



# **ELECTRICITY CONTROL BOARD**

## **NET METERING**

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### **NATIONAL CONNECTION CHARGE POLICY for LOAD CUSTOMERS and GENERATORS**

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# NET METERING

# Presentation Overview



- **Background and Objectives**
- **Net Metering Project Overview**
- **Project Status**

# Background



- **In 2010 the ECB developed a Procurement Mechanism for RE Resources in Namibia to;**
  - increase the share of indigenous RE resources by levelling the playing field between conventional and renewable energy technologies
  - develop a framework and tariff methodology to ensure that a sustainable, transparent and fair tariff methodology is developed for RE resources in Namibia
- **In 2011 the following methods approved by the Minister,**
  - Tendering,
  - REFIT
  - Net Metering
  - Other support measures, soft loan, tax breaks and grants
- **In 2012 the ECB started with the implementation**
  - Tendering and REFIT – underway - Mid 2013
  - **Net Metering** (*project commenced in Nov 2012*)

# Net Metering Project Overview



- **Purpose of Net Metering is**

- to allow electricity users with roof top based PV and wind energy systems to offset part of their conventional electricity requirements,
- intended to encourage private investment in RE,
- to stimulate economic growth in the country,
- to contribute to energy security, and enhance diversification of Namibia's energy resources,

in line with the objective of the White Paper on Energy Policy of 1998.

- **Status ...**

- Project to Assess the Application and Development of rules was awarded in November 2012 to CAMCO and Blue Print Consultants
- Duration approx 5 months
- Produced a review of net metering practices
- Stakeholder Questionnaire to assist the ECB in developing the rules

# Net Metering Project Overview



- **Next, the ECB will,**
- **Produce documents for discussion with the SH**
  - draft assessment report and
  - draft Net Metering rules
- **Convene SH Workshops to discuss the documents**
  - First workshop is planned for end of March 2013
  - Incorporate SH comments
  - Final document end of April 2013
  - Promulgation by the Minister of Mines and Energy end 2013
- **Points to note**
  - Due to increasing dx tariffs, alternatives are becoming comparative in the short to long run
  - Licensee need to be geared to accommodate Net Metering facilities
  - Involvement of licensees is imperative



# **NATIONAL CONNECTION CHARGE POLICY for LOAD CUSTOMERS and GENERATORS**



- **Background, Objectives & Key Principles**
- **Network Connection Costs**
  - Connection Asset Classification
  - Capital Cost Recovery Options
  - Operating & Maintenance Costs
  - Capital Cost Refunds and Revisions
  - Premature Replacement and On-going Costs
- **Connection Application Process**
- **Summary Connection Charges**



# Background, Objectives & Key Principles

# Background



- **In 2006 the ECB developed a Connection Charge Policy Guideline to**
  - Provide direction to the transmission and distribution license holders in respect of the development of Connection Charge Policies and Agreements
  - Establish a tighter integration between the ECB revenue requirement and tariff methodologies and the licensee's Connection Charge Policy and Agreements
- **However,**
  - the development of individual Connection Charge Policies and Procedures per licensee progressed slowly and at different rates.
  - This resulted in fragmented and uncoordinated connection policies and agreements
- **Consequently the ECB initiated a project to develop a National Connection Charge Policy that will be applicable to all Network Licensees**

# Connection Charge Policy Documents Reviewed



- **ECB Connection Charge Policy Guideline for Namibia (Draft-201106)**
- **NamPower Transmission Connection Charge Policy for Load Customers and Generators (v25,23.05.11.AMS)**
- **CENORED Connection Policy (DRAFT \_RB\_ NOV10)**
- **ERED Connection Policy (final to ECB - 2011-02-09)**
- **NORED Capital Contributions and New Connection Policy (Corporate Service Policy 1 Rev 1)**
- **Comments provided by several stakeholders following earlier workshops**
- **Best Practices**

# Objectives of National Connection Charge Policy



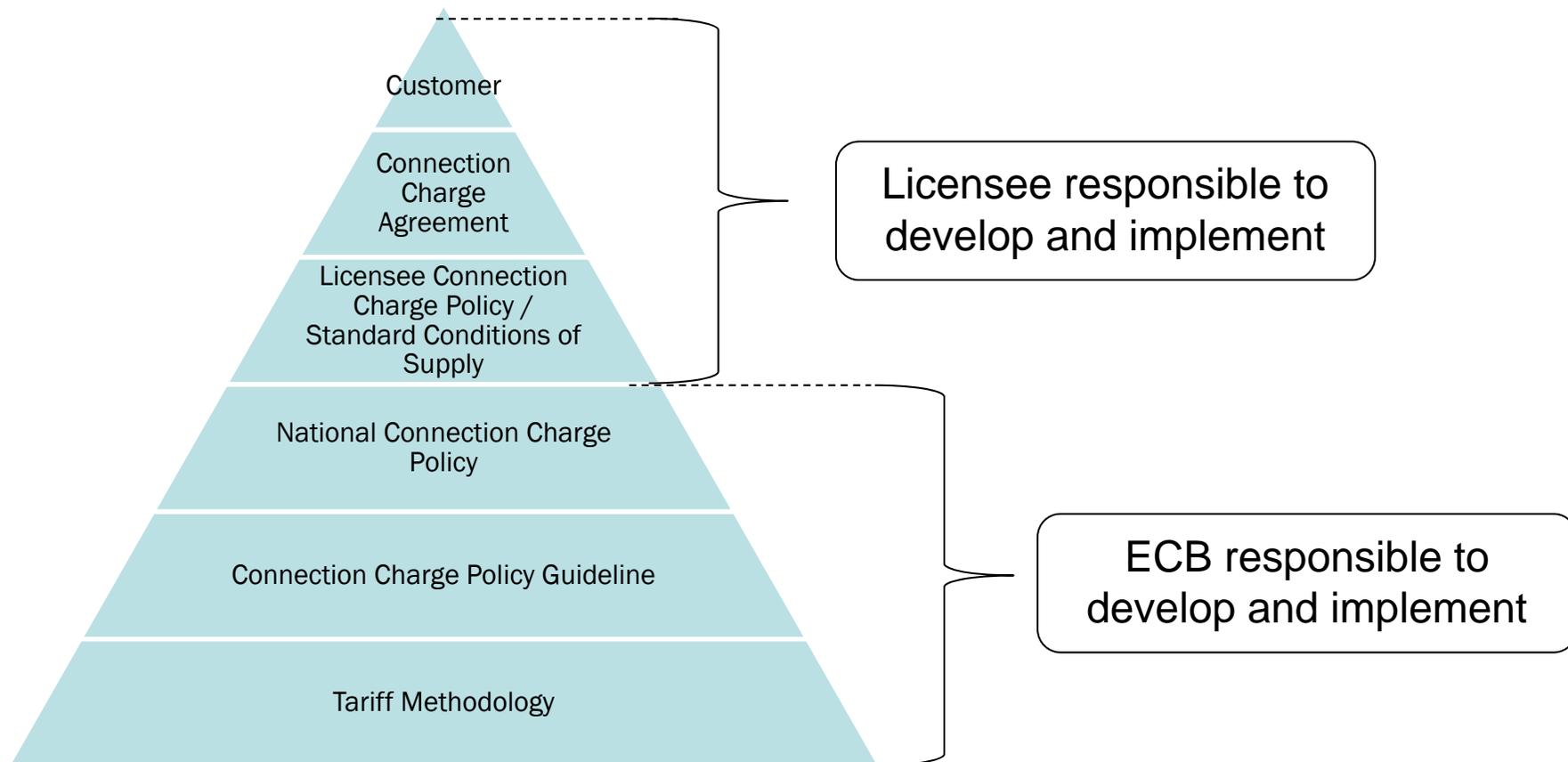
- **Identify parties to whom the Connection Charge Policy applies.**
- **Establish a set of base connection charge principles.**
- **Describe the process of application for new connections or upgrades to existing supply arrangements.**
- **Identify the different costs to be recovered via connection charges.**
- **Set a standard methodology for determining Connection Charges.**
- **Provide a governance structure to deal with network connection matters**

# Connection Charge Principles



- **Equality** - no unfair discrimination between customers or classes of customers
  - customers with similar connection arrangements should bear similar charges, subject to considerations of economic efficiency.
- **Efficiency** - encourages the best use of scarce resources.
  - Prices are based on the cost of supply.
  - As appropriate directly attributable costs are allocated to customers (“user must pay”)
  - Appropriate tariff structures to encourage the efficient use of the infrastructure
- **Simplicity** - number of advantages:
  - Faster quotations for customers (and an overall reduced connection time, thereby improving customer service).
  - Easy for the customer to understand.
  - Reduced administrative overheads.
  - Reduction in auditing overheads

# Role of National Connection Charge Policy



- **Hierarchy of documents is to promote alignment in the industry and to facilitate investments**

# Connection Charges in Perspective



Generation

Transmission

Distribution

Revenue Requirement

Energy Trading costs

Customer Services costs

O&M costs

Network costs

= Revenue Recovery

Customer Service Charges (N\$/month)

Usage Charges (c/kWh)

Use of System Charges

- Access Charges (N\$/kVA)

- Demand Charges (N\$/kVA)

- Capacity Charges (N\$/Ampere)

Connection Charges (N\$, N\$/month)

Connection Charges is one of the charges used to recover the total cost of supply (Revenue Requirement)

## Connection Charge Principles (2)



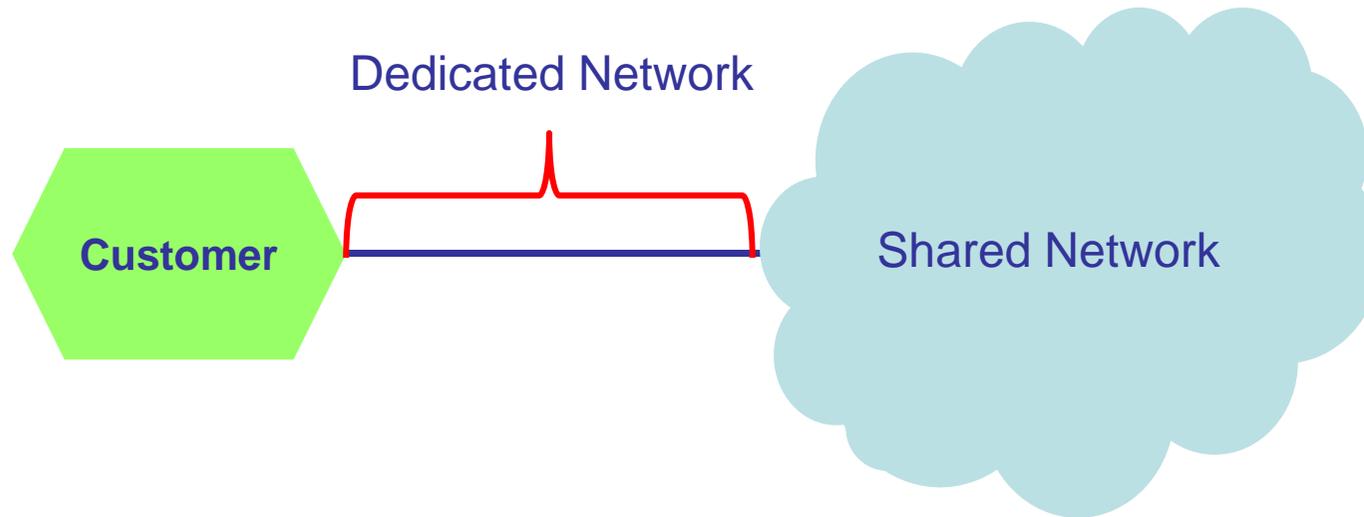
- **No Double Counting** – Licensees should take care not to charge customers twice for the same assets.
  - Once through connection charges and then again through Network Usage Charges
  - Connection assets must be excluded from Rate of Return and Depreciation calculations.
  - Income from monthly O&M Connection charges must be subtracted from Revenue Requirement

# Applicability of Connection Charge Policy



- **New Connections**
  - Policy applicable to all customers (consumers and producers) entering into or who intend entering into a Connection Agreement with a Network Licensee
- **Existing Connections**
  - Policy shall not have retrospective applicability and shall not supersede Connection Agreements or Connection Charges already in place. These legacy agreements will be honoured by the Network Licensee.
  - Once an existing Connection Agreement has terminated it will be replaced with a new Connection Agreement that complies with the principles set out in this Policy
- **The Connection Charge Policy is supplementary to the general provisions set out in the Network Licensee's standard conditions of service and/or supply and should be read in conjunction with these**

# What is meant by Connection Assets?



- **Connection Assets refers to those new network assets that are needed to provide a customer with an electrical supply**
- **Connection Assets can fall into one of two groups:**
  - Dedicated Network Assets (assets used exclusively by the customer)
  - Shared Network Assets (assets that are used by many customers)



## **Network Connection Costs**

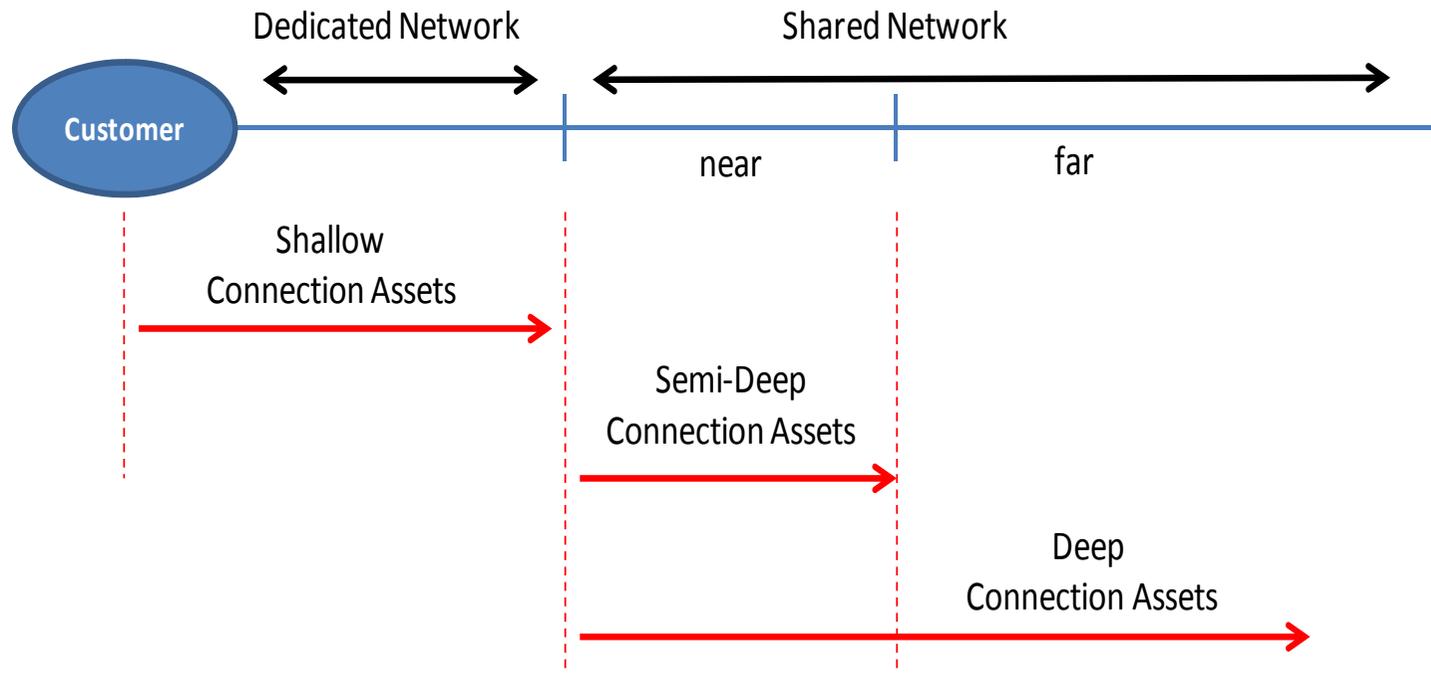
# Network Connection Costs



- **Connection Charges should recover the costs incurred by the Network Licensee in respect of the specific connection assets provided for the use or benefit of the Customer**
- **Costs that may be recovered via Connection Charges:**
  - Capital Costs (Capital Contribution)
  - Operating and Maintenance Costs
  - Premature Replacement and On-going Costs for Connection Assets
  - Connection Quote Costs
- **Costs of network infrastructure associated with servicing the broad base of Customers (“pooled infrastructure” or “Shared Network”) are recovered via Network Use-of-System (UOS) Charges**

# Network Connection Costs

## Connection Asset Classification (1)



- **Dedicated Network** – electricity transmission or distribution network that is used exclusively by a single Customer or group of Customers
- **Shared Network** – electricity transmission or distribution network that is shared by a large number of Customers and cannot easily be attributed to identified Customers

# Network Connection Costs

## Connection Asset Classification (2)



- ***Shallow Connection Assets***
  - Those assets which are situated in the immediate vicinity of the customer's point of connection and are solely for the purpose of connecting a Customer or specific group of Customers with common interest on a Dedicated Network
- ***Semi-Deep Connection Assets***
  - Those assets within the Shared Network located at or near the customer's point of connection that need to be reinforced or strengthened in order to connect the Customer and enable the Customer to inject power (in the case of a generator) or take supply (in the case of a load) up to a specified maximum injection or off-take limit (capacity)
  - Assets
    - located at or near the Customer's point of connection,
    - Would not otherwise have been required in the absence of the Customer connection in question,
    - Do not fall within the definition of Shallow Connection Assets,
    - Shall not include assets beyond the next point of voltage transformation (voltage change)
    - Are easily identifiable and their costs can be apportioned without difficulty.

# Network Connection Costs

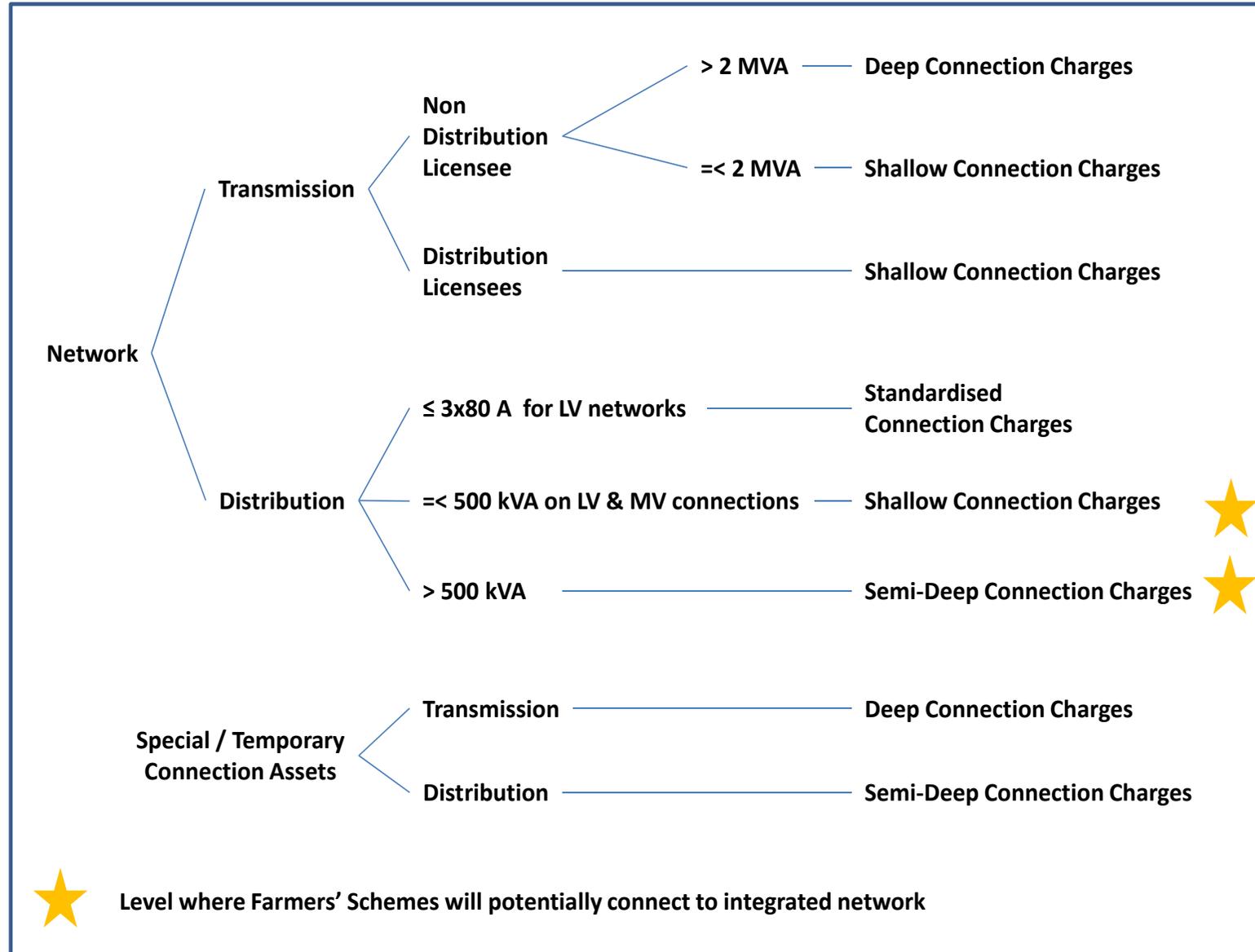
## Connection Asset Classification (3)



- ***Deep Network Assets***
  - New assets within the Shared Network that are required to connect the Customer where such assets may be located at or near the customer’s point of connection, or may be located far within the network
- ***Special Connection Assets***
  - Assets or equipment that may become stranded (i.e. made redundant before the end of their economic lives) or
  - assets that are specifically designed and constructed to the specific needs of the Customer, which are not standard equipment of the Network Licensee and cannot be used elsewhere in the system (e.g. required to deliver a “premium supply” that exceeds the Quality of Supply (QoS) standards applicable to the rest of the network)
- ***Temporary Connection Assets***
  - Connection assets that are required for a connection period of shorter than 18 (eighteen) months (e.g. a Temporary Connection that is mainly used for the purpose of Construction Supply, whilst the Network Licensee is constructing the permanent connection)

# Network Connection Costs

## Capital Costing Decision Tree





## Connection Charges

Upfront  
Charges

Monthly Charges

Any remaining  
capital cost not  
recovered as an  
upfront charge

On-going  
operating &  
maintenance  
costs

# Network Connection Costs

## Capital Cost Refunds and Revisions



- **The Policy supports refunds to existing Customers if there are “late comers” who wish to make use of the existing Connection Assets**
- **Existing Customers should be compensated (refunded) for a portion of the Initial Connection Charge and, if applicable, have their Monthly Connection Charges revised**
- **Funding of refunds**
  - If the Licensee decides to pool the connection costs then the funds needed to compensate the existing Customers will form part of the utility’s overall revenue requirement and be recovered from all customers via the Use-of-System Charges.
  - If the Licensee decides to allocate the connection costs to existing and new Customers then the money needed to refund the existing Customers will be collected from the new Customers.
  - The Licensee is responsible for the collection and disbursements of any refunds
- **Capital Refunds will be based on the proportional capacity required by the new applicant(s), while the methodology to determine the revised Monthly Connection Charge is applied**

# Network Connection Costs

## Operating & Maintenance Costs – Charge Options



- **Allocated Costs**
  - O&M costs associated with connection related assets are allocated directly to the Customers and recovered via the Monthly O&M Charge.
- **Pooled Costs**
  - O&M costs associated with connection based assets are pooled and spread over all the network customers.
  - Pooled costs do not form part of the Connection Charges and are recovered via network Use-of-System (UOS) Charges.

# Network Connection Costs

## Premature Replacement and On-going Costs



- **Premature Replacement (i.e. during term of Connection Agreement)**
  - Not to be allocated to the Customer provided that the Customer was not the principle cause of the damage
- **On-going Connection Asset Costs**
  - The replacement and/or O&M costs associated with dedicated connection assets once a Connection Agreement has expired will be:
    - Recovered from the new connecting customer if a new Connection Agreement is concluded.
    - incorporated into the pooled or Shared Network infrastructure and recovered from all customers via the Access/Use-of-System Charges if a new Connection Agreement is not concluded.

# Network Connection Costs

## Asset Ownership and Construction



- **Asset Ownership**
  - All Connection Assets will be owned, operated and maintained by the Network Licensee
- **Connection Asset Construction by Customer**
  - Under exceptional circumstances Customers may offer to construct the Connection Assets on behalf of the Network Licensee.
  - To be done in consultation with the Network Licensee and in accordance with the Network Licensee's standard requirements and specifications,
  - Upon completion and at no cost the Connection Assets will be handed over to the Network Licensee to own, operate and maintain.

# Impact of Connection Charges on Network Licensee's Revenue Requirement



- **In terms of the National Connection Charge Policy – Customers are expected to pay for a portion of the network creation and operating costs.**
- **To prevent customers from being charge twice for the same assets it is important that the ECB and Licensee apply the following adjustment when determining the Licensee's revenue requirement.**
  - Assets that have not been funded by the Licensee (e.g. customer funded assets) must be removed from the asset base when determining the Return on Asset and Return of Assets components of the revenue requirement
  - O&M revenue recovered via Connection Charges should be deducted from the Licensee's revenue requirement
  - On-going (e.g. monthly) connection charges to recover any remaining capital costs will not result in any adjustments (reason is that connection assets have been removed from asset base – first bullet



# Connection Application Process

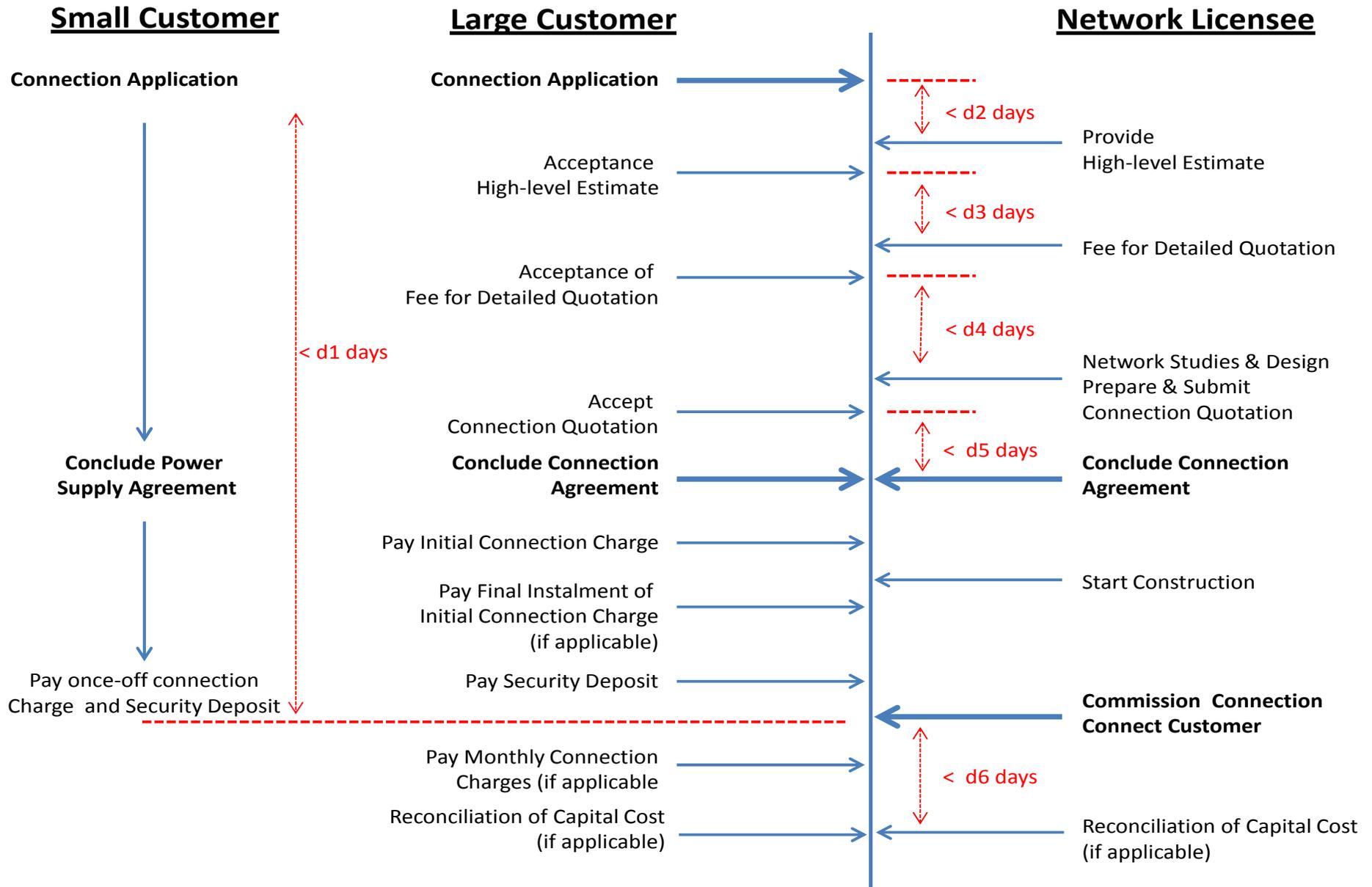
# Connection Application Process

## Small vs Large Connections



- **The Connection Application Process differentiates between**
  - **Small Connections** ( $\leq 3 \times 80\text{A}$ )
    - Simple “standardised” application
    - No Connection Charges
  - **Large Connections** ( $> 3 \times 80\text{A}$ )
    - Connection application process comprising estimates/quotation & approval
    - Initial and Monthly Connection Charges (as applicable)

# Connection Application Process Process and Timeframes



# Connection Application Process Timeframes



- The proposed timeframes for the Connection Application Process are summarised below

Parameter	Value
d1	60 days
d2	30 days
d3	30 days
d4	90 days
d5	30 days
d6	90 days

# Connection Application Process

## Connection Cost Quotation Fees



- **It is recognised that the Network Licensee may incur costs to conduct network integration studies and initial design work for new connections or upgrades**
- **Such costs may be recovered in full as a Connection Quotation Fee prior to the Network Licensees undertaking such studies and designs**
- **The Connection Quotation Fee is non-refundable**
- **The process governing the presentation, approvals and application of this fee is set out in the application process**

# Conclusion



- **The final National Connection Charge Policy is available**
- **Will be presented to ECB Board for approval and recommendation to the Minister**
- **Will be promulgated as rules or regulations**
- **Licensees are advised to adopt the principles of the National Connection Charge Policy**
- **This is an over arching document in addition to Licensee's specific Standard Condition of supply**



**End**