Namibia Electricity Supply Industry Market Structure
Modified Single Buyer Market

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Windhoek – NAMIBIA
INTRODUCTION

Metdecci Energy Investment Plant (5MW) – Karibib
Electricity Control Board - Mandate

- Derived from the Electricity Act no 4, of 2007, Section 3 sub section (1)
  - to exercise control over and regulate the provision, use and consumption of electricity in Namibia.
  - to oversee the efficient functioning and development of the electricity industry and security of electricity provision.
  - to ensure the efficient provision of electricity
  - to ensure a competitive environment in the electricity industry in Namibia with such restrictions as may be necessary for the security of electricity provision and other public interest
  - to promote private sector investment in the electricity industry
- In accordance with prevailing Government Policies.
Core Regulatory Areas

- **Licensing**
  - Oversight and approval of Generation, Transmission and Distribution infrastructure projects
  - Issue, Amend, Transfer, Maintain, Cancel licenses

- **Economic Regulation**
  - Tariffs setting and approval
  - Financial viability and sustainability of the ESI

- **Technical Regulation**
  - Ensure technical compliance of licensee
  - Technical / Infrastructure Standards Setting
  - Technical Compliance Audits and Inspections
Electricity Supply Industry (ESI) Structure – Current

Policy Maker → Ministry of Mines and Energy → Electricity Control Board → NamPower → Transmission End Consumers

Licensees (Regulated Entities)
- NamPower Generators
- Energy Trading Import & Export
- Transmission
- NamPower Distribution
- Distributor Embedded IPPs
- Independent Power Producers
- REDs
- Local and Regional Authorities
- Other Distributors
- Distribution End Consumers

License Types
- Generation
- Trading Import Export
- Transmission
- Distribution & Supply

Customer Embedded Generation
- Self-Generation
What is the Modified Single Buyer?

(MSB)

- Market platform that allows consumers and private generators to transact directly
  - It builds on the existing Single Buyer (SB) model i.e. it represents a modification of the existing market structure.
  - The MSB draws on global best practice, but it has been designed for Namibia,
  - Aligned with National Development Plans, Energy Policy and IPP Policy
  - 30% of total volumes (energy) will be contestable (Transmission customers) with the MSB
  - Supports electricity trading in accordance with a set of transparent rules,
  - Ring fenced unit within NamPower (MSB Office)
  - MSB will enable development of plant specifically for export purposes.
Why do we need the MSB?

- To allow more new local generation capacity
- Address challenges in existing Single Buyer (SB) model
  - E.g. Monopoly; Reliance on imports, Slow decision making etc.
- Support efficient competition (lower tariffs) and customer choice
- Encourage more private sector investments in generation
- Reduce funding burden on NamPower / GRN
- Adapt tariff structures to accommodate changes in technology and to facilitate MSB
- Provide opportunity for the deployment of new technologies such as battery storage
- Namibia to become more energy self-sufficient
- Opportunity for customers to invest in and benefit from reducing cost and new technologies
Electricity Supply Industry
Market Structure - Single Buyer (Previous)
### Key Design Features of the MSB

<table>
<thead>
<tr>
<th>New Trading Arrangements</th>
<th>Contestable Customers &amp; Eligible Sellers</th>
<th>Phased Implementation to manage Risk</th>
<th>30% of total purchases contestable from Sept 2019</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unbundled Tariffs</td>
<td>Changes in Market Operations &amp; Administration</td>
<td>Updated Rules &amp; Regulations</td>
<td>No unbundling or privatisation of existing entities</td>
</tr>
</tbody>
</table>
### Market Participants & Authorisations

<table>
<thead>
<tr>
<th>Participant</th>
<th>Authorisation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Market Operator (MO)</td>
<td>Included in Transmission License</td>
</tr>
<tr>
<td>System Operations (SO)</td>
<td>Included in Transmission License</td>
</tr>
<tr>
<td>Eligible Generator</td>
<td>Generation License</td>
</tr>
<tr>
<td>Contestable Customer</td>
<td>Approval from Regulator</td>
</tr>
<tr>
<td>Trader</td>
<td>Trading License</td>
</tr>
<tr>
<td>Importer</td>
<td>Import License</td>
</tr>
<tr>
<td>Exporter</td>
<td>Export License</td>
</tr>
</tbody>
</table>

1) The MSB Market Rules apply to all Market Participants, taking into account the following exemptions:

   a) All Generators licensed before 1\(^{st}\) September 2019
   
   b) All off-grid Generators

2) Any Generator that is exempted from the MSB Market Rules, will become subject to the MSB Market Rules upon application and approval to participate in the MSB Market, or automatically upon renewal of their licence.
TRADING ARRANGEMENTS

Phase 1 vs. Phase 2

1. **Phase 1a: Sep 2019 - June 2021;** Tx Customers only (30% Annual Energy)

2. **Phase 1b: July 2021 – June 2026;** Tx + Dx ≥ 1 MVA (30% Annual Energy)

3. Two stage approach to allow Distributors to unbundle sufficiently to enable wheeling for their customers

4. Phase 2: July 2026 – onwards; Tx + Dx (as determined by Regulator); Imports allowed

5. Imports only allowed from 2026 to support Government policy of self-sufficiency and to align with unwinding of current import contracts
Potential Impact on Self-sufficiency Energy – Why 30%?

Namibia vs. Non-Namibia Generation

- 2019: 42.5% (Existing Namibia) + 57.5% (Imports) = 100%
- 2020: 45.9% (Existing Namibia) + 54.1% (Imports) = 100%
- 2021: 43.3% (Existing Namibia) + 51.9% (Imports) = 100%
- 2022: 43.2% (Existing Namibia) + 51.9% (Imports) = 100%
- 2023: 42.6% (Existing Namibia) + 28.3% (Bilateral Transactions) = 70.9%
- 2024: 41.1% (Existing Namibia) + 24.3% (Bilateral Transactions) = 65.4%
- 2025: 40.5% (Existing Namibia) + 19.8% (Bilateral Transactions) = 60.3%
- 2026: 40.8% (Existing Namibia) + 19.5% (Bilateral Transactions) = 60.3%

Legend:
- Existing Namibia
- Ministerial Determination
- Bilateral Transactions (MSB)
- Imports
MARKET DEVELOPMENT PROCESS

Implementation Status

- MSB Market opened - 1st September 2019
- All pending licence applications and all new licence applications - will now be assessed in terms of the MSB Market Design, Rules and Wheeling Framework; Generators & Exporters
  - Market Rules and Wheeling Framework Developed
  - Four licenses issued
- ECB is accepting applications from Contestable Customers – All Transmission connected customers including Distributors are now Contestable;
- ECB / MSB are ready to accept trades under Draft Rules and Procedures
  - Market Rules will be promulgated before end of 2020
<table>
<thead>
<tr>
<th>Licensees</th>
<th>Energy</th>
<th>30%</th>
<th>MW</th>
<th>Licensed</th>
<th>Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cenored (Pty) Ltd</td>
<td>209,089,497</td>
<td>62,726,849</td>
<td>30</td>
<td>6</td>
<td>24</td>
</tr>
<tr>
<td>City of Windhoek</td>
<td>940,339,440</td>
<td>282,101,832</td>
<td>134</td>
<td>134</td>
<td></td>
</tr>
<tr>
<td>Elizabeth Bay Mine</td>
<td>11,181,303</td>
<td>3,354,391</td>
<td>0.85</td>
<td>0.85</td>
<td></td>
</tr>
<tr>
<td>Erongo RED (Pty) Ltd</td>
<td>530,140,964</td>
<td>159,042,289</td>
<td>76</td>
<td>3</td>
<td>72</td>
</tr>
<tr>
<td>Gobabis Town Council</td>
<td>26,512,040</td>
<td>7,953,612</td>
<td>4</td>
<td>4</td>
<td></td>
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<tr>
<td>Keetmanshoop Municipality</td>
<td>36,281,593</td>
<td>10,884,478</td>
<td>5</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td>Luderitz Town Council</td>
<td>37,008,917</td>
<td>11,102,675</td>
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<tr>
<td>Marienfeld Town Council</td>
<td>30,277,897</td>
<td>9,083,369</td>
<td>4</td>
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<tr>
<td>Namibia Breweries Limited*</td>
<td>18,518,460</td>
<td>5,555,538</td>
<td>3</td>
<td>1</td>
<td>2</td>
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<tr>
<td>Navachab Gold Mine</td>
<td>55,099,705</td>
<td>16,529,912</td>
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<tr>
<td>Nored (Pty) Ltd</td>
<td>438,937,586</td>
<td>131,681,276</td>
<td>63</td>
<td>15</td>
<td>48</td>
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<tr>
<td>Ohorongo Cement</td>
<td>40,586,189</td>
<td>12,175,857</td>
<td>6</td>
<td>6</td>
<td>-</td>
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<tr>
<td>Okahandja Town Council</td>
<td>48,151,025</td>
<td>14,445,308</td>
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<td>7</td>
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<tr>
<td>Oranjemund Town Council</td>
<td>30,308,494</td>
<td>9,092,548</td>
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<tr>
<td>Orano Mining Namibia</td>
<td>39,654,916</td>
<td>11,896,475</td>
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<tr>
<td>Oshakati Premier Electric</td>
<td>67,750,017</td>
<td>20,325,005</td>
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<td>5</td>
<td>5</td>
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<tr>
<td>Rehoboth Town Council</td>
<td>37,327,175</td>
<td>11,198,153</td>
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<tr>
<td>Rosh Pinah Zinc Mine</td>
<td>47,353,373</td>
<td>14,206,012</td>
<td>7</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>Rossing Uranium</td>
<td>170,411,940</td>
<td>51,123,582</td>
<td>24</td>
<td>24</td>
<td></td>
</tr>
<tr>
<td>Skeleton Coast Trawling*</td>
<td>9,319,680</td>
<td>2,795,904</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Sun Water (Pty) Ltd*</td>
<td>6,060,000</td>
<td>1,818,000</td>
<td>1</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Swakop Uranium</td>
<td>204,957,591</td>
<td>61,487,277</td>
<td>29</td>
<td>12</td>
<td>17</td>
</tr>
<tr>
<td>Tsumeb Smelter</td>
<td>184,969,949</td>
<td>55,490,985</td>
<td>26</td>
<td>26</td>
<td></td>
</tr>
<tr>
<td>Whale Rock Cement</td>
<td>16,867,250</td>
<td>5,060,175</td>
<td>2</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>3,237,105,002</strong></td>
<td><strong>971,131,501</strong></td>
<td>459</td>
<td>49</td>
<td>410</td>
</tr>
</tbody>
</table>

Registered as Contestable Customers

*Distribution connected embedded

Updated 10-Mar-21
MARKET PARTICIPATION

Momentous Energy (5MW) – Keetmanshoop
Market Rules

- Overview of the Rules
  - Qualifying Requirements to Trade
  - Network Capacity Management
  - Bilateral Trading Nomination
  - Metering and Settlements
  - Financial and Invoicing

- Rules supported by
  - Balancing Framework
  - Wheeling Framework
Balancing refers to the real time adjustment of supply and or demand to ensure the security and reliability of the electric system. In Namibia, the Systems Operations (SO) function in NamPower is responsible for balancing.

The need for balancing services and the cost to procure these services are the result of unforeseen fluctuations by suppliers and consumers of electricity.

This framework addresses the commercial arrangements in the event an Eligible Generator or Importer deviates from the Final Dispatch Schedule published by the MO.

The objective of the Balancing Framework is to recover the cost of providing balancing services from the parties who cause the need for the service in accordance with the ‘user-pay’ principle.
Wheeling Framework

- The Wheeling Framework is part of the main activity of Market Rules, and due to its significance was developed separately for effective administrative of the market.
  - The main purpose of the Wheeling Framework is to support the operationalisation of the MSB market by providing a transparent, fair and practical framework for the determination and implementation of wheeling services and charges for the use of transmission and distribution networks.
  - The MSB, supported by the Wheeling Framework, will intensify competition, provide for more customer choice and increase generation self-sufficiency while lowering the cost of electricity by enabling Bilateral Transactions across Namibia’s integrated electricity system.
Indicative Transmission Wheeling Charges  
*(based on transmission sales)*

### Indicative Average Transmission Charges

<table>
<thead>
<tr>
<th>Unbundled Service</th>
<th>Applies to Tx</th>
<th>Indicative Charge</th>
</tr>
</thead>
<tbody>
<tr>
<td>Connection charges</td>
<td>✓</td>
<td>✓ Specific</td>
</tr>
<tr>
<td>Energy from NP</td>
<td>✓</td>
<td>0.96</td>
</tr>
<tr>
<td>Tx losses charge</td>
<td>✓</td>
<td>0.11</td>
</tr>
<tr>
<td>Reliability charge</td>
<td>✓</td>
<td>0.10</td>
</tr>
<tr>
<td>Use of System charges</td>
<td>✓</td>
<td>0.42</td>
</tr>
<tr>
<td>Service charges</td>
<td>✓</td>
<td>0.00</td>
</tr>
<tr>
<td>Levies (ECB, NEF)</td>
<td>✓</td>
<td>0.04</td>
</tr>
<tr>
<td>EG incremental Tx losses charge/ rebate</td>
<td>✓</td>
<td>Specific</td>
</tr>
<tr>
<td>Network Export charge</td>
<td>✓</td>
<td>TBD</td>
</tr>
<tr>
<td>Network Capacity Reserve charge</td>
<td>✓</td>
<td>Specific</td>
</tr>
<tr>
<td>Balancing penalty</td>
<td>✓</td>
<td>Based on NP Energy rate</td>
</tr>
<tr>
<td>Energy from EG</td>
<td>✓</td>
<td>Negotiated</td>
</tr>
</tbody>
</table>

### Indicative Average Domestic Tx Charges

- **Energy**: 0.96
- **Losses**: 0.11
- **Reliability**: 0.10
- **Network**: 0.42
- **Services**: 0.00
- **Levies**: 0.04
- **Total**: 1.63

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*Graph showing the breakdown of indicative transmission charges.*
The MSB unlocks approximately 400MW Solar PV equivalent capacity

MSB creates more opportunities for competition, choice and increased private investment

This will give Namibia the best chance of building more local plant, as efficiently as possible

An opportunity for REDs and LPU Dx to procure energy from IPPs

Customers who choose to buy / generate own electricity will be allowed utilise distribution network at a fee;

- Network Access fees
- Use of System charges
- Reliability fees

Distributors should adapt to the new market conditions

Allow Namibia to build generation plants for export purposes
Thank You!

www.ecb.org.na