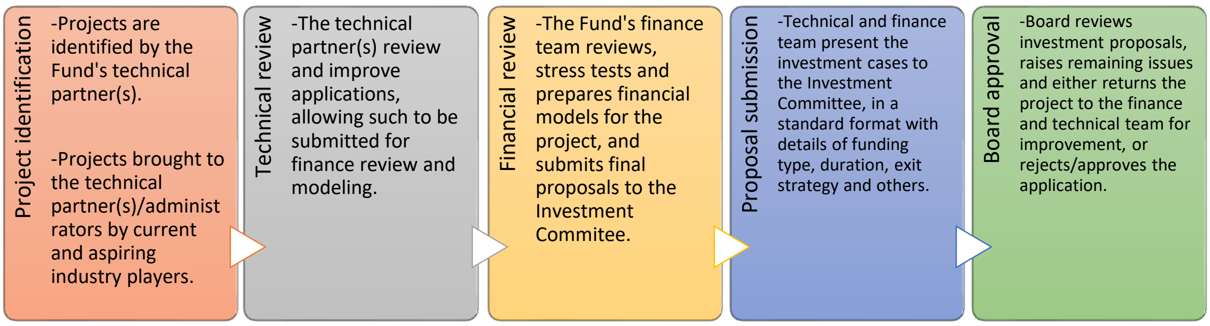
The Fund's investment policy serves two purposes: to communicate the Fund's financing philosophy, procedures, guidelines and constraints; and to outline its rules of engagement. The investment policy is to cover the complete funding life cycle, including:

- identifying and analysing electrification needs in compliance with Government Policy and the NEMP and in consultation with electrification agents;
- financing specific projects to provide services to meet electrification objectives;
- managing the financing to ensure ongoing fulfilment of the objective; and
- when suitable, divesting from projects once objectives have been attained.

6.6 Funding process

A detailed and stringent financing process will be required to ensure the Fund's credibility and enable it to attract substantial grant and/or concessional loans. It is beyond the scope of this Report to put forward the detailed process, which is expected to be laid down in the Fund's inception, business and operationalisation plan. Internal technical and financial reviews are to be followed by the Investment Committee's verification and assessment, and only then are submitted to the Board for approval. Figure 6 shows a high-level overview of the Fund's project funding process.

Figure 6: Project funding process



6.7 Monitoring and reporting

Once a financing decision is approved by the Board, the Fund Administrator oversees the implementation of the disbursement process. The Administrator works closely with relevant stakeholders, including project initiators, regulators, funding partners and electrification beneficiaries to implement initiatives. It is important to note that the Administrator must have significant operational, managerial, industry and financial expertise to ensure that optimal electrification outcomes are achieved. The Administrator is to use adequate monitoring systems to ensure that the Fund's activities can be timeously and transparently reported, both internally as well as to actual and potential investors. It will be important to measure achievements against suitable benchmarks, to track and compare the Fund's development.

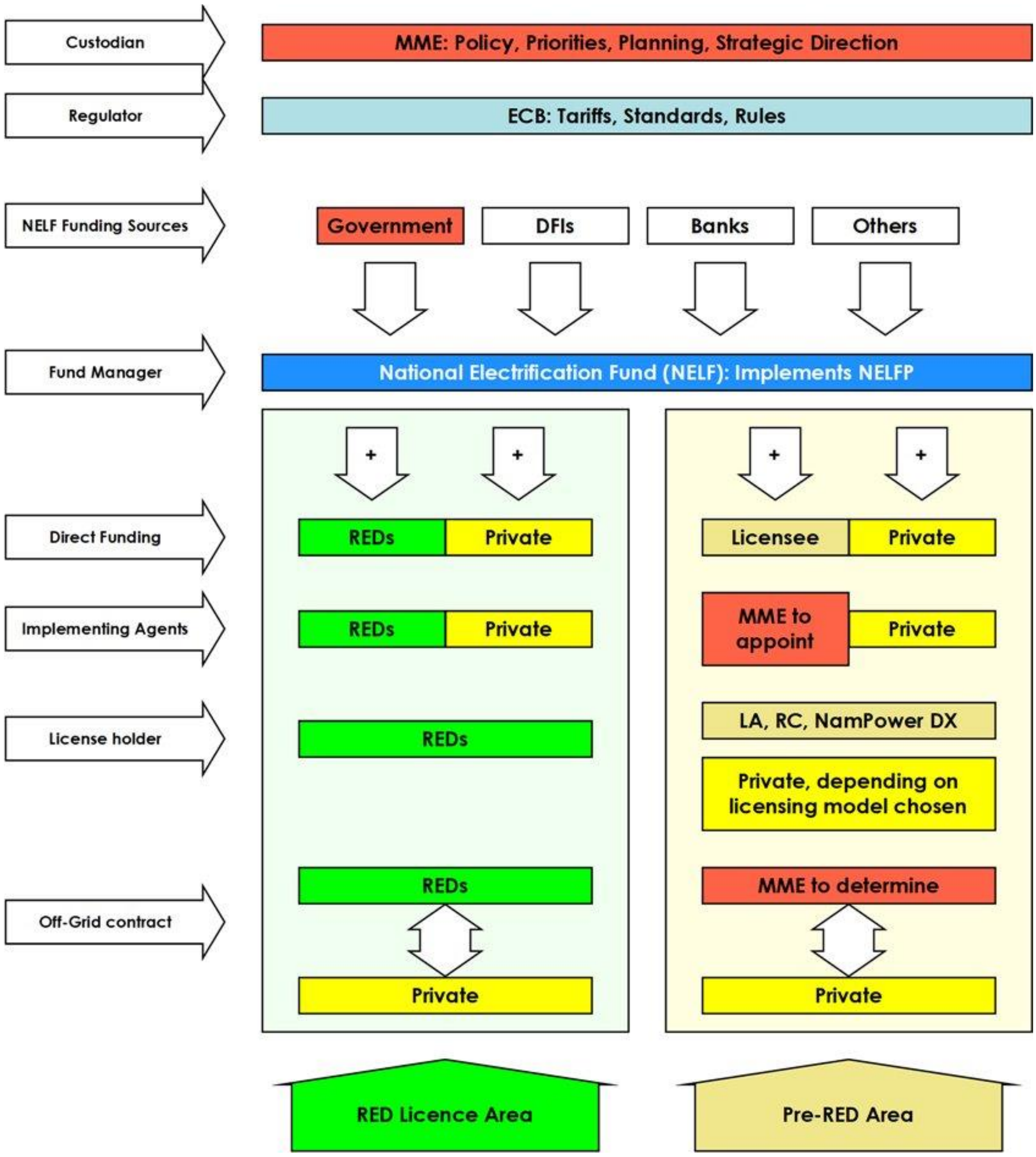
6.8 Administration

The Fund must employ suitable administrative processes to ensure that its activities properly monitored and managed, and that risks are suitably minimised. Furthermore, the Fund's management and governance structure must be kept informed as to the Fund's operations and the performance of the underlying investments and risks, which is the ongoing responsibility of the Fund Administrator.

6.9 Institutional actors and their responsibilities under the NELFP model

Figure 7 provides an overview of the institutional actors and their intended main responsibilities under the electrification funding model as described in this report.

Figure 7: Institutional actors and their main responsibilities under the NELFP model



7. Implementation Steps

The establishment of the Electrification Fund requires further research in order to establish the optimal structure, from several potential structures. These potential structures include, but are not limited to any one of the following:

- A unit trust;
- A trust;
- An en-commandite partnership; or
- A private or public limited company.

7.1 The Regulatory Framework

The regulatory framework in Namibia does not provide any special regulation relevant to investments by or into a venture capital or equity fund – except for investments by Namibian pension funds and life insurance companies. There are three regulations which are of direct relevance to investments into private equity or venture capital funds in Namibia, namely, Regulation 15, 28 and 13 of the Pension Fund Act, 1956 (Act No. 24 of 1956). The three regulations would apply to the Fund should it seek to attain access to local pension fund or life insurance assets. As the Fund may wish to attract these funds, these regulations, especially Regulation 15 and 13 of the Pension Fund Act, 1956 (Act No. 24 of 1956), should be considered.

Regulation 13, the most noteworthy of the aforementioned, provides for the management of unlisted investments in and stipulates that pension funds must invest in unlisted investments through a Special Purpose Vehicle (SPV). A SPV must be either a public or private company (under the Companies Act 2004) or a Trust and meet several further conditions, including having its investment plan and directors approved by NAMFISA.

Registration requirements in accordance to Regulation 13 stipulates that an SPV register:

I. Either a public or private company under the Companies Act, 2004 (Act No. 28 of 2004) and is solely organized and operated for purposes of holding unlisted investments on behalf of investors; or

II. A trust under the Trust Moneys Protection Act, 1934 (Act No. 34 of 1934) and is solely organized and operated for purposes of holding unlisted investments on behalf of investors.

Purpose of Special Purpose Vehicle

A special purpose vehicle -

(a) must have subscription interest as specified in its investment plan;
(b) must enter into a subscription agreement, not inconsistent with the investment plan, with an investor that is desirous of investing in the special purpose vehicle, that specifies -
    (i) the total committed capital of the investor to the special purpose vehicle; and
    (ii) the period within which the special purpose vehicle has the right to drawdown the committed capital,

but, if the drawdown is not affected, in respect of pension/life fund, within a period of 24 months, the capital commitment lapses, unless the special purpose vehicle and the pension/life fund agree upon an extension of the drawdown period, and such extension has been approved by the Registrar;

(b) may, if so authorised by its memorandum of association and upon written approval by the Registrar, issue debentures, provided that –

(i) the special purpose vehicle has submitted to the Registrar all particulars of the debenture issuance, including the debenture trust deed; and

(ii) the issuance of debentures is not inconsistent with the investment plan and the Companies Act, 2004 (Act No. 28 of 2004).

Registration Process of Unlisted Investment Manager

A company which desires to be registered as an Unlisted Investment Manager must -

(a) lodge with the Registrar an application for registration in the form of Form 3 as set out in Annexure 2, and in the manner as determined by the Registrar; and

(b) Fully and honestly disclose the required particulars.

The Registrar may call upon any company which has applied for registration to furnish further relevant information considered necessary by the Registrar.

Key Regulatory Conclusions

The nature of incorporation will depend on the type of capitalization the Fund is to draw capital from. If life insurance and pension funds are targeted, the optional forms of a Trust, Public Company and Private Company will apply. Such an entity will then have to be registered as a Special Purpose Vehicle with Namfisa. If it is likely to draw on development capital and private funding, a private company incorporate under the Companies Act, 2004 (Act No. 28 of 2004) will need to be registered. Given that the capitalization of the Fund is largely to be drawn from Government and Development partners, it is not critical for the Fund to register as an SPV. Given the limitations and complexities associated with the regulation, it is certainly worth considering if the core Fund should be an SPV, or if a sub or satellite fund registered as such, may not be a better option.

7.2 Fund Establishment

With the regulatory environment in mind, the Fund needs to be established in the most optimal form for both capital raising and deployment. In this regard, the Fund documentation should be compiled with the Fund objectives in mind, while adequately catering for the needs of the contributors to the fund, including but not limited to:

- The Government of the Republic of Namibia
- Specific and general development finance institutions
- Specific and general development partners
- Asset managers and private financial institutions
- Underlying capital owners (e.g., pension fund members)

Further, the Fund documentation needs to codify the objectives, oversight, management and record keeping of the Fund. It is further advised that the Fund documentation identifies and establishes mechanisms for interacting with satellite funds, third party funds, as well as methods for establishing sub-funds for specific purposes or with specific objectives.

Critically, fund documentation needs to establish clear roles and responsibilities for the Board and Management Company of the Fund, to ensure clear checks and balances, as well as adequate independence and manoeuvrability for the entity responsible for deploying the assets of the Fund.

7.3 Mandate preparation

The registration of the Fund, as well as the appointment of the board will require the development of a high-level mandate, while the appointment of a management company will require a detailed mandate to be developed and signed off by the board (and regulator). At a minimum, the mandate should include:

- Fund objectives
- Fund limitations
- Fund raising expectations
- Investment approach / process
- Drawdown process
- Reporting framework

7.4 Board appointment

The oversight and governance of the Fund requires that a competent board of directors is appointed, with a diverse skillset suitable for overseeing the functioning of the fund in order that its objectives are attained. In this regard, it is recommended that the make-up of the board is codified within the fund documentation, to include but not be limited to:

- Ministry of Mines and Energy representation
- Ministry of Finance representation
- National Planning Commission representation
- Electricity Control Board (regulator) representation
- Local Authority and/or Regional Electricity Distributor (RED) representation
- Management Company representation
- Investment Specialist representation
- Legal representation

It is recommended that the board is NamCode compliant, including an independent chairperson.

7.5 Management Company Appointment

Once the legal form of the Fund has been established and a board of directors or trustees appointed, a suitable Management Company (Manco) should be identified and appointed, with a clear mandate. This could be done via a public or closed tender process, or via direct appointment.

It is recommended that the Manco mandate includes the initial and subsequent capital raising or raising coordination, the establishment of sub-funds and/or satellite funds where financing is available for electrification but with specific limitations that exclude that funding from being part of the core Fund. Further, the mandate should include detailed requirements as to the management of the deployed and yet to be deployed resourced of the Fund, as well as reporting requirements, processes and similar associated therewith.

7.6 Resource Mobilisation

Throughout the Fund establishment process, core stakeholders should be consulted and engaged with, in order to ensure that the Fund is optimally established to attract financing from various sources. Some potential sources are detailed in Table 7 below.

Table 7: Sources, applications and responsibilities relating to this Policy's resource mobilisation

Funding Source	Envisaged Application	Main Responsibility
National Electrification Fund (NELF)	The NELF is to receive core funding from the Government and leverage additional funding from various sources. The NELF will make available funding to national electrification activities.	Entity responsible for the implementation of the NELF under the NELFP
Government budget	Provision of NELF core funding	MME, in consultation with the NPC and MoF
National Energy Fund (NEF)	Activities that fall within the legal scope and financial means of the NEF and contributions to the NELF	MME
Electricity Distributors and Suppliers	Licensees are to fund or and/co-fund electrification from their own resources within their financial means and within their licence areas. They are to further raise commercial loans for electrification to the extent feasible within their financial means.	Distribution Licensees
ECB Levy	Activities that fall within the Regulator's formal responsibilities	Regulator, with authorisation of the MME, as appropriate
Development entities and Public-Private Partnerships (PPPs)	Contributions by development organisations as well as those that can be implemented by PPPs	MME / MoF/ MURD, to enable bi- and multi-lateral contributions to the NELF
Private sector	Activities where private sector actors can contribute	MME, to facilitate the processes to enable funding
Grant and loan funding, including climate-related funding	Such sources of funding are to be targeted by the NELF	NELF, in consultation with OMAs tasked with facilitating and administering such funding
Financial instruments / markets	Activities from which the private sector can directly benefit	MoPE/ MoF, to facilitate the processes to enable funding

Table 8: Action points, timelines and responsibilities

Action Description	Timeline	Responsibility Lead / Support
Action Point 1: Identify Suitable Structure for Fund		
Compile pros/cons assessment of structure options, based on needs/limitations of potential financiers	Q3 2021	MME / MOF, ECB
Action Point 2: Fund Documentation		
Prepare documentation as to fund objective, oversight, management and record keeping.	Q4 2021	MME / ECB
Prepare documentation as to fund interface with satellite funds and third-party funds.	Q1 2022	MME / ECB, MoF, NPC
Prepare legal documentation to establish fund, including company registration, regulatory registration and similar.	Q1-Q2 2022	MME / Legal Experts / ECB
Action Point 3: Mandate Development		
Prepare investment mandate including fund rules, objectives, investment approach, drawdown process and reporting framework.	Q3 2022	MME / MME
Prepare capital raising mandate based on fund objectives, limitations and structure.	Q3 2022	MME / MOF, ECB
Action Point 4: Board Appointment		
Appoint Fund board of trustees or directors, including representation from GRN, ESI, Investment Specialists, Legal Professional	Q3-Q4 2022	MME
Action Point 5: Appointment of Management Company		
Tender for management company or conduct direct appointment of management company as per the investment mandate and capital raising mandate.	Q4 2022-Q2 2023	MME / MoF, ECB
Action Point 6: Capital Raising		
Prepare pitch document for capital raising	Q3 2023	Management Company / MoF, MME
Conduct capital raising roadshow	Q3 - Q4 2023	Management Company / MoF, MME

8. Conclusions

In order to accelerate electrification undertakings, it is essential that investments in Namibia's electricity infrastructure are increased to levels that are very considerably above what they currently are. Today's business-as-usual electrification will not achieve universal access to electricity and will limit the attainment of a host of national development objectives.

Electrification funding requirements cannot be met by the Government and the utilities alone. This implies that most electrification funding must originate from sources other than from the Government. Similarly, the utilities' direct contributions cannot fulfil the funding requirement without a large impact on electricity prices which in turn is not sustainable for the economy and in the face of increasing competition to grid electricity from customer-installed private generation.

The Electrification Funding Portfolio introduced in this Report showcases the types of funding that can potentially be used for accelerated electrification in Namibia, as well as some of the most likely institutions that may contribute to fund national electrification undertakings in future. The Portfolio aims to broaden the sources of electrification funding through two primary approaches, namely by increasing the volume of funding available for electrification projects through the "crowding-in" of private capital, concessional, development- and climate-related funding and grants, and by optimising the funding mix, structuring and syndicating funding and leveraging current public and other funding to extend its effectiveness. It will be the function and responsibility of the Electrification Fund to expand and implement the funding portfolio and make the funds available to electrification agents.

Public funding for electricity infrastructure projects is critical to leverage additional capital. While it is likely to remain limited, it plays an important role as catalyst for such third-party capital. Private sector investors are likely to include institutional entities such as pension funds, insurance companies, endowment funds and others. This is not a uniquely Namibian opportunity, but the country can nevertheless benefit from such funding in future.

Funding universal access to electricity is to be achieved through the to-be-created Electrification Fund. The Fund's objective is to seek and aggregate funding from a variety of sources, including from the Government, DFIs, license holders, private capital, electrification end-users and others, to provide least-cost blended funding that is specifically and singularly earmarked for electrification activities in Namibia. As such, the Electrification Fund is not primarily focused on generating financial returns but is to optimise investments to maximise electrification per dollar spent. This focus is to enable the Fund to receive grant funding, both from the Government and from other sources, as well as concessional funding from DFIs, directly or through a specialist sub-fund or specialist satellite fund structure. Also, the Fund will not seek to generate a conventional, commercial, direct return on investment per se, but is to be focused on using grants to crowd-in private capital, by enabling the minimum investment to ensure that electrification projects become viable.

This Report provides a high-level description of the ownership, governance, management and select operational aspects of the Electrification Fund. Provided that the Fund is actively supported by the country's key electricity stakeholders, it could bring about a marked increase of funding to substantially upscale national electrification efforts in Namibia in future.

Annexure A: Potential funding entities and their key characteristics

Potential Funding Entity	Entity Type	Entity Characteristics	Funding Type(s)
French Development Agency - AFD	Bilateral Development Agency	Has implemented approximately 4,000 projects in over 115 countries. Focus on sustainable development goals.	Grants
Austrian Development Agency	Bilateral Development Agency	Focus on climate protection measures as a tool for poverty reduction and sustainable development, paying particular attention to increase the climate change resilience of poor populations in partner countries.	Grants
Denmark's Development Agency - DANIDA	Bilateral Development Agency	Responsible for the planning, implementation and quality assurance of Denmark's development cooperation with partner countries.	Grants
Belgian Development Agency – Enabel	Bilateral Development Agency	Focus on SMEs in developing countries and structural contributions to the socio-economic growth.	Grants
European Union	Bi- and multilateral Development Agency	Focus on climate finance, largely through the Global Climate Change Alliance Plus (GCCA+) which includes resilience as major priority.	Grants
German International Climate Initiative	Bilateral Development Agency	Focus on climate finance.	Grants
German Development Agency - GIZ	Bilateral Development Agency	Focus on sustainable development objectives, primarily through technical support.	Grants
Global Affairs Canada (former CIDA)	Bilateral Development Agency	Focus on climate finance to help most vulnerable countries adapt to and mitigate climate change and make the transition to low-carbon, climate-resilient economies.	Grants
Irish Aid	Bilateral Development Agency	Ireland's aid programme to reduce poverty, hunger and provide for humanitarian needs, with a particular focus on sub-Saharan Africa.	Grants
LuxDev	Bilateral Development Agency	Aid and development agency of the Government of Luxembourg.	Grants
Netherlands Development Cooperation	Bilateral Development Agency	Development agency under the Dutch Ministry of Foreign Affairs, responsible for development and funding, focusing on the developing world including African countries affected by poverty, including climate finance.	Grants

Potential Funding Entity	Entity Type	Entity Characteristics	Funding Type(s)
NORAD – Norwegian Development Agency	Bilateral Development Agency	Focus on forestry, energy, results-based approaches.	Grants
Nordic Development Fund - NDF	Bilateral Development Agency	Climate financing facility of Nordic countries (Denmark, Finland, Iceland, Norway, Sweden). Finances in cooperation with multilateral organisations with broad climate change and development focus.	Grants
Swiss Agency for Development and Cooperation – SDC	Bilateral Development Agency	SDC is an agency in the federal administration of Switzerland.	Grants
Swiss Development Cooperation – SECO	Bilateral Development Agency	SECO is part of Switzerland’s State Secretariat for Economic Affairs and contributes to achieving the strategic objectives of the country’s foreign economic policy.	Grants
Swedish International Development Agency – SIDA	Bilateral Development Agency	SIDA is a government agency of the Swedish Ministry for Foreign Affairs responsible for organisation of the bulk of Sweden's development assistance to developing countries.	Grants
UK Department for International Development -DfID	Bilateral Development Agency	Climate and environment focused.	Grants, loans, equity
UK Development Bank - CDC	Bilateral Development Bank	UK's development financial institution that supports business and economic growth in poor developing countries.	Grants, loans, equity
Italian Development Bank - CDP	Bilateral Development Bank	Italy’s agency for development cooperation, supporting the Italian international cooperation, acting as a link between the priorities of development and the promotion of an increasingly active role of European and Italian companies in emerging and developing markets.	Grants, loans, equity
Spanish Development Bank - COFIDES	Bilateral Development Bank	Provides medium and long-term financing for viable private investment projects that, based on profitability criteria, contribute both to the development of the host countries.	Grants, loans, equity
Finnish Development Financier - Finnfund	Bilateral Development Bank	Finnish development financier focusing on sectors that are critical to sustainable development, e.g., renewable energy, forestry, agriculture and financial institutions.	Grants, loans, equity

Potential Funding Entity	Entity Type	Entity Characteristics	Funding Type(s)
Dutch Development Bank - FMO	Bilateral Development Bank	FMO manages the Dutch Fund for Climate and Development (DFCD) on behalf of the Dutch Ministry of Foreign Affairs, to improve livelihoods of vulnerable communities, and enhance the health of critical ecosystems such as tropical rainforests, marshland and mangroves.	Grants, loans, equity
IFU Denmark	Bilateral Development Bank	Aids the efforts of developing countries to implement the Paris Agreement, carry out climate adaptation measures, and reduce emissions.	Grants, loans, equity
German Development Bank - KfW	Bilateral Development Bank	Focus on improving living conditions in developing countries, conflicted and emerging economic states, while protecting the climate and the environment at the same time.	Grants, loans, equity
Korea Development Bank	Bilateral Development Bank	South Korea's wholly state-owned policy development bank to finance and manage industrial projects, expedite industrial development and enhance the national economy.	Grants, loans, equity
Norfund	Bilateral Development Bank	Norwegian Investment Fund, which is a state-funded private equity company focusing on developing countries.	Grants, loans, equity
French Development Bank - Proparco	Bilateral Development Bank	Subsidiary of the French AFD that focuses on private sector development, providing funding and support to both businesses and financial institutions. Emphasis on infrastructure with a specific focus on renewable energies, agribusiness, financial institutions, healthcare and education.	Grants, loans, equity
Portuguese Development Bank - SOFID	Bilateral Development Bank	Portuguese development bank financing projects in least-developed countries to contribute to sustainable development.	Grants, loans, equity
Swedfund	Bilateral Development Bank	Objective of ending world poverty and promoting sustainable investment, decent job creation and inclusive growth.	Grants, loans, equity
US International Development Finance Corporation - DFC	Bilateral Development Bank	Focus on co-funding alongside private sector for developing country needs.	Equity

Potential Funding Entity	Entity Type	Entity Characteristics	Funding Type(s)
Japan International Cooperation Agency - JICA	Bilateral Development Bank	Public and private climate finance and infrastructure focus.	Grants, loans, equity
Adaptation Fund	Climate Fund	Supports adaptation projects in developing countries. Works through accredited institutions. DRFN is accredited in Namibia.	Grants
Global Environment Facility -GEF	Climate Fund	Supports projects that address climate change, biodiversity loss and desertification in developing countries. Works primarily through UN agencies and MDBs.	Grants
Green Climate Fund - GCF	Climate Fund	Supports climate projects across all sectors in developing countries. Works through accredited institutions noting that EIF is accredited in Namibia.	Grants, loans, equity, guarantees
Special Climate Change Fund - SCCF	Climate Fund	Sub-fund of the GEF focused on adaptation and technology transfer.	Grants
African Development Bank - AfDB	Multilateral Development Bank	Continent-wide focus on infrastructure, project budget support and climate change funding.	Grants, concessional loans, guarantees
International Finance Corporation - IFC	Multilateral Development Bank	Financial support to renewable technology projects and innovation through its greening transport initiative and reducing carbon emissions.	Concessional loans, equity
New Development Bank - NDB	Multilateral Development Bank	Focus on renewables, sustainable development and infrastructure.	Concessional loans
World Bank Group - WBG	Multilateral Development Bank	Support of infrastructure, climate finance, climate smart agriculture and disaster and risk management.	Concessional loans