GOVERNMENT OF THE REPUBLIC OF NAMIBIA

ELECTRICITY SUPPLY INDUSTRY

National Electricity Support Mechanism

MINISTRY OF MINES AND ENERGY
Developed by the Electricity Control Board for the Ministry of Mines and Energy in consultation with the Electricity Supply Industry Stakeholders

May 2014

Ministry of Mines and Energy
Private Bag 13297
Windhoek
Namibia

Hon. Isak Katali (MP)
Minister
EXECUTIVE SUMMARY

The National Electricity Support Mechanism for domestic electricity consumers in Namibia describes the rationale for a domestic electricity support mechanism and options for such a national support.

The National Electricity Support Mechanism is based on an inclining block tariff (IBT) for low capacity pre-paid metered (PPM) domestic connections limited to a supply of 20 Ampere, comprising of three separate consumption blocks. The first block is for a monthly electricity consumption of 50 kWh or less, the second for more than 50 and up to 200 kWh per month, while the third block is for a monthly consumption exceeding 200 kWh.

The tariffs for the three blocks are to be structured to allow end-users with a low capacity electricity connection to consume the first 50 kWh of monthly electricity at the NamPower cost of energy, i.e. the actual cost to generate electricity. The second block is priced at NamPower’s total cost of supply (energy and transmission) such that both block 1 and block 2 tariffs require a subsidy. The third block of the proposed IBT is priced at the distributors’ domestic normal rate (which is the same as the normal capacity connection pre-paid metered tariff that is charged by electricity distributors) and does not benefit from a support subsidy.

The proposed low capacity connection IBTs and normal capacity connection tariff for PPM electricity for 2013/14 are illustrated below.
The consumption of subsidised electricity implies that a funding source is needed to cover the revenue shortfall created by such subsidies. This document recommends that the total subsidy requirement arising as a result of making available low capacity connection IBTs are recouped by way of a regulated support tariff (ST) charge. This ST charge is to be borne by all transmission clients, including electricity distributors. In this way, the ST charge is shared by all electricity end-users except those who are explicitly shielded from it, and will manifest itself as an across-the-board increase of electricity tariffs.

It is recommended that the ST charge is paid into a dedicated ST Fund. Both the ST charge and the ST Fund are to be established by way of legislation, to ensure that the basis of the ST Fund’s governance and operational modalities are transparently defined and readily accepted across the Namibian ESI.

The ST charge is to be levied as a percentage of the total transmission charges (except the National Energy Fund (NEF) and Electricity Control Board (ECB) levies) paid by each transmission client. The ST Fund is to pool the monthly contributions made by transmission clients, and allows for monthly compensation payments to those entities that distribute electricity to low capacity connection end-users benefitting from subsidised electricity.

The ST Fund is to be administered by an ST Fund Administrator. It is to be ring-fenced from the Fund Administrator’s other business, and is to be independently audited once per year. It is further recommended that the ST Fund is established as a ring-fenced function within NamPower, i.e. that NamPower is to become the ST Fund Administrator. The ST Fund is to have a separate bank account, into which NamPower transfers monthly ST charges received from its transmission clients, and from which monthly ST payments are made to eligible distributors.

The ST Fund will require seed funding to cover for monthly variations in funding in- and outflows. It is recommended that such initial seed funding is to be provided by way of a grant from Government, or the NEF, or a loan.

Every year, the ST charge is to be initially determined during NamPower’s tariff review. It is to be based on historical operating and reporting manual (ORM) data from all distributors and a forecast of electricity consumption for the forthcoming year. These data sets allow for a forecast of the total subsidy requirements and the computation of the resulting ST charge, which then becomes part of NamPower’s approved tariffs. As a second step, and as part of the annual tariff reviews of all distributors, the subsidy forecast is aligned with the actual
subsidy requirements as requested by distributors. To this end, each distributor submits their subsidy requirement to cover the revenue shortfall arising as a result of providing electricity to low capacity connection block 1 and block 2 end-users. The initial ST forecast is then matched with the actual ST subsidy applications, which determines the actual total ST charge required which is then translated into a percentage ST charge that is charged to all transmission clients.

A forecast of the requirements of the ST Fund, based on the expected funding needs of each main distributor, is illustrated below. The forecast represents the total annual amount in millions of Namibian dollars that the main distributors who are likely to offer low capacity connections are to receive from the ST Fund to cover the revenue shortfalls arising from the introduction of the National Electricity Support Mechanism.

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<td>NORED + OPE</td>
<td>N$ millions</td>
<td>11.37</td>
<td>26.55</td>
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<td>CENORED</td>
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<td>5.19</td>
<td>12.42</td>
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<td>Erongo RED</td>
<td>N$ millions</td>
<td>5.38</td>
<td>10.88</td>
<td>18.20</td>
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<td>Windhoek</td>
<td>N$ millions</td>
<td>4.16</td>
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<td>Central &amp; South excl Whk</td>
<td>N$ millions</td>
<td>5.37</td>
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<td>TOTAL</td>
<td>N$ millions</td>
<td>31.46</td>
<td>71.46</td>
<td>122.81</td>
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<td>173.91</td>
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| Expected TX ST Funds raised          | N$ millions | 32.71 | 73.09 | 125.46 | 148.66 | 175.27 | 201.99 | 227.19 | 255.47 |
| Surplus (Shortfall)                  | N$ millions | 1.25  | 1.63  | 2.65  | 1.70  | 1.36  | 1.87  | 1.26  | 1.84   |

The projected annual funding requirements per main distributor, and the total projected income derived through the ST charge paid by all transmission clients is shown below.
The percentage ST charge that generates the subsidy that covers the revenue shortfall created by subsidised domestic consumers starts at some 1.25% of the total transmission charges in the financial year 2014/15, and increases to some 3% by 2021/22 for the base case forecast. The percentage ST charge is to appear on NamPower’s monthly transmission bill to all transmission clients, and is to be levied on all transmission charges that attract value added tax (VAT), i.e. all charges except the ECB and NEF levies.

It is expected that the total ST requirement, and therefore the percentage ST charge, increases rapidly in the first three years following the introduction of the support mechanism. This increase is mainly driven by a rapid conversion of domestic customers wishing to switch from normal to subsidised low capacity connections. Thereafter, increases in the ST charge are mainly due to the organic growth of the domestic customer base. It is expected that customer numbers in the low capacity connection consumption brackets will grow faster than the number of customers requiring normal capacity connections.

The up-take of low capacity connections is expected to imply some 35 000 conversions per year for three years. These conversions practically mean either a meter replacement (where old prepayment meters or conventional meters are currently installed) or a re-programming of the meter’s current limiter setting. Conversions are estimated to cost the industry some N$15 million, including provisions for associated information campaigns and other costs.

The following tasks need to be initiated and executed to implement the National Electricity Support Mechanism:

- Final stakeholder approval and completion of the present project, in April 2014;
- Approval of the electricity support mechanism by the Board of the ECB, by May 2014;
- Amending the ECB’s tariff methodology, to include the requirements of the proposed electricity support mechanism, by June 2014;
- Drafting of the ST Fund law, which is to include the legal framework to establish the ST Fund and implement an ST charge that is to be payable by every transmission client including distributors, by July 2014;
- Submission of the proposal for a first Namibian electricity support mechanism, by the ECB to the Minister of the Ministry of Mines and Energy, for approval, by August 2014;
- Finalisation of legal requirements underpinning the ST Fund bill, by September 2014;
- Sourcing of seed funds required to operationalise the ST Fund, in late 2014 and early 2015;
- Formal establishment of the ST Fund Administrator, including the finalisation of the operational modalities of the Fund, by early 2015;
Formal inclusion of the first ST charge in NamPower’s tariff application process for 2014/15, in March 2015;

- Full implementation of the ST mechanism in all distributors, from July 2015 onwards;

- Commencement of the systematic conversion of normal capacity domestic PPM connections to low capacity PPM connections offering an IBT in all distributors, from July 2015 onwards; and

- Commencement of monitoring activities by the ECB, to ensure that potentially negative effects resulting from the introduction of the electricity support mechanism are minimised, from July 2015 onwards.

This is summarised in the following table:

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<td>Drafting of the ST Fund law and submission into the approval process</td>
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<td>Establishment of the ST Fund Administrator</td>
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<td>Inclusion of ST charge in NamPower’s tariff application process</td>
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<td>Full implementation of the ST mechanism in all distributors</td>
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<td>Conversion of normal capacity domestic PPM to low cap. connections</td>
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<td>Commencement of monitoring activities by the ECB</td>
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# ACRONYMS AND ABBREVIATIONS

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<tr>
<td>ADMD</td>
<td>After Diversity Maximum Demand</td>
</tr>
<tr>
<td>AE</td>
<td>Alternative Energy</td>
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<tr>
<td>CFL</td>
<td>Compact Fluorescent Lamp</td>
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<td>DSM</td>
<td>Demand Side Management</td>
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<td>ECB</td>
<td>Electricity Control Board of Namibia</td>
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<td>EDI</td>
<td>Electricity Distribution Industry</td>
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<td>EE</td>
<td>Energy Efficiency</td>
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<td>Electricity Act</td>
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<td>IBT</td>
<td>Inclining Block Tariff</td>
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<td>LAS</td>
<td>Local Authority Surcharge</td>
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<tr>
<td>NamPower</td>
<td>Namibia Power Corporation (Pty) Ltd</td>
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<td>NEF</td>
<td>National Energy Fund</td>
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<tr>
<td>ORM</td>
<td>Operating and Reporting Manual</td>
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<td>PPM</td>
<td>pre-paid metered</td>
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<td>RED</td>
<td>Regional Electricity Distribution Company</td>
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<td>REDMP</td>
<td>Rural electricity distribution master plan for Namibia (2010)</td>
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<tr>
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<td>Support Tariff</td>
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<td>ST charge</td>
<td>charge levied as a result of the introduction of support tariffs</td>
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<td>ST Fund</td>
<td>a dedicated fund used to collect ST charges and make ST pay-outs</td>
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1 Introduction

Electricity is an essential enabling factor underpinning most aspects of national development. At household level, electric lights replacing candles allow for better lighting, enhance reading and broaden educational opportunities. Electricity for communications media such as radio, television and mobile telephones improve information dissemination, provide for entertainment and enable communication. Electricity for refrigeration makes it possible to keep food for longer and may thus improve peoples’ health and access to food.

The benefits brought about by affordable access to electricity are often underestimated. Such benefits become particularly obvious in areas with no or limited access to electricity. In 2013, significant rural and peri-urban areas in Namibia are still without electricity. At the same time, the challenges to further electrify additional urban and rural populations are increasing, and the affordability of electrical energy remains a critical challenge.

There are major economic and social benefits to be gained by assisting low-income households who have electricity to realise these benefits and from rolling out electricity to those areas where there is no or limited access to electricity. Rapidly rising electricity prices – mainly as a result of steadily rising generation, transmission and distribution costs – are working against this potential. For most consumers, electricity prices have more than doubled over the past 7 years. Low-income and/or poor households in particular are burdened by having to pay for their basic energy needs.

Namibian electricity distributors realise that electricity is becoming less affordable to low-income consumers. Some have started taking measures to shield their customers from ongoing tariff escalations. For example, Erongo RED has introduced inclining block tariffs and low capacity connections to assist low consumption households. These support mechanisms are achieved by way of a cross-subsidy flowing from business and high consuming residential customers to such low consuming domestic users.

Social electricity tariffs and electricity support tariffs are well-accepted in Southern Africa. They are acknowledged to be one way to ensure that low-income consumers can benefit from electrical energy, even when local electricity prices escalate rapidly. In neighbouring South Africa for example, a “free basic electricity” allocation was introduced in 2003, and inclining block tariffs for domestic consumers are widely used. Botswana introduced inclining block tariffs and capped tariff increases for domestic consumers. Other countries in the region offer various “social” electricity tariffs; these are available amongst others in Zambia, Angola, Mozambique and Tanzania.

This project establishes the principles and puts forward the design of a National Electricity Support Mechanism. The present document was preceded by two stand-alone reports presenting a) the rationale for a Namibian electricity support mechanism and assessing the options for such a mechanism [1], and b) the development of the technical mechanism of an electricity support mechanism and an assessment of the wider economic implications thereof [2]. The last part of the project as summarised in this document focuses on the first Namibian
electricity support mechanism which is to be implemented, and provides an exposition of the requirements to successfully implement the National Electricity Support mechanism. The remainder of the document is structured as follows:

- **Section 2** presents the inclining block tariff (IBT) proposal that is the backbone of the electricity support mechanism put forward in this document. The section presents the design elements of the proposed IBT, and then demonstrates how national average rates based on these design elements would look like and illustrates the associated subsidy impacts of this tariff design.

- **Section 2.4** presents the implementation principles underpinning the introduction of the electricity support tariffs, focusing on governance, implementation and the treatment of the Local Authority Surcharge (LAS).

- **Section 4** presents options for how the proposed electricity support mechanism is to be funded. It assesses the requirements and funding considerations of the different role players in Namibia’s electricity supply industry (ESI), and formulates how the support tariff (ST) charges are to be determined. The section then presents options to establish the ST Fund, and discusses how the subsidy requirements are to be pooled and distributed. The section identifies critical start-up considerations as well as the risks and associated mitigation measures, and concludes with a short overview of the projected ST Fund pool.

- **Section 5** identifies the critical policy and legal aspects required for the introduction of an electricity support mechanism in Namibia, and then summarises the likely policy, legal and regulatory changes to facilitate the introduction of the support mechanism.

- **Section 6** presents a high-level implementation plan for the introduction of the proposed electricity support mechanism in Namibia. It identifies the key role players and their roles and responsibilities in successfully implementing the proposed support mechanism. The section also provides a high-level implementation timeline, and ends with a summary of the most likely human resource and technical requirements, and likely implementation pre-requisites.

- **Section 7** provides an overview of the most important monitoring tasks to be undertaken during the implementation of the electricity support mechanism. It identifies the main tasks to be undertaken by key ESI role-players, and provides a list of critical performance criteria which are to be used to monitor the implementation process.

- **Section 7.5** identifies a number of implementation constraints that will have to be taken into account during the implementation of the electricity support mechanism, and includes possible exploits and by-passes that will necessitate vigilance during the planned implementation of the support mechanism.

- **Section 9** concludes with a summary of the key recommendations.
2 Modifications of the Proposed IBT

The “Analysis and Tariff Design” Report prepared under the present study – refer to reference [2] in the reference section at the end of this document – recommended the implementation of two connection categories, namely a “low capacity connection” and a “normal capacity connection”, each with its own inclining block tariff (IBT) comprising of four blocks each.

However, stakeholders expressed the view that a dual-IBT with four blocks each would be too complex, and would likely confuse customers. In addition, stakeholders suggested that the IBT for the low capacity connection should be reduced from four blocks to three blocks, to reduce its complexity, and because not many consumers on such a connection type are expected to consume more than 200kWh per month.

The ECB therefore decided that an IBT will only be offered to domestic low capacity connections on a 20 Ampere supply, and that such an IBT will only comprise of three blocks. Low income and low usage normal capacity domestic end-users will be encouraged to switch to low capacity connections. This simplified approach is seen as an introductory measure, to start the implementation of support tariffs, but does not mean that other types of support tariffs will not be offered in future.

This document therefore proceeds on the basis that only the low capacity connection IBT with three blocks is taken forward for implementation.

2.1 Modified Low Capacity IBT – Design Elements

Table 1 summarises the main IBT design elements for low capacity connections.

<table>
<thead>
<tr>
<th>Block number</th>
<th>Energy range</th>
<th>Tariff</th>
<th>Rate of increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>Block 1</td>
<td>&lt;= 50kWh/month</td>
<td>NamPower’s generation cost</td>
<td>the lower of inflation plus 4% or NamPower generation price increase</td>
</tr>
<tr>
<td>Block 2</td>
<td>&gt; 50 kWh/month to &lt;= 200kWh/month</td>
<td>NamPower’s total cost (generation plus transmission)</td>
<td>follows NamPower’s annual total cost increases</td>
</tr>
<tr>
<td>Block 3</td>
<td>&gt; 200kWh/month</td>
<td>Normal capacity connection domestic PPM tariff for distributor</td>
<td>follows annual average distributor tariff increases</td>
</tr>
</tbody>
</table>
The tariff for normal capacity pre-paid metered connections is proposed to be the same as the IBT block 3 tariff. In this way, domestic pre-paid metered electricity tariffs are uniform and irrespective of the connection type once the monthly consumption exceeds 200 kWh.

2.2 Modified Low Capacity IBT – National Average Rates

Applying the design elements as summarised in section 2.1 results in national average rates for domestic consumers on prepaid meters for 2013/14 as shown in Figure 1 below.

![Proposed IBT and normal PPM Tariffs for 2013/14](image)

**Figure 1: Proposed IBT at 2013/14 Tariff Levels**

The proposed low capacity block 1 rate is 48% of the domestic PPM target rate; block 2 is 72% of the PPM target rate, while the IBT block 3 tariff and the normal capacity connection tariff are equal to the domestic PPM target rate.

A consumer with a low capacity connection using 50kWh per month would save N$41 each month on electricity as a result of switching to a low capacity IBT as proposed. Such a saving is considered substantial for a low-income household, and is further explored in section 2.4 below.

2.3 Modified Low Capacity IBT – Subsidy Implications

Figure 2 below presents an estimate of the subsidy requirements arising as a result of the introduction of the low capacity connection block 1 and block 2 tariffs as a function of time. It also illustrates that both the block 3 IBT and normal capacity connections are subsidy-neutral, i.e. they neither require nor generate a surplus to the subsidy pool.
The subsidy requirements of block 1 and 2 of the proposed low capacity connection IBT are expected to rise from some N$35 million in 2014/15 to approximately N$260 million in 2021/22 under base case assumptions.

**Figure 2: Subsidy needs and surplus generated as a result of the modified support tariffs**

The IBT as introduced has only two tariff blocks that benefit from subsidies, i.e. block 1 and 2 of the low capacity connection tariff. Applying the tariff design principles as introduced in section 2.1, the main part of a subsidy will be required by block 1, while between 28% and 42% of the total subsidy requirements are allocated to block 2, as shown in Figure 3 below.

**Figure 3: National subsidy requirements of low capacity connection block 1 & block 2 users**
2.4 **Modified IBT – Consumer Benefits**

The support tariff is intended to deliver electricity cost savings to low income domestic consumers. To demonstrate how much users will save at different consumption levels an analysis has been prepared for users consuming 50kWh per month (refer to Figure 4), or 100kWh per month as shown in Figure 5.

![Monthly N$ Savings Due to IBT for consuming 50kWh/month](image1)

**Figure 4: Monthly savings when using 50kWh per month**

A PPM user consuming 50kWh per month (which equates to basic services such as lighting, cell phone charging and some entertainment) will save some N$41 per month at current tariffs with the monthly electricity cost being reduced from some N$78.50 to some N$37.50.

![Monthly N$ Savings Due to IBT for consuming 100kWh/month](image2)

**Figure 5: Monthly savings when using 100kWh per month**
A user consuming 100kWh per month (which equates to basic services such as lighting, cell phone charging, some entertainment and basic electric cooking) will save some N$63 per month at current tariffs with the monthly electricity cost being reduced from some N$157 to some N$94.

Figure 6 illustrates the savings as a percentage of the normal PPM tariff electricity bill for a number of consumption scenarios.

![% Saving on Monthly Bill]

**Figure 6: Percentage savings on monthly electricity cost**

Consumers using up to 50kWh per month will save some 50% to 60% on their electricity cost while those consuming 100kWh per month will still save some 40% on their electricity bill. As a comparison, a household using 500kWh per month on the low capacity connection (such as a middle income household where electricity is used conscientiously) will save only some 15% on their electricity bill. Figure 6 illustrates that the proposed support tariff mechanism does offer significant savings opportunities to consumers having low monthly electricity consumption requirements.
3 Implementation Principles

3.1 Governance

3.1.1 General Principles

The following general principles underpin the electricity support mechanism:

a) All electricity distributors are to offer domestic support tariffs.
b) Domestic support tariffs are only offered by way of pre-paid metered low capacity connections which are limited to a 20 Ampere supply using an IBT structure.
c) The tariff charged in a particular IBT block only applies to one IBT block, and each IBT block has a separate tariff.
d) Only three IBT blocks are to be used initially, to minimise customer confusion.
e) Special domestic ‘support tariffs’ as may have been used in the past, for example for pensioners, will be phased out and will no longer be offered, unless these are specifically motivated to and approved by the ECB.

3.1.2 Regulatory Principles

a) Each year, the ECB sets the block 1 and block 2 tariffs, which are applied in all distribution areas.
b) Each distributor may propose its own IBT block 3 and normal capacity domestic tariffs, which are to be approved by the ECB. These tariffs are to be based on the principles in Table 1 and comply with the processes elaborated in section 3.3.
c) Distributors that do not have the required vending systems to offer an IBT must upgrade these.
d) The specific metering and vending capabilities of each distributor are taken into account when distributor-specific support tariffs are approved by the ECB.

3.1.3 Subsidy Principles

a) The subsidies required to implement the support tariffs are levied (explicitly or indirectly) from all electricity consumers, except those that are to benefit from it.
b) Low-income consumers are to be incentivised to change to a low capacity connection.
c) The cost to migrate customers from normal to low capacity connections is to be borne by distributors.

3.1.4 Levy and Surcharge Principles

a) Electricity levies, such as the ECB and NEF surcharges, are to be included in all domestic electricity tariffs, including the support tariffs.
b) The LAS is charged unless Government decides to phase out, replace or have the LAS paid directly from other funds.
3.1.5 National Standardisation Principles

a) The low capacity domestic IBT block 1 is set at 50kWh per month for all distributors, and its tariff (excluding LAS) applies nationally.
b) The low capacity domestic IBT block 1 is to be equal to NamPower’s energy cost, i.e. the generation revenue requirement.
c) The annual increase of the block 1 rate is to be capped, to provide an additional shield to end-users from the impacts of large future generation cost escalations (although in the long run the block 1 rate should be the same as the NamPower generation cost).
d) As a national default, the low capacity domestic IBT block 2 is set at greater than 50kWh and up to 200kWh per month. However, distributors can motivate modifications to the block size as part of their annual tariff application to the ECB, if required.
e) The low capacity domestic IBT block 2 is to be equal to NamPower’s total cost of supply, which is the sum of generation plus transmission revenue requirements.
f) The annual increase of the block 2 rate is to follow NamPower’s annual increase of the total cost of supply.
g) The low capacity domestic IBT block 3 is set at greater than 200kWh per month, and is the average (un-subsidised) domestic consumer rate for the distributor.
h) The normal capacity PPM tariff is identical to the IBT block 3 tariff.
i) Both the domestic IBT block 3 and the normal capacity PPM tariff are to be increased following the annual average distributor tariff increases.

3.2 Implementation

3.2.1 Definition of a domestic customer

A domestic customer is defined as a single household connection to a residential dwelling. Domestic customers include the following:

- Dwellings in a rural locality used primarily for residential purposes;
- Individually supplied (at low voltage) residential dwellings forming part of a formal housing development on a farm or plot;
- Separately supplied residential dwellings in a non-residential zoned area.

Domestic customers exclude the following:

- A farmstead supplied by a dedicated transformer point from a rural medium voltage network where the point of supply is at the transformer point (i.e. the arrangement at a normal electrified commercial farm. Even if the farm workers are supplied by the farmer the farm’s supply will not be considered a domestic customer);
- A house on a plot supplied by a dedicated transformer point from a medium voltage network (i.e. the arrangement found close to a number of towns such Otavi plots, Brakwater area, Swakop river plots and others);
- Residential accommodation which is used primarily for commercial purposes, such as Cuca shops, irrespective of whether or not the end-user resides there or not;
Bed-and-breakfast establishments, guesthouses and hotels, even if located in an area zoned for residential purposes.

The definition of a domestic customer as provided in this section relates to the purpose of the electricity supply, and is not determined by the juristic nature of the customer or the zoning of the area in which the domestic end-user resides.

3.2.2 Tariffs

- All distributors are to develop and apply for new domestic tariffs that comply with the electricity support mechanism;
- The ORM is updated to include the IBT, which is done under the present project;
- Electricity support mechanisms, such as pensioner tariffs, are to be phased out.

3.2.3 Vending and Metering

- Select licensees may have to change their vending approach from group coding to individual coding of meters. However, all major licensees already use individual coding, but the Hardap and Karas Regional Councils and small licensees in southern Namibia may still use magnetic card-based vending systems and/or group coding;
- Some of the smaller distributors may have to upgrade their vending systems if individual coding is not feasible or not supported by the old vending software or hardware;
- Some licensees may have to replace some or all prepayment meters if they are still using proprietary meters (as opposed STS standard meters);
- The Hardap and Karas Regional Councils may have to change vending systems to be able to provide on-line vending to customers in remote locations which may currently still be supplied via “shoeh box” sales of prepaid tokens;
- Licensees will have to replace prepayment meters of end-users converting to low capacity connections if these do not have a programmable current limiter.

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1 This can lead to some companies benefiting, for example if they pay the electricity bill on behalf of employees occupying company-owned houses. However firstly this will not likely be a wide-spread occurrence and secondly it would require a disproportionate administrative effort to make a determination avoiding this situation in every case (because all connections where the customer receiving the bill is not a natural person would have to be investigated and a determination made).

2 One method of doing this may be to offer the affected customers a free of charge conversion to 20 Amps on a priority basis. This will not cover all the pensioners (those pensioners living in million dollar houses are unlikely to go to 20 Amps, but then they are not truly poor if measured by the national concept of “poor”), but will cover those who are poor by the NHIES definition.
3.2.4 Rules for the Conversion to Low Capacity Connections

- Customers wishing to convert to a low capacity connection can do so free of charge, i.e. no conversion fee is payable.
- A Conversion to a low capacity connection is a once-off offer, i.e. any customer will only be converted free of charge once. All subsequent conversions attract a conversion fee.
- Customers who convert to a low capacity 20 Amp connection and find that this does not fulfil their requirements have to pay a conversion fee to change back to a normal capacity connection.
- The basis of the conversion fee is that a technician will have to travel to the meter to process the engineering token for changing the current limiter setting. This should not be left to the customer, and certainly not in the case of converting to a low capacity connection because the customer could just not enter the token and remain on a normal connection while paying low connection prices.

3.3 LAS Treatment and Distributor Rate Calculation

All low capacity tariffs are to include the LAS as approved by the ECB per area, as included in all other distributor electricity rates. The low capacity block rates are to be determined as follows:

For distributors with an explicit and area-differentiated LAS:

- For the low capacity block 1 IBT, use the approved NamPower energy rate (or equivalent if capped) as provided by the ECB following the annual approval of NamPower’s tariffs, and add the LAS as allowed by the ECB per area;
- For low capacity block 2 IBT, use the total NamPower rate as provided by the ECB following the annual approval of NamPower’s tariffs, and add the LAS as allowed by the ECB per area;
- In year 1 of the introduction of the IBT, the low capacity block 3 tariff is determined by taking the average domestic rate of the previous year, and adding the overall percentage tariff increase calculated on a revenue requirement basis. The percentage addition is calculated without the LAS, and the area LAS is then added back. In the years following the introduction of the IBT, this rate is calculated by applying the overall tariff increase percentage of the distributor to the previous year’s rate for the low capacity block 3, unless otherwise agreed to with the ECB, for purposes of re-balancing rates or national tariff harmonisation;
- The normal capacity rate is identical to the low capacity block 3 tariff.
Figure 7: Determination of the year 1 tariffs for distributors with explicit LAS

Figure 8: Determination of tariffs after year 1, for distributors with explicit LAS
For distributors **without** an explicit and area-differentiated LAS:

- The same calculations as above are followed, except that the average LAS for the distributor is added, instead of the individual area LAS.

- The distributor average LAS is determined by dividing the total approved LAS amount for the year into the total LAS-bearing units expected to be sold, i.e. excluding units sold in non-LAS areas, such as ex-NamPower customers. Alternatively, where the ECB has approved an LAS expressed in c/kWh, this unitised LAS is used.

**Figure 9: Determination of the year 1 tariff for distributors without explicit LAS**
Figure 10: Determination of tariffs after year 1, for distributors without explicit LAS

The tariff determination processes depicted in Figure 7 to Figure 10 only apply to the low capacity connection IBT and to the prepaid rate for normal capacity connections.

The determination of rates for conventionally-metered connections with capacity and/or basic charges should follow a similar approach to that applied in case of the low capacity block 3 tariff, i.e. the general approved tariff increase for the distributor should be applied.

It must be noted that the tariff determination process shown above is the standard procedure which may be modified by distributors if approved by the ECB. The ECB may decide to cap the normal capacity energy rate, or modify the above methodology to achieve greater harmony between the tariffs charged by different distributors.
4 Funding the National Electricity Support Mechanism

Whenever subsidies are granted to domestic electricity consumers, for example by way of the IBT proposed, they must be funded. Previous reports have recommended that the funding load be spread as wide as possible among electricity consumers, as permanent Government funding is considered unlikely. This implies that all electricity users, except those that are explicitly benefitting from the support mechanism, should contribute.

Funding the support tariff could be achieved in a variety of ways, including

- adding a levy to the bill of all transmission customers, including distributors; and/or
- increasing the price paid by commercial and industrial consumers, or adding a levy to their tariff; and/or
- increasing the tariff of select end-users to contribute to a subsidy pool; and/or
- a combination of the above.

The design of the funding mechanism should be kept as simple and transparent as possible. This document proposes that the support tariff funding mechanism is created by way of introducing a support tariff (ST) charge paid by all NamPower transmission customers, including distributors. Such an ST charge will manifest itself as a general tariff increase for all distributor electricity end-users, except those end-users who are explicitly shielded from it. It is envisaged that only low capacity connection block 1 and block 2 users are subsidised.

By levying the ST charge onto all electricity-consuming entities and users, the reach of the subsidy pool is maximised, which in turn reduces the contributions required by any particular end-user group.

Two fundamentally different options exist to collect and disburse the ST contributions:

a) **a physical ST Fund** – receiving all ST contributions and disbursing all payments to distributors and based on an actual fund account; or

b) **a virtual ST Fund** – as a bookkeeping mechanism that ensures that ST receipts and payments are regularly reconciled.

4.1 The Physical ST Fund

A physical ST Fund requires a separate bank account which enables the transparent movement of ST contributions into and out of it. Transmission clients that have domestic customers on low capacity connections are eligible to receive regular payments from the Fund, while all transmission customers pay a monthly levy into the Fund.

A Fund Administrator ensures that in- and outflows are made in accordance with the contributions as approved by the ECB. While a physical Fund enables the transparent in- and outflow of ST Funds, it requires seed capital to commence operations and to ensure that the Fund can make regular payments despite irregular funding inflows.
As illustrated in Figure 11 below, all NamPower transmission customers including distributors are to pay the monthly ST charge. The amounts billed and collected flow into the ST Fund. In order to become operationally functional, the ST Fund is capitalised at the commencement of the implementation of the ST mechanism. Capitalisation is achieved by way of a once off contribution that covers the cash flow requirements until sufficient ST charges accumulate in the fund. Monthly payments are made from the ST Fund to distributors. The amounts payable will be determined annually in advance by the ECB according to a defined methodology.

![Diagram of ST Fund management](http://example.com/diagram.png)

**Figure 11: Proposed Support Tariff Funding Mechanism**

Table 2 identifies some of the main advantages and disadvantages of a physical ST Fund.

**Table 2: Advantages and Disadvantages of a Physical ST Fund**

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Transparent funding in- and outflows</td>
<td>• Seed funding is essential to operationalise the Fund</td>
</tr>
<tr>
<td>• Traceability of all movements into and out of the Fund is guaranteed</td>
<td>• Necessitates an ST Fund Administrator, which increases the overall transaction costs</td>
</tr>
<tr>
<td>• Funding outflows can be individually controlled, thus limiting potential abuse</td>
<td>• Necessitates a separate bank account, which increases the overall transaction costs</td>
</tr>
<tr>
<td>• Simple to audit</td>
<td>• An accumulation of funds may tempt the misappropriation of such funds</td>
</tr>
<tr>
<td>• Could receive external grants, e.g. from GRN</td>
<td></td>
</tr>
</tbody>
</table>

National Electricity Support Tariff Mechanism
4.2 The Virtual ST Fund

A virtual ST Fund is a mere bookkeeping mechanism. NamPower, who raises invoices to all its transmission clients, receives regular payments for the transmission bills plus the ST charge contributions. At the same time, NamPower would grant ST rebates on the transmission bills of those transmission clients who have low capacity connected customers and who have been approved by the ECB to receive ST fund benefits. The ST charge percentage and individual ST rebate percentages will be determined by the ECB. The Fund’s reconciliation would take place on a monthly basis. A virtual ST Fund will not balance every month, as the timing of ST contributions into the Fund will not exactly match.

What renders such a Fund virtual is that it is a mere bookkeeping tool that enables the regular reconciliation between the additional revenues and reduced revenues received as a result of all ST payments by all transmission clients. A mismatch between the funding inflows will result in regular deficits, which will have to be bridged in similar ways to the physical ST Fund.

The virtual Fund’s ongoing liquidity is critical, and makes it vulnerable. In the physical ST Fund proposed above, liquidity is ensured by way of a once-off seed fund contribution. In the case of the virtual ST Fund, the ST Fund Administrator will be responsible to ensure its ongoing liquidity. This places the burden of ensuring the liquidity of the Fund on the Fund Administrator, which requires additional risk mitigation measures by the Administrator, which in turn increases the cost of administering the Fund. In addition, a virtual Fund as described above is likely to be less transparent than its physical counterpart, which increases the necessity and cost to have it audited.

Table 3 identifies some of the main advantages and disadvantages of a virtual ST Fund.

Table 3: Advantages and Disadvantages of a Virtual ST Fund

<table>
<thead>
<tr>
<th>Advantages</th>
<th>Disadvantages</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Minimal cost to administer the Fund</td>
<td>• Financial risk is present for the entity that runs the fund (NamPower)</td>
</tr>
<tr>
<td>• No overheads imply minimal transaction costs</td>
<td>• Roles and responsibilities of the ST Fund Administrator require careful definition</td>
</tr>
<tr>
<td>• Can be devised to operate largely automatic with rules for payments and transfers</td>
<td>• Reconciliation of in- and outflows is essential, but likely more complex than in a physical Fund</td>
</tr>
<tr>
<td>• Cash flows automatically follow consumption, incl. seasonal and time-of-use changes</td>
<td>• Interventions by the ECB, e.g. as a result of unexpected impacts on the distribution industry, are less simple as a result of the mechanistic rules required for a virtual Fund</td>
</tr>
</tbody>
</table>

Weighing up the advantages and disadvantages of a physical versus a virtual ST Fund leads to the conclusion that a physical ST Fund is the preferred vehicle to implement the ST mechanism as proposed in this document.
The remainder of the document therefore assumes that a physical ST Fund will be established.

4.3 Funding Considerations for Different Customer Groups

4.3.1 NamPower Transmission Customers including Distributors

All NamPower transmission clients make a contribution to the ST Fund, which is reflected on their monthly NamPower bill. The contribution is calculated as a set percentage charge based on the entire bill, but excluding the legislated ECB and NEF levies.

The ST contribution is to be shown as a separate charge on the bill. The percentage ST contribution is determined by the ECB in each year, and is approved as part of the normal NamPower tariff application process.

4.3.2 Distribution Sector Commercial and Industrial Customers

Non-domestic distribution sector customers will not have to pay an explicit levy/charge to pay for the support tariff subsidy. They will however face an extra tariff increase because of the ST charge which increases the distributor’s bulk electricity cost.

4.3.3 Domestic Consumers on Normal Capacity Connections

Domestic consumers having a normal capacity connection do not pay an explicit levy/charge to the support tariff subsidy, except through the increased domestic end-user tariff charged by the distributor.

4.3.4 Domestic Consumers on Block 3 Low Capacity Connections

Domestic consumers on the block 3 tariff for low capacity connections do not pay an explicit levy/charge to the support tariff subsidy, except through the increased domestic end-user tariff charged by the distributor.

4.3.5 Domestic Consumers on Block 1 and 2 Low Capacity Connections

Domestic consumers on the block 1 and 2 tariffs for low capacity connections benefit from reduced electricity tariffs, which are subsidised through the support tariff contribution paid by all transmission customers and including all distributors.

4.3.6 NamPower Distribution End Consumers

NamPower Distribution supplies power to three classes of customers:

- Commercial farms and other commercial users;
- Small distributors such as regional and village councils;
National Electricity Support Tariff Mechanism

- Domestic consumers in a number of small localities, such as Grünau, Stampriet and Noordoewer.

NamPower Distribution “buys” its bulk power from NamPower transmission in an internal ring-fenced transaction. The following implications are derived from these arrangements:

- NamPower Transmission’s “sales” to NamPower Distribution include the ST charge as is levied to all NamPower transmission customers;
- If domestic consumers become low capacity connection end-users they benefit from the support tariffs in the same way that all low capacity connection end-users do;
- All customers served by NamPower Distribution, except domestic consumers who become low capacity connection end-users, contribute to the support tariff through increased end-user costs that include a contribution to the ST Fund; and
- NamPower Distribution is entitled to make a claim on the ST fund in the same way as all other distributors do.

4.4 The ST Charge

The ST charge is set by the ECB, and is to be levied to all NamPower transmission customers.

This ST charge is to be separately legislated, similar to the NEF levy and ECB levy. While the Electricity Act of 2007 does not empower the ECB to introduce levies other than the ECB levy, the ECB could introduce the ST charge in form of a tariff which the ECB is empowered to govern. However, due to the nature of the proposed ST charge, it is not deemed appropriate to treat it as an additional tariff.

It is therefore recommended that the ST charge is levied as a set percentage of the total of all tariff charges, but excluding the ECB and NEF levies. In this way, a percentage ST charge is to appear on NamPower’s monthly transmission bill to all transmission clients, and is to be levied on all transmission charges that attract value added tax (VAT), i.e. all charges except the ECB and NEF levies.

The VAT status of the ST charge needs to be clarified if dedicated legislation is introduced.

4.5 The ST Fund

The pooling of ST charges requires the establishment of a formal ST Fund, which is to receive and disburse moneys. This Fund is to be operated by a Fund Administrator. Both in- and outflows from the Fund are to be strictly governed, and are to be set by the ECB’s ST charge that each transmission entity is eligible for. In this way, contributions to the Fund and allocations from the Fund are strictly based on an agreed methodology, which also limits the roles, responsibilities and risk to the Fund Administrator.

Four separate options for administering the ST Fund present themselves:
4.5.1 Virtual ST Fund in NamPower

The ST Fund could be established as a virtual fund based on accounting measures within NamPower. This would keep the cost of administering the fund low since no significant additional effort will be required besides setting annual ST charge percentage and ST rebate percentages. The fund design would seek to match expected income from ST charges on all transmission bills to expected reductions in transmission bills of qualifying distributors by means of an ST rebate.

The ST Fund is to be established by way of legislation, to ensure that the basis of its governance and operational modalities are defined. If the ST Fund is to be administered by NamPower, the utility’s responsibilities in terms of the Fund would be delimited in such legislation.

4.5.2 Physical ST Fund in NamPower

The ST Fund could be established as a ring-fenced function within NamPower. This would keep the cost of administering the fund low, assuming that NamPower would be remunerated from the Fund for reasonable incremental costs incurred in administering it. The Fund would have a dedicated bank account into which NamPower would transfer monthly ST charges as billed, and from which ST payments would be made to distributors.

The ST Fund is to be established by way of legislation, to ensure that the basis of its governance and operational modalities are defined. If the ST Fund is to be administered by NamPower, the utility’s responsibilities in terms of the Fund would be delimited in such legislation.

The Fund would require seed capital to cover for variations in cash in- and outflows. Such seed capital would best be provided by way of a grant from Government, or loan. If a loan is to be used, the ST charge will have to include loan repayments.

4.5.3 ST Fund in NEF

The ST Fund could be established as part of the existing NEF, which is established and has associated governance and administrative structures. Currently, the NEF administers the NEF levy on electricity, and the ST charge could be implemented in form of an increased NEF levy. In this way, the ST charge would merely need to be gazetted by the Minister of Mines and Energy, thus enabling the Fund’s fast tracked implementation. In addition, the ST Fund could likely rely on the NEF’s accumulated funds to serve as the Fund’s seed capital.

A written agreement between the NEF, the Minister of Mines and Energy and the ECB would be needed to formalise this use of the NEF and clarify the processes of determining the increased NEF levy and the basis on which payments are to be made from the NEF to qualifying distributors.
4.5.4 ST Fund Commercially Managed

The ST Fund could be established through its own legislation, similar to how an ST Fund is to be established within NamPower. Administration of the Fund could be undertaken by a commercial funds administrator, possibly within a commercial bank or a commercial investment outfit offering such services.

The governance of the fund would need to be clearly defined, including the reporting relationship of the fund administrators (i.e. to whom the administrator would be responsible, such as the ECB or the Minister of Mines and Energy).

On a monthly basis, NamPower would transfer the ST charges levied into the Fund (allowing a reasonable time such as 45 days for collection), while the administrators would make monthly payments to distributors on instruction of the ECB, who will determine the needed payments.

The Fund would require seed capital, which could be provided through a once off grant or loan.

Weighing up the advantages and disadvantages of the above options for an ST Fund Administrator leads to the conclusion that NamPower as the ST Fund Administrator is the preferred option with a preference for the physical fund option.

The remainder of the document therefore assumes that NamPower is tasked to assume the role of ST Fund Administrator subject to the Minister’s prerogative in consultation with the Regulator to appoint another entity to assume the role of ST Fund Administrator.

4.6 Subsidy Pooling and Subsidy Distribution

The ST charge to be levied to all transmission customers including distributors is to be accumulated and accounted for by the ST Fund Administrator. The ST Fund is to pool all contributions made by all transmission entities, and make monthly payments to those entities that distribute electricity to low capacity end-users, on instruction of the ECB. The ST Fund is to be ring-fenced from the administrator’s other businesses, and is to be kept in a separate bank. Annual independent audits are recommended.

The actual contribution that each transmission client is required to make into the ST Fund is reflected as a percentage charge on each transmission customer’s bill, and will be set annually by the ECB, a further elaborated in 4.6.1 below, and is illustrated in Figure 12.
4.6.1 Determination of the Annual Subsidy Contribution

The determination of the annual subsidy contribution proceeds in two phases:

1. The first phase – which is undertaken concurrently with the NamPower tariff review - entails the use of a model based on ORM data for the current fiscal year and forecasts of consumption changes in the next year. The model is used to estimate the total subsidy requirement in the next year, which results in an estimate of the total ST charge. The ST charge that is part of NamPower’s tariff will initially be set on the basis of this estimate, and will be published as part of NamPower’s approved tariff.

2. The second phase of the process serves to align the overall subsidy estimate with the actual subsidy requirements in a given year. All distributors apply for their tariff reviews using the ORM. In this way, the distributors provide an updated forecast for the subsidy amount they require. The ECB matches these amounts to the subsidy estimate made in the first phase. If there is a material difference between the ECB’s estimate and the distributors’ estimates, and the ECB finds that the distributors’ estimates are justified, the ECB revises the ST charge for the upcoming fiscal year and issues an update of NamPower’s approved tariffs.

The process for determining the ST charge for each distributor is depicted in the figure below:
The only below average increase for DOM customers is through the IBT; all others get the average increase, unless max rate is capped.

**Figure 13: Proposed Individual ST Fund Request Determination Process**

The guiding principle underlying the ST Fund request calculation is that domestic consumers should get the average tariff increase required for the distributor, as based on the revenue requirement and projected sales growth, except for the modification introduced by block 1 and block 2 of the IBT, which are the subsidised blocks for low capacity connections.

The total subsidy requirement of all distributors determines the total ST charge that needs to be added to NamPower’s transmission bills. It is noted that the above approach presents a dilemma in that NamPower’s tariff application precedes the distributor application process. This implies that the NamPower tariff is approved before the distributors finalise their applications. Since the ST Funding requirement is not known at the time of NamPower’s tariff review process the percentage ST charge can only be estimated. However, the two-phased approach will allow the ECB to forecast the approximate annual subsidy requirement from historical records. In doing so, the ST charge percentage is best set slightly above the forecast requirement to cover for unexpected subsidy needs. This may result in a slight accumulation of surplus funds. This is to be taken into account when determining the ST charge percentage of the forthcoming year.

### 4.6.2 Distribution of Pooled Subsidies

The subsidy pool needs to be distributed between eligible distributors. Each such distributor’s individual subsidy requirement is determined by the total cost of having consumers with a low capacity connection on block 1 and 2 of the IBT. Each distributor will have to provide an estimate for the year ahead on how much subsidy funding is to be required to cover the shortfall introduced as a result of the consumption by block 1 and block 2 end-users.
4.6.3 Funding Flows within Distributors

Within the distributor the proposed flows are as illustrated in Figure 14:

Within the distributor the incoming ST Fund payments are allocated towards the subsidy benefiting domestic consumers having low capacity connections. Surpluses are generated by normal capacity domestic consumers and those with low capacity connections in the block 3 bracket, as well as commercial and LPU customers. The different contributions accumulate to a distributor’s monthly ST charge, which is payable to the ST Fund Administrator, where they are pooled in the ST Fund. The following sections provide additional details on the proposed subsidy collection and distribution mechanism.

4.7 Start-Up Considerations

4.7.1 Start-Up Capital for the ST Fund

The establishment of the ST Fund is likely requiring a seed fund, to pay for the initial funding requirements submitted by distributors. Such a seed fund could be availed by Government, or the National Energy Fund, or by way of a loan.
If seed funding is made available through a loan, the ST charge percentage must be set to recover the interest charged plus loan repayments until the loan is fully repaid. It is also recommended that the ST charge for the initial year is set at a level that allows for the accumulation of a buffer to cover for a minimum of one month’s ST payments to distributors without having to draw on a loan in future.

Alternatively, the ST Fund could be allowed to accumulate its own buffer capital by delaying the first subsidy pay-outs, until sufficient working capital reserves are in place. This should not have a significant impact on distributors who are eligible to receive subsidy funds, as it takes several months to commence with the roll-out of the low capacity conversions.

4.7.2 Implementing ST in Distributors

At the commencement of the implementation of low capacity connections benefitting from support tariffs, distributors will not have received any contributions from the ST Fund. However, realising that it is likely to take several months for the roll-out of low capacity connections, the impact on distributors not receiving immediate compensation for the first-wave of low capacity connection subsidies is likely to be low. Distributor cash flows will return to normal as soon as the first payments are received from the ST Fund.

4.8 Risks and Mitigation

The subsidy pooling and distribution mechanism is based on various estimates and assumptions. The main risk factors relate to volume risks, including

a) NamPower’s sales may differ from the forecast, which implies that the ST revenue derived through sales may be more or less than what is required. If the sales forecast overestimated sales, the ST revenue estimate is higher than what it really is. Since the ST contributions are fixed amounts payable to distributors, there is a risk that the pool is exhausted if NamPower’s revenue projections are over-optimistic.

b) NamPower may fail to collect all of the billed ST charges from its customers, or may experience delays in collecting them;

c) The distributors’ subsidy requirements may be larger or smaller than forecast, depending on the actual consumption in the subsidised blocks and the rate of adoption of low capacity connections in the initial years of introducing the IBT;

d) The asynchronicity of in- and outflows from the ST Fund, which introduces the risk that claims on the Fund exceed in-flows into the Fund.

4.8.1 NamPower’s Volume Risk

To some extent, NamPower’s volume risk can be mitigated by allowing a slightly higher ST charge than is suggested by the forecast. This will enable the establishment of buffer reserves in the ST Fund. It is therefore recommended that the ST charge percentage – especially in the
first year of implementation – is set materially higher than forecast to establish a surplus in the ST Fund.

During the Fund’s start-up, the Fund Administrator is to inform the ECB if any monthly pay-out from the Fund exceeds the income. This will enable the ECB to increase the ST charge as necessary. Following the establishment of a reasonable operating surplus, the Fund Administrator is to inform the ECB once the Fund volume decreases to less than one months’ worth of expected pay-outs, for the ECB to take appropriate action.

4.8.2 NamPower Collection Risk

The second risk can be mitigated partly by the same measure as for the first risk, i.e. designing the ST charge to initially over-recover materially in order to build a buffer in the ST Fund.

However, it is proposed that the ultimate collection timing risk is placed on NamPower, i.e. payments into the pool become due within 45 days of billing irrespective of the rate at which such contributions are collected. This can be supplemented with a reconciliation mechanism (to become part of the already existing reconciliation mechanism) to allow NamPower to recoup the ST charge portion of bona fide bad debts in the following financial year.

4.8.3 Distributor IBT Volume Risk

Each distributor has some control over the rate at which customers are allowed to switch to low capacity connections. The conversion rate allowed by each distributor will have to take the available resources into account, and thus determine each distributor’s subsidy requirement.

It is recommended that the each distributor’s annual application for ST Funds is informed by the actual subsidy requirements and the planned speed of introduction of low capacity connections. In addition, each distributor is to communicate the number of planned conversions to be undertaken in each year to the ECB, for inclusion in the subsidy forecast model. Distributors will also have to communicate how and where conversions to low capacity connections will be undertaken so that consumers wishing to be converted to such connection types understand when they will most likely benefit from such a change-over.

Once the bulk of low capacity conversions have taken place, which is expected to have happened after two or three years, the distributors’ IBT volume risk should reduce significantly, and consumption patterns will likely stabilise which allows for accurate future sales projections.

4.8.4 ST Fund Depletion Risk

There is a risk that outflows from the ST Fund occasionally exceed in-flows. This risk is highest during the initial years of the ST Fund’s existence, during which the support tariff is being implemented and major uncertainties exist about that pace at which implementation occurs.

This risk can be mitigated in part by providing the ST Fund with adequate start-up funding. Such seed funding, as well as the proposed level of the ST charge in the first years of
implementation should be computed to ensure the liquidity of the Fund, and thus cater for higher adoption rates of low capacity connections than suggested by the base case presented in this document.

4.9 Accounting Treatment of the ST Charge

The following issues need to be clarified in connection with the proposed ST charge:

- The ST charge should not be deemed revenue in NamPower’s hands (because it will be funds collected on behalf of someone else). The ST charges levied, the ST Fund held and payments made from the Fund to distributors should all remain on the balance sheet and not affect the income statement of NamPower;

- On the same basis payments made to distributors from the ST Fund will not be an expense but a disbursement against a liability on the balance sheet;

- The ST Fund bank account will at all times balance against ST charges levied and ST Funds due to the distribution sector;

- The ST charge on NamPower customers should not attract VAT since it is not related to the supply of a good or service but rather a legislated levy, similarly ST Funds received by distributors should not attract VAT either; and

- ST Fund payments received by distributors should not be deemed revenue for income tax purposes in order to minimise the price of electricity to consumers.

4.10 Projected Funding Pool

This section presents the projection of the ST Fund requirements, taking the expected funding requirements of each distributor into account. The projection is used to forecast the percentage ST charge to be levied on all transmission customers to fund the expected annual ST requirements. It must be noted that these projections are made without taking into account individual area rates, and the final computation may differ significantly from these projections.

Table 4: Projected Annual ST Fund Requirements

<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>NORED + OPE</td>
<td>N$ millions</td>
<td>11.37</td>
<td>26.55</td>
<td>46.07</td>
<td>56.09</td>
<td>67.21</td>
<td>78.55</td>
<td>90.12</td>
</tr>
<tr>
<td>CENORED</td>
<td>N$ millions</td>
<td>5.19</td>
<td>12.42</td>
<td>21.26</td>
<td>24.48</td>
<td>28.14</td>
<td>31.61</td>
<td>34.89</td>
</tr>
<tr>
<td>Erongo RED</td>
<td>N$ millions</td>
<td>5.38</td>
<td>10.88</td>
<td>18.20</td>
<td>21.90</td>
<td>26.02</td>
<td>29.86</td>
<td>33.46</td>
</tr>
<tr>
<td>Windhoek</td>
<td>N$ millions</td>
<td>4.16</td>
<td>8.47</td>
<td>14.49</td>
<td>18.22</td>
<td>22.38</td>
<td>26.40</td>
<td>30.47</td>
</tr>
<tr>
<td>Central &amp; South excl Windhoek</td>
<td>N$ millions</td>
<td>5.37</td>
<td>13.14</td>
<td>22.79</td>
<td>26.28</td>
<td>30.17</td>
<td>33.69</td>
<td>36.99</td>
</tr>
<tr>
<td>TOTAL</td>
<td>N$ millions</td>
<td>31.46</td>
<td>71.46</td>
<td>122.81</td>
<td>146.96</td>
<td>173.91</td>
<td>200.12</td>
<td>227.19</td>
</tr>
<tr>
<td>Expected TX ST Funds raised</td>
<td>N$ millions</td>
<td>32.71</td>
<td>73.09</td>
<td>125.46</td>
<td>148.66</td>
<td>175.27</td>
<td>201.99</td>
<td>227.19</td>
</tr>
<tr>
<td>Surplus (Shortfall)</td>
<td>N$ millions</td>
<td>1.25</td>
<td>1.63</td>
<td>2.65</td>
<td>1.70</td>
<td>1.36</td>
<td>1.87</td>
<td>1.26</td>
</tr>
</tbody>
</table>
The allocation of individual funding requirements by distributors and the total projected income from NamPower’s transmission clients is illustrated in Figure 15.

![ST Funding Pool Allocation](image)

**Figure 15: Projected Annual ST Funding Allocation**

The associated percentage ST charge needed to cover the projected funding requirements is shown in Figure 16. It is to commence at some 0.75% on total transmission charges in the financial year 2014/15, and increases to almost 3% by 2021/22. The percentage ST charge increases rapidly in the first three years, driven by the expected conversion rate of domestic customers to subsidised low capacity connections. Thereafter, the increases are mainly due to the normal growth of the customer base, and the expectation that customer numbers in the low capacity bracket will grow faster than customers having normal capacity connections. This effect is likely to be due to the rural and peri-urban electrification drives which add almost exclusively low capacity connections to the distributors’ client base.
Figure 16: Projected Annual Percentage ST Charge

Figure 17 shows the indicative domestic customer tariffs at 2013/14 tariff levels. The proposed rates suggest that the ECB may consider capping the maximum domestic tariff to achieve some equalisation between distributors.

Figure 17: Illustrative IBT Levels for the Main Distribution Areas

Figure 18 illustrates the cumulative ST Fund allocation to the distribution areas for the period between 2015 until 2022. The bulk of the subsidy is expected to go to NORED, OPE and CENORED, who have a large base of domestic customers who may wish to benefit from low capacity connections. In the case of CENORED, this is further amplified by current high tariff levels.
Figure 18: Projected Total ST Fund Allocations between 2015 and 2022
5 Policy and Legal Requirements

This section identifies those laws, rules and regulations that may require amendments or new drafting to facilitate the introduction of the National Electricity Support Mechanism. The section draws on international experience in regard to the legal and statutory support required for the successful implementation of tariff support mechanisms, and draws lessons on their applicability to Namibia. The section also assesses the need for changes to other regulatory or policy instruments, and presents a brief summary of how the proposed support tariffs meet the objectives of the existing energy policy. Lastly, this section presents a summary of changes and additions to laws and regulations.

5.1 International Experience

5.1.1 South Africa – Free Basic Electricity and IBT

South Africa introduced the free basic electricity (FBE) programme in 2003. This programme is part of the Government policy, i.e. it is not established through specific dedicated provisions in law. The FBE is funded by Government by way of grants channelled to municipalities.

The introduction of an IBT for domestic consumers in South Africa has been a decision by the regulator NERSA, under the authority of the regulator’s statutory powers.

5.1.2 Nigeria

In Nigeria, an Act provides for the establishment of a fund to support low-income customers. By virtue of the Act, a Power Consumer Assistance Fund (PCAF) was established, which is funded by revenues from electricity tariffs from electricity consumers. Utilities avail a fixed percentage of revenues collected from high-consuming end users to the PCAF, which will form the basis from which funds will be distributed to poor consumers [3]. It appears that this Act has not yet been implemented, and that various challenges continue to exist, including how beneficiaries are to be identified in a fair and transparent manner.

5.1.3 Philippines

In the Philippines: “Under RA 9136, NPC is mandated to reduce its rates for residential consumers by 30 centavos per kilowatt-hour immediately upon the effectivity of the said law. It also provides for a subsidized "lifeline" rate for marginalized or low-income electricity consumers. This will ensure that such consumers will not have to contend with higher power rates even when the cross-subsidies on electricity tariffs are removed with the restructuring of the power sector. Finally, the bill mandates NPC to carry on with its missionary function of providing electricity to non-viable, far-flung areas in the countryside even after its privatization” [4]. Pro-poor tariffs are specifically mandated through a law.
5.1.4 Mexico

In Mexico, the legal framework for electricity establishes that any subsidies are to be temporary in nature, and should be subject to the criteria of “objectivity, equity, transparency, publicity and selectivity” [5]. It appears as if there are no specific legal enablers for support to the poor, although specific cases are known where substantial subsidies are made available.

5.1.5 Argentina

In Argentina, an Outline Agreement—signed by municipalities, electricity service companies, and the provincial and national governments—regularised the situation of around 700,000 illegal users in poor urban areas of Greater Buenos Aires. Both the Peruvian DEP and the Argentine Outline Agreement promoted coordinated actions involving the participation of different institutional levels. This was more the case in Argentina, where the national, provincial and municipal authorities coordinated the initiative with electricity service companies.

5.2 Changes to Policy, Law and Regulatory Instruments

5.2.1 Policy Status

Namibia’s White Paper on Energy Policy is the country’s current energy policy document. The energy policy goal most applicable to the introduction of support tariffs related to social upliftment, which states that “households and communities will have access to appropriate, affordable energy supplies.” This policy goal is directly supported by the proposed electricity support mechanism.

Section 3.1 of the Namibian energy policy deals with electricity supply. The section does not make reference to direct support for a electricity support mechanism. In fact, it is clearly stated that prices of electricity should generally be cost reflective, which is in contradiction to the proposed support tariffs, which introduce cross-subsidies between different electricity consumer groups, which in turn distort true cost reflectivity.

However, it can be argued that the policy goal of “social upliftment” does lend support to the introduction of a electricity support mechanism, provided that this does not introduce gross distortions in cost reflectivity. The proposed electricity support mechanism is to bring about an increase of electricity prices of up to 3% (for the base case) to enable the support mechanism. This is not considered excessive, and cannot be viewed as in conflict with the energy policy.

Furthermore the energy policy document clearly recognises that some of the policy goals will in certain circumstances contradict each other and that certain trade-offs will need to be made (section 1.4 of the energy policy).
Considering the above one can argue that the electricity support mechanism is in line with the existing energy policy, but since it is not directly mentioned it would be prudent to issue an appropriate policy directive that specifically supports the proposed support mechanism. Such a policy directive should be issued by the Minister of Mines and Energy and/or by Cabinet, which would endow the proposed support mechanism with a more formal anchoring in current policy.

5.2.2 Electricity Act of 2007

The Electricity Act of 2007 empowers the ECB to fully and independently regulate electricity tariffs in Namibia [6]. This is understood to include both tariff structures and tariff levels, thus giving the ECB sufficient authority to implement support tariffs, even more so if supported by a corresponding policy directive from Government.

Section 27(6) of the Electricity Act provides for the ECB to amend a schedule of approved tariffs on its own accord on the grounds “Where a charge in a licensee’s schedule of approved tariffs is such that it compromises the efficient use of electricity ...”. Other than under this provision the ECB only has the power to approve or reject the tariffs applied for by a licensee. The provision of section 27(6) however is not deemed to be applicable for the implementation of the support mechanism.

However, the ECB has the powers to enforce changes to a schedule of approved tariffs, for example by not approving the tariffs applied for unless they are in compliance with the ECB’s tariff methodology. An example of such changes being brought about is the implementation of time-of-use tariffs, which the ECB enforced through the normal tariff application process. A similar process can be followed to get all distributors to implement a low capacity connection with an IBT plus a normal capacity connection priced in a given way.

The ECB will need to formally adjust or amend its tariff methodology for distribution tariffs, and advise all distributors about the change in methodology as well as the implementation plan for such changes.

5.2.3 Legal Support for the ST Charge and ST Fund

The Electricity Act of 2007 does not specifically empower the ECB to introduce levies on electricity besides the ECB levy intended to fund the ECB. The Act does however empower the ECB to regulate tariffs, but the proposed ST charge is not truly a part of normal electricity tariffs, and should therefore not be implemented under this authority. It is therefore deemed necessary that proper legal support is established to create the ST charge and the ST Fund. It is recommended that a new law is established to create the ST charge and ST Fund.

If the support tariff mechanism is not introduced by a law then there is the risk that customers negatively affected by the ST charge may argue that the charge is a levy and/or tax imposed and that the latter can only be done under statutory authorisation (i.e. similar to the ECB levy under the Electricity Act and the NEF levy under the Petroleum Products and Energy Act, 1990). In view thereof that the ST charge will form a substantial part of electricity tariffs and will be on the long-term, it is advisable to ensure from the start that it is based on
indisputable authority which can only be derived via legislation. It is important that ST charge’s regulatory process be perceived as legitimate.

An alternative option to achieve the necessary legal support is to include the ST charge in the NEF levy, and by accommodating the ST Fund within the NEF. The purpose of the NEF levy is to collect funds to benefit the electricity industry, which is the aim of the support mechanism. This could however be seen as an un-transparent way of implementing the support tariff mechanism, which is not the preferred way of doing it.

The disadvantage of using the NEF for the ST mechanism is that any change to the NEF levy requires gazetting by the Minister of Mines and Energy. This implies that the ECB would not have direct control over the levy, which then depends on the Minister to implement. In addition, should the ST Fund be administered by the NEF, the ESI would depend on the NEF to make timely payments of allocations to eligible distributors. These risks can be addressed by means of entering into an agreement with the Minister of Mines and Energy. Such agreement would then clearly spell out the various rights and obligations of the parties and deal with rescue mechanisms in the event of compliance failures.

5.3 Recommendations

In regard to addressing the required policy and legal requirements, it is recommended that

- a formal policy decision by the Minister of Mines and Energy (who will consult Cabinet/other Ministries as needed) is to be sought prior to the commencement of the implementation of the National Electricity Support Mechanism;

- provision for the ST Fund and ST charge to be included in the new Electricity Bill currently being finalised; and; and

- the ECB’s tariff methodology is to be formally amended (with Board approval) to enforce the low/normal capacity connection concept and associated IBT principles. This must also include the methodology to determine IBTs, ST Fund requests and allocations, and the reconciliation mechanism for the Fund.
6 Implementation Plan

This section presents a step-by-step implementation plan for the National Electricity Support Mechanism, considering tasks, timing, resource requirements and pre-requisites.

The section starts off by developing two separate scenarios that describe different implementation and migration paths that could arise when introducing the electricity support mechanism in Namibia.

6.1 Implementation Scenario 1: Rapid Implementation Scenario

The first implementation scenario assumes that the implementation of the proposed electricity support mechanism progresses rapidly, driven in parts by consumers wishing to rapidly migrate to low capacity connections. This scenario would equate to the “fast and high” scenario developed in the previous report. The projected number of conversions to low capacity connections per distribution area is shown in Figure 19 below.

Under this scenario, the majority of conversions would take place over a two-year period. NORED and OPE would convert some 25 000 customers per year, while the other distribution distributors would each convert between 5 000 and 15 000 customers per year.

The projected ST Funding needs under this scenario are depicted in Figure 20.
Figure 20: Projected ST Fund Needs – Rapid Implementation Scenario

The associated percentage ST charge required to generate the necessary funding is depicted in Figure 21.

Figure 21: Projected ST Charges – Rapid Implementation Scenario

Under the rapid implementation scenario, the ST charge would have to start at some 1.7% and rise to some 3.9%.
6.2 Implementation Scenario 2: Moderate Implementation Pace – Base Case

The second implementation scenario assumes that the implementation of the proposed electricity support mechanism proceeds slower than anticipated, mainly as a result of consumers being unclear about the costs and benefits of the migration from normal to low capacity connections, and/or the inability of distributors to raise sufficient awareness amongst eligible end-users. This scenario is the “base case” scenario as developed in the previous report.

The projected number of conversions to low capacity connections per distribution area in the base case scenario is shown in Figure 22 below.

![Low Capacity Conversions - Base Case](image)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORED + OPE</td>
<td>13 600</td>
<td>15 100</td>
<td>12 000</td>
</tr>
<tr>
<td>CENORED</td>
<td>5 500</td>
<td>6 100</td>
<td>4 600</td>
</tr>
<tr>
<td>Erongo RED</td>
<td>500</td>
<td>7 200</td>
<td>3 100</td>
</tr>
<tr>
<td>Windhoek</td>
<td>5 900</td>
<td>3 800</td>
<td>4 000</td>
</tr>
<tr>
<td>Central &amp; South excl Whk</td>
<td>6 700</td>
<td>7 000</td>
<td>5 400</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>32 200</strong></td>
<td><strong>39 200</strong></td>
<td><strong>29 100</strong></td>
</tr>
</tbody>
</table>

**Figure 22: Projected Low Capacity Conversions – Moderate Implementation Scenario – Base Case**

In the base case, the bulk conversion process takes some three years to complete. NORED and OPE would convert between 13 000 to 15 000 customers per year, while the other distributors would convert up to 6 000 customers each per year.

The projected ST Funding needs under this scenario are depicted in Figure 23.
The associated percentage ST charge needed to generate the required funding for the ST Fund is depicted in Figure 24.

In the base case implementation scenario, the ST charge would increase from some 0.75% and rise to some 2.2% in year three, where after it would steadily increase to almost 3% in year 8.

**Considering the availability of resources, it is recommended that the implementation of the ST mechanism is limited to the moderate implementation scenario. In view of the resource requirements, NORED may have to further limit the number of annual conversions.**
The recommended maximum annual conversions (subject to distributor review) based on the moderate implementation scenario based on the rounded figures in Figure 22 are summarised in Table 5 below.

Table 5: Proposed Maximum Low Capacity Conversions (Annual)

<table>
<thead>
<tr>
<th></th>
<th>2015</th>
<th>2016</th>
<th>2017</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORED + OPE</td>
<td>13 000</td>
<td>13 000</td>
<td>13 000</td>
</tr>
<tr>
<td>CENORED</td>
<td>5 000</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>Erongo RED</td>
<td>5 000</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td>Windhoek</td>
<td>7 000</td>
<td>7 000</td>
<td>7 000</td>
</tr>
<tr>
<td>Central &amp; South excl Whk</td>
<td>5 000</td>
<td>5 000</td>
<td>5 000</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>35 000</td>
<td>35 000</td>
<td>35 000</td>
</tr>
</tbody>
</table>

6.3 Communication

6.3.1 Communication by the ECB

Once the support mechanism has been formally approved the ECB should launch a national information campaign about the support tariff. Such a campaign is likely to take the form of advertorials placed in national newspapers plus infomercials on national radio.

The campaign should highlight and explain at least the following:

- Under whose political sponsorship the ST was developed;
- Who the ST is intended to benefit;
- How one is to benefit from the support mechanism, providing practical examples;
- Explain the low and normal capacity connections and who the intended users are;
- How to go about to have a normal connection converted to a low capacity connection; and
- How the IBT works and which rates are set at national level.

6.3.2 Communication by Distributors

Once the ST has been approved by the ECB and is ready for implementation by individual distributors, the licensees are to launch a customer information campaign to introduce the support mechanism and its benefits.

Depending on the size of the distributor this could take the form of newspaper advertorials, information sharing on local radio stations and/or pamphlets distributed with electricity bills and available at pay and vending points.

The campaign should highlight and explain at least the following:
• Introduce the ST mechanism as a national initiative implemented by the local distributor;

• Explain the choice between normal and low capacity connections, including illustrations and/or examples of what can and cannot be used with a low capacity connection;

• Explain the IBT for low capacity connections, including examples of monthly electricity cost for different consumption levels, and illustrating the financial benefits at different consumption levels on a monthly basis between normal and low capacity connections;

• Provide information about the timeframe over which conversions are expected to be made, and how applications will be prioritised;

• Where and how to apply for a low capacity connection conversion and the process to have this done; and

• The rules regarding changing back to normal capacity and changing again down to low capacity (e.g. free conversion only one time, then charges apply, only one conversion per calendar/fiscal year);

Distributors must also ensure that all front-line staff at their respective points of presence are thoroughly briefed on the connection options and the IBT so that they can competently respond to customer enquiries.

6.4 Implementation Responsibilities and Tasks

6.4.1 Government and Legal Support

The ECB should submit the proposed electricity support mechanism to the Minister of Mines and Energy, to seek Government (Cabinet) approval for a) an electricity support mechanism based on a low capacity connection with an IBT and b) the ST Funding mechanism comprising an ST charge that is to be levied on all transmission customers, and c) the establishment of an ST Fund that is to be administered by NamPower, supported by the necessary legislation.

As part of this process NamPower should be consulted, to make further inputs on the proposed ST charge, the ST Fund and the proposed administration thereof.

Once formal approval has been obtained from the Minister of MME and Cabinet, a bill for the establishment of an ST charge and associated ST Fund needs to be drafted and gazetted.

6.4.2 Informing Licensees

Upon Government approval, the ECB should inform all distributors about the implementation of the electricity support mechanism, and associated implementation processes and steps.
6.4.3 Localised Trialling of the Implementation of the Support Mechanism

It is considered instructive that the National Support Mechanism introduced in this document is selectively trialled prior to commencing with the national roll-out. Such a trial would enable the testing of many of the modelling assumptions underlying this study, specifically

a) whether and at what pace consumers would wish to have their existing electricity connections switched to low-capacity connections that benefit from subsidised electricity tariffs;

b) if and to what degree consumption behaviours change at a result of switching from normal to low-capacity connections, and

c) the practicalities of informing potential end-users and implementing low-capacity connections in a large urban setting, and the associated technical and administrative resource requirements.

Oshakati could be considered a suitable target area for such a trial as it offers modern metering and vending infrastructure, is a well-defined urban area and currently serves a wide cross-section of domestic electricity users.

It is assumed that an ST trial would be undertaken prior to the formal establishment of an ST Fund. Therefore, subsidy payments required during the trial would have to be funded from other sources, for example by way of an appropriation from MME or a grant from the NEF.

A prerequisite for the implementation of an ST mechanism trial would be that relevant approvals for the limited introduction and use of the proposed support mechanism have been obtained from the ECB Board, that such a trial has been explicitly authorised by Government, and that the required subsidy funding is available.

For a trial to yield useful data and information that can be used to inform the national implementation of the proposed ST mechanism, it will be necessary that monthly progress is monitored and reported on, including the

a) public information measures undertaken to announce that low capacity PPM connections are available and offer subsidised electricity

b) number of applications received for conversion

c) actual conversions implemented

d) resources used to achieve the given number conversions, and

e) analysis of electricity consumption patterns of those customers that were successfully converted to low capacity connections in order to allow the comparison of consumption patterns of such customers before and following the conversion.

While a trial is very likely to yield information that is useful for the national implementation of the proposed ST mechanism it must also be pointed out that a trial of this nature is likely to create end-user expectations, both in the trial area as well as nationally. Such expectations, including the non-fulfilment of hoped-for cost savings and other real and/or hypothesised benefits, are realities that the entity undertaking a trial will have to face and respond to. It is also considered unlikely that subsidised electricity tariffs can be phased out quickly,
irrespective of how successful their introduction has been, without creating considerable end-user dissatisfaction and possible political backlash.

### 6.4.4 Starting the National Roll-Out

National roll-out should only be started once the ST Fund law has been promulgated, and the relevant Cabinet and regulatory approvals are in place.

To get the ST Fund started, NamPower needs to open a dedicated bank account for the Fund, and establish the relevant in-house procedures.

Distributors need to prepare for the implementation in their areas of responsibility, including the following:

- decide on the maximum number of low capacity conversions to be done per year;
- assess the status of prepaid metering infrastructure with programmable current limiter settings;
- procure replacement meters as required;
- determine the revenue impact as a result of implementing the electricity support mechanism, based on the maximum number of annual low capacity conversions;
- determine the year 1 claim from the ST Fund, based on the principles approved by the ECB;
- as part of the annual tariff application, submit the initial claim to the ECB;
- the ECB will collate the individual distributor tariff applications and ST Fund applications, and determine an initial percentage ST charge, and publish this percentage as is to be prescribed in the ST Fund law;
- the ECB is to approve distributor tariffs, including the specific support tariff;
- distributors are to implement the support tariff and commence with the conversion from normal to low capacity connections as per consumer applications;
- NamPower is to implement the ST charge, and as ST Fund Administrator, start paying over the ST charge received from its transmission clients into the ST Fund bank account as provided for in the ST law;
- NamPower to commence making monthly payments to eligible distributors, based on amounts as determined and per instruction received from the ECB.

Once the initial roll-out is complete, the various ESI entities will commence with the monitoring and evaluation activities as set out in section 7 below.

### 6.5 Tentative Implementation Timeline

It is assumed that the present project will be completed in April 2014. As soon as possible after the conclusion of the project, the ECB is to submit the outcomes to the ECB Board, for approval. It is anticipated that this will be completed by May 2014.
By June 2014, the ECB is to submit the support mechanism for approval to the Minister MME, for official Government approval, which is expected to take until August 2014. During the same period, the ECB is to prepare a draft of the ST Fund law, while also amending its tariff methodology to include the changes proposed.

Assuming Government approval is obtained by August 2014 and the draft ST Fund bill has been workshopped with stakeholders, the new Bill is ready to be submitted to the legal implementation process by September 2014. Assuming that the Bill is passed and promulgated within some six months thereafter, implementation of the ST mechanism can proceed from July 2015 onwards.

In case the ST Fund bill is not promulgated by April 2015, the ECB may wish to consider implementation at a slow pace, focusing on those distribution areas that do not require contributions from the ST Fund in year 1. Projections show that all distributors except CENORED could then proceed to implement the support tariff. Under such a scenario, NamPower could implement the ST charge as soon as practical after promulgation of the law, to start accumulating funds in the ST Fund.

If political approval of the support tariff mechanism is received early and it is given a high priority for implementation then it would be possible to run the ST fund for the first year (2014/2015) using the NEF, and only from 2015 onwards implement the ST fund in NamPower for which the legal basis would have been created in the meantime.

Figure 25 below shows the main implementation activities to be undertaken between May 2014 and the second quarter of 2015 if the support mechanism as introduced in this document is to be applied from mid-2015.
6.6 Human Resource Requirements

6.6.1 ECB

The ECB’s main human resource requirement related to the implementation of the ST mechanism will be to deal with the determination and review of a) ST charges and b) domestic consumer electricity tariffs of the distributors. However, both these requirements largely fall within the ambit of the existing tariff review process, and should not require additional resources, unless existing resources are already fully occupied.

An additional work load to be shouldered by the ECB relates to the initial determination of the ST charge levels. This is to be done in parallel with the NamPower tariff review process, and involves the preparation of an estimate of the ST Funding requirements for each distributor for forthcoming fiscal year. Once a process has been formalised the respective supporting worksheets developed, this process should not present any additional challenges that would justify an additional staff position.

During the initial years of implementing the electricity support mechanism, the ECB will have to regularly monitor its implementation. This is particularly important in the first few years,
but is not likely to be required thereafter. If such monitoring exceeds the capacity of existing ECB resources it will be important to either create a fixed-term contract position or to outsource this requirement to consultants or other service providers.

**6.6.2 Distributors**

The main human resource requirement for dealing with implementation of the support tariff within distributors will be staff required to implement current limiter setting changes for customers converting to low capacity connections. It may also be necessary to deploy additional customer service staff at customer service centres to specifically deal with applications for and information on support tariffs and low capacity connections. Both such human resource requirements will be temporary in nature, and should not be required for a period exceeding three years. It is important not to unnecessarily increase permanent staff numbers, and distributors should seek to re-deploy existing staff resources to address such requirements.

Another human resource requirement arises from randomly validating current limiter settings of low capacity connections. It is recommended that this function be outsourced to professional service providers who can provide independent audit functions to ensure that current limiter changes are actually implemented by distributor staff.

Where prepayment meters need to be replaced with more modern units capable of electronic current limiter settings, additional temporary technical staff may be required. In such cases it is recommended that external contractors be appointed to implement the required meter changes.

**6.7 Technical Resource Requirements**

**6.7.1 ECB**

The ECB should not need additional technical resources beyond the establishment of additional spreadsheet tools for estimating and managing the requirements of the ST Fund.

**6.7.2 Distributors**

Distributors using outdated prepayment meters will need to replace such technology with those where current limiter settings can be changed.

Distributors using outdated vending systems will need to update or convert to modern vending systems which are fully on-line and can implement block tariffs.
6.8 Pre-requisites

The key pre-requisite for the implementation of the support tariff is

1. Stakeholder acceptance,
2. ECB Board approval, and

Once the above have been obtained, a further pre-requisite before the implementation of the ST mechanism can commence is the promulgation of the ST Fund bill that establishes the ST Fund, without which implementation cannot effectively proceed.

6.9 Implementation Cost Estimates

The implementation of the support tariff mechanism will bring about costs, the most important of which arise from a) the replacement of older type prepayment meters with new ones capable of electronic setting of current limiter (and replacement of conventional meters with prepayment meters for conventional metered customers who elect to switch to a low capacity connection) and b) the setting of prepayment meter current limiter settings as consumers convert to the low capacity connection.

An estimate has been prepared for the number of meters that may have to be replaced as part of the support tariff implementation. This estimate makes assumptions about the number of older type (without programmable current limiter) prepayment meters as well as likely conventional metered customers per distributor who are expected to convert to the low capacity connection. Estimates have then been prepared of the mileage driven per meter replacement as well as the labour cost per replacement. Adding to this the cost of the prepayment meters themselves allows the preparation of an estimated budget for the meter replacement exercise. It is assumed that meters used by small the non-RED utilities are mostly older meters which will need to be replaced.

The estimated cost of meter replacements (based on meter, transport and labour costs) is as shown in Table 6 below.

<table>
<thead>
<tr>
<th></th>
<th>Total DOM Connections</th>
<th>Adjusted DOM Connections</th>
<th>Percentage meters to be replaced</th>
<th>Expected Annual Conversions</th>
<th>Expected annual meter replacements</th>
<th>Cost per Replacement $N</th>
<th>Cost per Year for 3 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORRED &amp; OPE</td>
<td>57 569</td>
<td>57 569</td>
<td>6%</td>
<td>13 000</td>
<td>823</td>
<td>820</td>
<td>674 914</td>
</tr>
<tr>
<td>EROGO RED</td>
<td>31 739</td>
<td>31 739</td>
<td>25%</td>
<td>5 000</td>
<td>1 250</td>
<td>655</td>
<td>818 750</td>
</tr>
<tr>
<td>CENORED</td>
<td>22 673</td>
<td>22 673</td>
<td>27%</td>
<td>5 000</td>
<td>1 343</td>
<td>735</td>
<td>986 762</td>
</tr>
<tr>
<td>Central &amp; South</td>
<td>32 221</td>
<td>33 504</td>
<td>20%</td>
<td>7 000</td>
<td>1 400</td>
<td>578</td>
<td>808 500</td>
</tr>
<tr>
<td>Windhoek</td>
<td>56 096</td>
<td>56 096</td>
<td>20%</td>
<td>7 000</td>
<td>1 400</td>
<td>578</td>
<td>808 500</td>
</tr>
<tr>
<td>NamPower Distribution</td>
<td>-</td>
<td>1 000</td>
<td>10%</td>
<td>300</td>
<td>30</td>
<td>820</td>
<td>24 600</td>
</tr>
<tr>
<td>TOTAL</td>
<td>200 298</td>
<td>202 581</td>
<td>15%</td>
<td>35 300</td>
<td>5 346</td>
<td>3 721 026</td>
<td></td>
</tr>
</tbody>
</table>
The total meter replacement cost over the three years of initial implementation is therefore estimated at approximately N$11 million. Since this estimate is based on assumed distances and labour effort reality may differ significantly from this estimate. Implementing distributors should make their own estimates and include these in the relevant ORM section when applying for their tariffs.

An estimate was also prepared for the cost of the remaining conversions which merely imply the re-programming of the meter. These meters will still need to be visited by a utility employee to enter the current limiter setting token. The estimate is based on assumed mileage per meter and labour effort per meter. The result is shown in Table 7. The total estimated cost for all initial conversions is estimated to be some N$2 million.

### Table 7: Estimated Meter Re-Programming Cost

<table>
<thead>
<tr>
<th></th>
<th>Expected Annual Conversions</th>
<th>Expected annual meter replacements</th>
<th>Remaining meters to be re-programmed</th>
<th>Cost per installation N$</th>
<th>Cost per Year for 3 Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>NORED &amp; OPE</td>
<td>13 000</td>
<td>823</td>
<td>12 177</td>
<td>245</td>
<td>201 651</td>
</tr>
<tr>
<td>ERONGO RED</td>
<td>5 000</td>
<td>1 250</td>
<td>3 750</td>
<td>80</td>
<td>100 000</td>
</tr>
<tr>
<td>CENORED</td>
<td>5 000</td>
<td>500</td>
<td>4 500</td>
<td>245</td>
<td>122 500</td>
</tr>
<tr>
<td>Central &amp; South</td>
<td>5 000</td>
<td>1 343</td>
<td>3 657</td>
<td>100</td>
<td>134 253</td>
</tr>
<tr>
<td>Windhoek</td>
<td>7 000</td>
<td>1 400</td>
<td>5 600</td>
<td>78</td>
<td>108 500</td>
</tr>
<tr>
<td>NamPower Distribution</td>
<td>300</td>
<td>30</td>
<td>270</td>
<td>240</td>
<td>7 200</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>35 300</strong></td>
<td><strong>5 346</strong></td>
<td><strong>29 954</strong></td>
<td></td>
<td><strong>674 104</strong></td>
</tr>
</tbody>
</table>

Adding to these two main costs the additional costs of running information campaigns and other incidental costs it is estimated that the entire implementation may cost the ESI some N$15 million (allowing some N$3 million for costs beyond those required by physical meter changes).
7 Monitoring the Implementation of the Support Mechanism

7.1 The Role of the ECB

7.1.1 Conversions to Low Capacity Connections

For at least the first three years following the initial introduction of the support mechanism, or until such time as the initial conversion process to low capacity connections can be considered completed, whichever comes first, the ECB should actively monitor the implementation of the support mechanism.

Monitoring is to be achieved by analysis of quarterly reports which are to be received from all distributors (refer to section 7.2), and the compilation of aggregated annual reports, which are to be based on the quarterly reports.

Each quarter, the ECB is to ensure that reports are received from all distributors. The received data is to be entered into a control spreadsheet which is to be set up to capture the progress made in implementing the approved support mechanism. Data is to include the actual conversion achieved per distributor in each quarter, and the planned number of such conversions per distributor per quarter, to enable the ECB to recognise trends and inform the ST charge calculation.

7.1.2 ST Charges and Status of the ST Fund

It will be essential to monitor the actual flow of subsidies from the ST Fund. Both in- and outflows may require adjustments, to compensate for over- and underpayments by transmission entities into the ST Fund, and thereby minimising under- and over-recoveries.

If the take up of low capacity connections is much faster/slower than anticipated, it may become necessary to adjust the ST charge percentage on transmission billing, to avoid funding shortfalls or over-recovery in select distributors. Adjustments need to be made with care, and only after other avenues to revise disbursements between distributors have been exhausted.

The assessment of funding in- and outflows into and from the ST Fund is to be made monthly. To this end, the ST Fund Administrator is to furnish the ECB with detailed statements on all receipts and pay-outs made each month. These are to be compared with the forecast in- and outflows, to safeguard the Fund’s liquidity and ensure that timely adjustments can be made, and inform the annual reconciliation and percentage ST charge determination process (refer to 7.1.3).
7.1.3 Annual ST Charge Determination

The quarterly conversion data as per 7.1.1 and the monthly register of in- and outflows into and from the ST Fund as per 7.1.2 form the basis for the annual determination and approval process for a) domestic customer tariffs and b) funding allocations from the ST Fund.

Annual monitoring also serves to reconcile the forecast values on which funding approvals were based with the actuals achieved per distributor. The reconciliation amounts are to be included in the next tariff determination cycle. The reconciliation of actual support tariff amounts is to be based on the same principles as are to be applied in the general reconciliation mechanism which the ECB is currently implementing. As such, the ST reconciliation is to form a sub-set of the overall tariff reconciliation process.

7.2 The Role of the Distributors

Accessible records must be kept of all conversions from normal to low capacity connections, complete with meter numbers, location, conversion date and staff member(s) responsible for entering the current limiter setting change engineering token into the meter.

Records of conversions are to be kept in spreadsheet/database format, and are to remain accessible for analysis. In addition, the information recorded in vending and/or billing systems is to be kept updated, to ensure that relevant user data can be provided to the ECB as required.

7.2.1 Monthly Monitoring Tasks

Distributors are to keep and compute monthly statistics on the uptake of low capacity connections and associated subsidy requirements, including:

- Number of customers on a low capacity connection at month end, or the end of the relevant reporting period, classified by tariff area (if applicable, e.g. in REDs);
- Sales in kWh to customers on low capacity connections in the reporting period as well as year to date;
- Difference between revenue earned from low capacity connection customers and revenue that would have been earned from the same sales at the normal capacity tariff, both for the review period and year to date;
- ST Funding received, and compared to the revenue loss calculated above;

Distributors are to prepare the above statistics and report these to the ECB in quarterly intervals. Requests for additional ST Funding are to be motivated by shortfalls on the amounts of ST Funding received and the actual revenue forfeited; these are to form part of the quarterly reports submitted to the ECB.

The quarterly reporting to the ECB can be discontinued with the consent of the ECB after three years from introduction of the support mechanism or once the conversion rate to low
capacity connections slows to the extent that it can be assumed that the initial conversion process has been completed.

7.2.2 Annual Reconciliation and Preparation for Tariff Reviews

As part of the annual tariff review process, each distributor is to prepare:

- Monthly and total annual conversions to low capacity connections achieved in the past year;
- A forecast of the planned conversions to low capacity connections in the year ahead;
- A reconciliation of support subsidies received as compensation for revenues forfeited in low capacity connections per month and in the past year; and
- A forecast of monthly support subsidy requirements for the year ahead.

Distributors are to demonstrate that the rate determination procedures and principles set out in section 3.3 have been adhered to and motivate proposed deviations for the ECB’s approval.

7.3 ST Performance Criteria

Critical performance criteria reflecting the state of play of the implementation of support tariffs in Namibia include:

- National monthly and total annual use of low capacity connections;
- Distributor-specific monthly and annual conversions to low capacity connections;
- Monthly and total annual contributor-/recipient-specific payments/receipts of ST Funding;
- National and distributor-specific receipts of ST Funding per low capacity connection;
- Distributor-specific low capacity connection block 1, 2 and 3 tariffs, and average monthly energy consumption per connection per block;
- National monthly energy consumption per low capacity connection block 1, 2 and 3;
- Distributor-specific normal capacity connection PPM tariffs, and average monthly energy consumption per normal capacity connection;
- National monthly energy consumption per normal capacity connection; and
- National and distributor-specific comparison of average monthly low capacity and normal capacity PPM tariffs.

7.4 Funding Requirements, Tariff Evaluation and Monitoring

A tariff evaluation and monitoring workbook was devised to assist with the determination of the domestic tariff rates per distributor, as well as the ST Fund request per distributor. The workbook includes forecast figures which are used as base data, and includes a section where
actual data is to be entered, which can be used for the reconciliation of ST Fund requests and to determine the amounts that were actually needed in a given year. The workbook is designed to show each fiscal year on a separate worksheet, and allows the carrying over of relevant numbers from one year to the next.

The (budget) data capture part of the sheet is shown in Table 8:

Table 8: Proposed Annual ST Funding Control Sheet Part 1

<table>
<thead>
<tr>
<th></th>
<th>Prev Year RR Rate incl N$/kWh</th>
<th>Target RR rate incl N$/kWh</th>
<th>Low block 1 tariff</th>
<th>Low block 2 tariff</th>
<th>Normal tariff</th>
<th>Low block 3 MWh</th>
<th>Low block 3 sales MWh</th>
<th>Normal sales MWh</th>
<th>Total DOM sales MWh</th>
</tr>
</thead>
<tbody>
<tr>
<td>Las</td>
<td>General Increase</td>
<td>Las</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>NORED</td>
<td>0.14</td>
<td>1.88</td>
<td>0.86</td>
<td>1.54</td>
<td>1.88</td>
<td>4 588</td>
<td>3 715</td>
<td>1 249</td>
<td>55 495</td>
</tr>
<tr>
<td>South</td>
<td>0.14</td>
<td>1.88</td>
<td>0.86</td>
<td>1.54</td>
<td>1.88</td>
<td>4 588</td>
<td>3 715</td>
<td>1 249</td>
<td>55 495</td>
</tr>
<tr>
<td>TOTAL</td>
<td>0.74</td>
<td>1.81</td>
<td>0.83</td>
<td>1.51</td>
<td>1.80</td>
<td>8 220</td>
<td>7 020</td>
<td>2 489</td>
<td>78 251</td>
</tr>
</tbody>
</table>

The worksheet shown in Table 8 applies the methodologies set out in section 3.3, taking the previous year’s average domestic rate, the LAS rate and the general tariff increase as key inputs, and using these to determine the proposed rates for the next year. The right hand side of the sheet captures expected sales quantities which, when multiplied with the tariff rates, computes the expected revenues.

Table 9 below shows the second part of the worksheet, which works with the expected revenues, revenue shortfalls and ST Funding needs. It computes the ‘no-IBT revenue’ – in the absence of low capacity connections on an IBT – by multiplying the average target rate with the total sales quantity. This revenue would have been earned from the domestic consumer segment if the IBT had not been applied. The sheet then calculates the ‘with IBT revenue’,
which is expected from the IBT as well as remaining normal connection sales. The difference between the ‘no-IBT revenue’ and the ‘with IBT revenue’ is the funding need which is to be recovered from the ST Fund.
The worksheet shown in Table 9 can also be used to compute the ST Fund requirements for the entire distribution industry. Initially it can be used by the ECB with estimated numbers for the initial ST charge determination required as part of the NamPower tariff review process. The same sheet can then be updated with data provided by distributors, as part of their tariff application process, to determine the distribution of funds from the ST Fund for the year ahead.

The sheet also allows the determination of how much subsidy was provided, and the subsidy amounts contributed per source.

For Erongo RED and CENORED the sheet could be expanded to show individual areas and each area’s rates, which would make reconciliation easier and determinations more accurate.
7.5 Considerations for Off-grid Areas

The determination of the support tariff under the support mechanism introduced in this document, and modelling of its implications, was based on information of grid-connected utilities. Also, the implementation plan presented in this document is tailored to on-grid utilities. This raises the question how current and future off-grid electricity customers should be treated.

In regard to off-grid electricity users, the application of the support mechanism as introduced in this document raises some as yet unresolved issues. Many of these are related to the absence of clear policies and guidelines on the following aspects, assuming that utility-operated off-grid systems based on mini-grids are the way forward for off-grid electrification:

- On the basis of which policy will off-grid electrification by way of mini-grid solutions be introduced?
- Will government initiate and drive off-grid electrification by way of mini grids? Will this be as an additional part of existing electrification efforts by government?
- On what scale should off-grid electrification by way of mini-grids be introduced?
- On what basis will it be determined which areas will remain unelectrified, electrified by way of on-grid supplies and which areas will benefit from off-grid electrification by way of grid-like mini-grid systems?
- Will electrification of off-grid localities be based on grid-equivalent electricity supply? If not, how will/should tariffs be determined for electricity supply options which do not have the same quality and availability criteria as on-grid supply has?
- Will off-grid localities become the responsibility of on-grid utilities (specifically the REDs), and how would the financial implications of such an integration be dealt with?
- On what basis should electricity tariffs for utility operated off-grid electricity systems be determined? Should they reflect the (probably higher) cost of supply (compared to on-grid electricity)? Should they include incentives to incentivise the efficient use of the off-grid generation sources? Should they be aligned to the tariffs of the closest on-grid electricity supply utility?
- If tariffs in off-grid localities are to be set below cost reflective levels, how and by whom will such shortfalls be funded?
- Will on-grid electricity consumers be expected to cross-subsidise the off-grid systems in the same way that urban (on-grid) electricity consumers are cross-subsidising rural (on-grid) consumers? Such cross-subsidies are not transparent but they are a necessary ingredient in areas where tariffs have been harmonised between urban and rural areas, because rural operating costs are higher than their urban equivalent.
- If government (as part of its rural electrification effort) subsidises part of the ongoing cost of off-grid generation systems, how will such subsidies be determined, and will they also be paid to REDs who incorporate off-grid systems into their operations?
• What would be the impact on on-grid electricity tariffs if on-grid electricity consumers are called upon to cross-subsidise off-grid localities, assuming that significant numbers of localities are to be off-grid electrified?

• Would the ST fund be expected to fund a bigger subsidy required to “buy down” higher off-grid tariffs?

Further to the above, additional issues and questions arise for off-grid electrification by way of the provision of solar home systems and similar single-household stand-alone systems:

• On the basis of which policy would off-grid electrification by way of single-household stand-alone electricity systems be introduced?

• Will government include such off-grid electrification as an additional part of its rural electrification efforts?

• Will utilities be expected to undertake off-grid electrification by way of providing solar home systems or similar single-user technologies?

• How would/should beneficiaries using single-household stand-alone electricity systems provided by the government or a utility pay for such services?

• Who would own and be responsible for the maintenance of non-utility-owned off-grid systems?

• How can equity be maintained between the different off-grid electrification options?

In the absence of a specific policy there is no rational framework for applying the support mechanism to existing or future off-grid electrified localities. The support mechanism as introduced in this document can only be applied to utility-operated off-grid supplies where services are provided and consumption is charged similarly as is done for on-grid users.

In April 2014, the only utility-operated off-grid electricity supply system (a solar-diesel hybrid generation system) is operated by the Otjozondjupa Regional Council at Tsumkwe. Tsumkwe is part of CENORED’s supply area, but CENORED as grid utility is not involved in the off-grid supply at Tsumkwe. Tariffs for consumers at Tsumkwe are determined by the Regional Council and approved by the ECB. These tariffs are not aligned with CENORED tariffs, and at current levels, do not reflect the true cost of the hybrid generation system. Government is providing subsidies to the Regional Council to fund the shortfalls arising from the operation of the system.

The electricity support mechanism introduced in this document can and should be applied to consumers in Tsumkwe, so that they are treated like all other consumers in the country (the principle being that all domestic electricity consumers in Namibia should have access to the support mechanism). The associated ST funding application for Tsumkwe should be calculated with the existing Tsumkwe tariffs as comparator. It is considered likely however that the introduction of the support mechanism would imply that the government’s current subsidy to the Regional Council would have to be increased, so as to compensate for revenue losses which are expected to increase once the support mechanism is implemented. This illustrates
some of the multitude of complexities arising when off-grid areas are to be electrified by utilities.
8 Implementation Constraints, Exploits and Potential By-Passes

This section provides a summary of potential implementation constraints that may delay or hamper the implementation of a Namibian electricity support mechanism. The section draws on international experience and also takes Namibia-specific circumstances and challenges into account.

8.1 Differences between Distribution Areas

The design and modelling report prepared for the project concluded that it will not be prudent and reasonable to implement a single national support tariff across all distributors. The key reasons for this conclusion were based on the difference between the licensees’ current tariff levels, LAS levels and customer profiles.

The electricity support mechanism will therefore have to be individualised for each distribution entity, with the exception of the low capacity block 1 tariff, which is to be applied nationally.

8.2 Conversion to Low Capacity Connections

There are practical limits to how many conversions to low capacity connections can be handled in a given time by each distribution entity. This capacity differs between licensees.

The principle underpinning the conversions to low capacity connections is that such conversions are to be achieved using the existing in-house human resource capacity of each licensee, i.e. no additional staff is to be hired in permanent positions for this purpose.

8.2.1 Phasing Priority for Conversions

Where practical constraints result in a backlog of conversions, this is to be prioritised as follows:

1) Customers currently on a preferential tariff (such as pensioners in Erongo RED) who no longer qualify for the preferential tariff unless they convert to a low capacity connection;
2) Customers located in low-income areas;
3) Customers in high-density residences in mixed income suburbs; and then the
4) Remaining customers.

8.2.2 Planning the Conversion Process

Distributors serving rural areas are to “pool” conversions in rural localities in order to achieve the maximum number of conversions with the least number of site visits.
It is recommended that conversion visits are announced prior to them taking place so as to ensure that as many households as possible can be converted per such visit.

It is also recommended that a conversion schedule is drawn up per locality, and that potential customers are informed of the opportunity and timing of upcoming conversions in their areas. A similar approach is recommended for clusters within urban areas to ensure that conversions undertaken as cost effectively and efficiently as possible.

8.3 Non-domestic Consumers Posing as Domestic Customers

The main risk of non-domestic consumers posing as domestic consumers relates to businesses operated from domestic premises under the name of an individual. In such cases, the distributor may not readily detect the presence of a business.

However, any significant business activity coupled with household usage is likely to exceed the subsidised service offering from low capacity connections. This is expected to minimise cases where businesses benefit from low capacity connections.

8.4 Current Limiter Setting for Low Capacity Connections Not Implemented

The non-implementation of current limiter settings for low capacity connections will be a significant risk, which arises when distributor staff do not enter the engineering token to reset the current limiter to the 20Amp setting (for example in exchange for a bribe).

It is recommended that regular independent and unannounced checks are carried out on a sample of meters for which low capacity tokens have been issued, to ensure that the relevant tokens have been processed. Such sampling is to include all meters that were reset, and is to be arranged in such a way that distributor staff cannot have prior knowledge of when and which assessments are undertaken. Here, an external party may be contracted to undertake such independent verification, and such services are to be best performed by several persons, to minimise the opportunities for bribery.

8.5 Incorrect Tariff Allocation in Billing Systems

The implementation of an IBT and low capacity connections implies that customers will have to be moved on billing and vending systems from one tariff to another. Such a process is likely to result in errors, especially if thousands of customer records are to be changed.

It is recommended that distributors are to establish control and review mechanisms to ascertain that the changes required to billing and vending systems are processed correctly.
9 Key Recommendations

This section summarises the key recommendations to initiate and implement the national electricity support mechanism as described herein.

It is recommended that the following approvals and authorisations are followed:

- the National Electricity Support Mechanism as introduced is first approved by the Board of the ECB;
- the ECB then seeks the formal support of Government for establishing a National Electricity Support Mechanism through the Minister of MME, and Cabinet;
- provision for the ST Fund and ST charge be included in the new Electricity Bill currently being finalised. The ST Fund and , the ST charge be paid by every transmission client including distributors;
- ; and
- the ECB tariff methodology is amended to explicitly accommodate the National Electricity Support Mechanism.

It is further recommended that:

- the ST Fund is to be administered as a fully ring-fenced physical fund by NamPower, and that NamPower is eligible to be compensated for such administrative functions, subject to the Minister’s prerogative in consultation with the Regulator to appoint another entity to assume the role of ST Fund Administrator;
- the ST Fund is to be endowed by a seed fund from Government or the NEF, to enable the autonomous operation of the Fund without becoming a risk to the Fund Administrator or its beneficiaries;
- the ST charge is levied as a percentage of the total of all transmission tariff charges, and is set annually by the ECB;
- the pace of implementation of the electricity support mechanism as introduced in this document is deliberately capped to the moderate implementation scenario as introduced in section 6.2; and
- the ECB closely monitors the implementation of the National Electricity Support Mechanism, to minimise potentially adverse effects on individual ESI entities or the sector as a whole.
10 References

[1] Development of an Electricity Support Mechanism for Namibia:
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