The South African Wholesale Electricity Market (SAWEM) Market Code

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1 INTRODUCTION

1.1 Purpose

(1) This Market Code provides for the purchase and sale of electrical energy by participating Generators, Consumers and Traders as well as the physical delivery and consumption of electricity on a short term basis, within a framework of medium and long term security of supply.

(2) This Market Code sets out the trading and settlement rules and procedures for participation in the South African Wholesale Electricity Market including the required supporting functions and rules and responsibilities for short term system balancing.

(3) The Market Operator is required under the Act to develop this Market Code to give effect to the requirements for an open market platform that allows for competitive electricity trading as provided for in the Act.

2 GENERAL

2.1 Definitions

(1) **“Accession fee”** means a fee applied by the Market Operator to all Applicants;

(2) **"Act"** means the Electricity Regulation Act (Act 4 of 2006), as amended, and the regulations made thereunder;

(3) **“Active Energy”** means the useful electrical energy produced, flowing or supplied by an electric circuit during a time interval, being the integral with respect to time of the instantaneous power;

(4) **“Active Power”** means the useful electrical energy in an electric circuit;

(5) **“Actual Energy”** means the measured energy produced or consumed at the Point of Delivery in a particular Trading Period;

(6) **“Administered Prices”** means the prices established by the MGC for application in the event of a System Failure or Electrical System Collapse. These will be the Wholesale Tariff unless otherwise indicated by the MGC;

(7) **“Administered Quantity”** means the quantity of production or consumption established for each Trading Unit for each Trading Period arising from the Administered Schedule;

(8) **“Administered Schedule”** means the schedule developed by the Market Operator in the event of a System Failure providing Administered Quantities and Administered Prices for each Trading Period, and following to the greatest degree practicable the results that would have been determined by the scheduling algorithm;

(9) **“Administered Settlement”** means the settlement calculations produced by the Market Operator in the event of a System Failure or Electrical System Collapse;

(10) **“Applicable Laws”** means:

a) any constitution, statute, ordinance, treaty, decree, proclamation or subordinated legislation or other legislative measure, as well as the common law and customary law and any judgement, decision, order or rule of any court or tribunal with relevant jurisdiction, in each case having the force of law in South Africa;

b) any present or future directive, requirement, instruction, request, order, regulation, condition of or the limitation in any necessary approval, permission, permit, approval, consent, licence, authorisation, registration; and/or

c) a grant, acknowledgement, exemption or agreement obtained from any Responsible Authority, or direction or rule of a Responsible Authority, which is legally binding or, if not legally binding, would customarily be complied with by a Reasonable and Prudent Operator, including the Codes;

(11) **“Applicant”** means a legal person that applies to become a Market Participant;

(12) **“Automatic generation control”** means the automatic centralised closed loop control of units by the System Operator;

(13) **“Availability”** means a Trading Unit's capability in MW to deliver Active Power or a Trading Unit’s capability of reducing its Active Power consumed;

(14) **“Balance Responsible Party”** means a licensed or registered generator, distributor or trader that is responsible for balance responsible activities, and which is accountable through the balancing mechanism for deviations;

(15) **“Balancing”** means ensuring that supply and demand on the NIPS are in balance in real-time;

(16) **“Balancing Agreement”** means the agreement that sets out the roles and responsibilities of the Balance Responsible Party and the Market Operator as the parties to the agreement;

(17) **“Balancing Energy Bought”** means the energy offered by Trading Units in the day-ahead market and available to the System Operator for real-time dispatch (representing energy scheduled for generation in the day-ahead market that is available to be reduced or consumption above the scheduled consumption in the day-ahead market);

(18) **“Balancing Energy Bought Stack”** means the merit order of Trading Units available for real-time dispatch (specifically for reduced generation or increased consumption) by the System Operator in descending energy price (as offered in the Day Ahead Market);

(19) **“Balancing Energy Sold”** means the energy offered by Trading Units in the day-ahead market and available to the System Operator for real-time dispatch (in addition to energy scheduled for generation in the day-ahead market or representing reduced consumption below the scheduled consumption in the day-ahead market);

(20) **“Balancing Energy Sold Stack”** means the merit order of Trading Units available for real-time dispatch (specifically for increased generation or decreased consumption) by the System Operator in ascending energy price (as offered in the Day Ahead Market);

(21) **“Balancing Group”** means a group of two or more Trading Units designated by a Balance Responsible Party for the purposes of aggregating Trading Unit imbalances across the Balancing Group;

(22) **“Balancing Market”** means the Southern African Power Pool Balancing Market;

(23) **“Balancing Mechanism”** means a mechanism used by the system operator to balance the supply and demand of electricity in real time on the power system by cost effective dispatching of generation and demand resources; for clarity this refers to the Balancing process in the SAWEM;

(24) **“Balancing Penalty Factor”** means the ratio of the day-ahead System Marginal Price applied to ensure a minimum balancing penalty in the Balancing Mechanism;

(25) **“Bank”** means a holder of a relevant banking licence or authorization issued under the Banks Act 94 of 1990 or the Mutual Banks Act 124 of 1993;

(26) **“Billing Period”** means one calendar month commencing at 00:00 on the first day of the month;

(27) **“Capacity Payment”** means a payment, for generating capacity or demand-response capacity, from the Central Purchasing Agency, System Operator or Market Operator;

(28) **“Capacity Qualifying”** means that capacity of a Trading Unit applicable to a particular reserve category that is equal to:

a) *For a Generating Unit:* the minimum of the capacity contracted in the day-ahead reserve market for the reserve category and the Effective Available Capacity of the Trading Unit less the official energy Sent-out / Consumption for the Trading Unit (if this difference is positive and the Trading Unit had not been utilised for the reserve category or balancing services, providing that the Trading Unit official sent-out is greater than or equal to the Minimum Stable Generating Point (or 0 MW in the case of Ten-Minute Reserve) and less than or equal to the Maximum Continuous Rating of the Trading Unit) ;

b) *For a Demand-Response Unit:* the minimum of the capacity contracted in the day-ahead reserve market for the reserve category and the official energy consumption of the Trading Unit less the third elbow point on the consumption curve for the Trading Unit (if this difference is positive and the Trading Unit had not been utilised for the reserve category or balancing services, providing that the Trading Unit official consumption is greater than zero and less than or equal to the Declared Consumption of the Trading Unit);

(29) **“Central Purchasing Agency”** means the entity assigned in terms of the Act to fulfil the role of the wholesale buyer to maintain system integrity during, and after, the transition to a competitive electricity market;

(30) **“Code”** means the South African Distribution Code, the South African Grid Code, or any other code published by NERSA, as applicable and as amended from time to time;

(31) **“Collateral Reserve Account”** means a bank account established and maintained by a Market Participant to contribute to its Required Credit Cover;

(32) **“Commencement Date”** means the date approved by NERSA for the commencement of this Market Code;

(33) **“Consumed” or “Consumption”** means the amount of electrical energy required or used by consumers over a period of time;

(34) **“Consumer”** means a person who uses electricity or a service relating to the supply of electricity;

(35) **“Contingency Reserve”** means generating or demand side resource capacity that is available to respond to the System Operator’s instruction and identified day-ahead for contingencies as requested by the System Operator;

(36) **“Contracted Energy”** means the energy scheduled in the more recent Intra-day Market for each Trading Unit in a particular Trading Period and applicable to the Balancing Mechanism payments;

(37) **"Control Area"** means an electrical system with borders defined by points of Interconnection and capable of maintaining continuous balance between the generation under its control, the consumption of electricity within the electrical system and the scheduled interchanges with other Control Areas;

(38) **“Constrained Schedule”** means the day-ahead schedule determining the optimal dispatch for all Trading Units for each Trading Period of the Trading Day taking into consideration the requirements applied under the Unconstrained Schedule as well as the additional security constraints imposed by the System Operator to cater for network constraints as well as other constraints required to meet security of supply objectives;

(39) **“Cost above Energy Market”** means the compensation due to a Trading Unit as a result of providing Regulating Down Reserve Capacity where the Trading Unit is scheduled to produce more than the optimum energy solution;

(40) **“Cost Increment”** means the incremental cost for a Trading Unit to provide the additional energy between two elbow points on the price curve, or the incremental cost for a Demand-Side Unit to reduce energy between two elbow points on the price curve;

(41) **“Cost of Lost Opportunity”** means the forgone opportunity (or profit) in the Energy market as a result of providing Instantaneous, Regulating Up Reserve Capacity, and/or Ten-Minute Reserve Capacity;

(42) **“Court”** means the South African courts;

(43) **“Creditors”** means the counterparts to any outstanding payments or Unsecured Bad Debt arising from the SAWEM;

(44) **“Credit Call”** means the drawing down of a Market Participant's Credit Cover from its Credit Cover Provider;

(45) **“Credit Cover”** means the credit cover required of and provided by a Market Participant in a form which meets the requirements of this Market Code;

(46) **“Credit Cover Provider”** means a financial institution which is registered under Applicable Law to carry on the business of extending credit in South Africa, and holds a credit rating of:

i) at least one investment grade long-term unsecured local currency debt rating by a rating agency which is at or better than ‘BBB-’ (as determined by Standard and Poor’s Rating Group or Fitch Ratings), ‘Baa3’ (as determined by Moody's Investor Services, Inc.); or

(ii) long-term unsecured local currency debt rating not worse than the highest South Africa’s sovereign local currency debt rating; or

(iii) South African Long-term National Scale Rating no worse than ‘zaA-’ (as determined by Standard & Poor’s) or ‘A-(zaf)’ (as determined by Fitch Ratings) or ‘A3.za’ (as determined by Moody's Investor Services, Inc.) or

(iv) equivalent rating to any of the above ratings;

(47) **“Customer”** means a person who purchases electricity or a service relating to the supply of electricity;

(48) **“Data Verification Period”** means the period when Market Participants have the opportunity to query any data included on the Indicative Settlement Statements;

(49) **“Data Query”** means any query made by a Market Participant in relation to one or more settlement items in an Indicative Settlement Statement;

(50) **“Day Ahead Market”** means the wholesale electricity market platform for the trading of electrical energy which operates day-ahead, i.e. *ex ante*, with Market Participants submitting bids and offers for Energy, and the Market Operator clearing contracts between itself and Market Participants;

(51) **“Debit Note”** means a document issued by the Market Operator identifying the allocation of Unsecured Bad Debt to a Market Participant in each Billing Period;

(52) **“Declared Available Capacity”** means the maximum sent-out to which a Trading Unit may be scheduled in a Trading Period of a Trading Day;

(53) **“Declared Consumption”** means the forecast consumption of the Trading Unit and the maximum consumption to which a Trading Unit may be scheduled in a Trading Period of a Trading Day;

(54) **“Default”** means any default by a Party as contemplated in section 6.3(2);

(55) **“Defaulting Participant”** means a Market Participant that is in Default;

(56) **“Defaulting Party”** means a Party that is in Default;

(57) **“Default Interest”** means the interest applied by the Market Operator to a Defaulting Party on any Shortfall or Unsecured Bad Debt;

(58) **“Default Notice”** means a notice issued by the Market Operator to a Defaulting Party;

(59) **“Default Retailer”** means a Retailer that is required by NERSA to supply consumers within a specific jurisdiction;

(60) **“Demand-side resource”** means a Customer that can respond to System Operator instructions (either in real-time, day-ahead or any other predetermined time as agreed with the SO) for Load Curtailment;

(61) **“Demand Side Unit”** means a demand-side resource that has been defined as a Trading Unit that purchases power, excluding System Operators and Network Operators;

(62) **“Deregistration”** means the process whereby a Trading Unit (or parts thereof) of a Market Participant, or, in the case of de-registration of all of its Trading Units, a Market Participant ceases to be registered for the purposes of this Market Code;

(63) **"Dispatchable"** means the SO is authorised under the Codes to influence the dispatch of the Trading Unit and the Trading Unit is able to respond to Dispatch Instructions;

(64) **“Dispatching”** means the scheduling, coordination and management of the flow of electricity from or to Trading Units into and out of a transmission power system or an interconnected distribution power system, including scheduling, coordinating and managing the start-up and shut-down of these Trading Units, and ‘**dispatch**’ has a corresponding meaning;

(65) **“Dispatch Algorithm”** means the algorithm utilised by the Market Operator and System Operator for the scheduling and dispatch of Trading Units as required under the Codes;

(66) **"Dispatch instruction"** means the instruction from the SO to a Trading Unit to effect a change in output, consumption or reserve capacity either in real-time or in a predetermined time;

(67) **“Dispute”** means any claim, dispute or difference of whatever nature between any of the Parties arising under, out of or in relation to this Market Code or under a Market Participant Contract;

(68) **“Disputed Event”** means any event, circumstance, claim, difference, Default, assertion of right or entitlement, or denial of right or entitlement in relation to which a Party seeks to raise a Dispute;

(69) **“Dispute Resolution Board”** means a board appointed by the Market Governance Committee in accordance with this Market Code to resolve disputes between Disputing Parties;

(70) **“Dispute Resolution Process”** means the process of resolving Disputes as specified in this Market Code;

(71) **“Disputing Parties”** means any Party to a Dispute;

(72) **“Distribution”** means the conveyance of electricity through a distribution power

system excluding trading, and “distribute” and “distributing” have corresponding meanings;

(73) **"Distribution Network"** means the network owned or operated by a Distributor;

(74) **"Distribution Power System"** means network infrastructure operating at nominal voltages of 132kV and below;

(75) **“Distribution System Operator”** means an operator responsible for the operation of a Distribution Power System and Distribution Network;

(76) **“Distributor”** means a person who distributes electricity;

(77) **“DSU Suspension Delay Period”** means the time period it will take to make a Suspension Order effective for a DSU;

(78) **“Economic Merit Order”** means the ranking of available resources (Generating Units and Demand-side resources) based on ascending order of incremental price;

(79) **"Effective Available Capacity"** means the actual available capacity of a Generator or Demand-side resource at any instant taking into account actual events, in particular outages, constraints or load losses;

(80) **"Electrical System Collapse"** means the situation existing when all generation has ceased in part of or across the entire Transmission System and there is no electricity supply such that Black Start procedures as set out in the System Operator Code are initiated;

(81) **“Emergency Level 1”** means the extra capacity from generating units over and above their maximum continuous ratings that can be supplied as agreed with the system operator. This level is achieved without significant additional cost;

(82) **“Emergency Meeting”** means a meeting of the Modifications Subcommittee called by the Market Governance Committee to consider an Urgent Modification Proposal;

(83) **"Emergency Operating Condition"** means a situation where Generators or Network Operators have an unplanned loss of facilities, or another situation beyond their control, that impairs or jeopardises the integrity of the NIPS and compromises safety of personnel, plant and equipment;

(84) **"Energy"** means the electricity produced, flowing or supplied by an electric circuit over a particular time interval, being the integral with respect to time of the instantaneous power, measured in units of watt-hours (Wh) or standard multiples thereof, i.e.:

(a) 1000 Wh = 1 kWh

(b) 1000 kWh = 1 MWh

(c) 1000 MWh = 1 GWh

(d) 1000 GWh = 1 TWh.

(85) **“Energy Limit”** means an upper limit on the amount of Energy that can be provided by a Trading Unit during a specified period;

(86) **“Excess Participant”** means a Market Participant where a Debit Note issued by the Market Operator in a Billing Period exceeds the amount of the applicable Self Billing Invoice in that Billing Period;

(87) **“Export and Import Licence”** means the licence granted by NERSA to entities allowed to export power from and/or import power to South Africa;

(88) **“Fixed Market Operator Charges”** means a charge applied by the Market Operator that is fixed in nature (i.e. is not related to the quantum or value of energy traded by the Market Participant);

(89) **“Final Modification Recommendation”** means a recommendation by the Modifications Subcommittee in relation to a Modification Proposal, which is submitted to the MGC for approval as part of a Modification Recommendation Report;

(90) **"Flexible"** means that the Trading Unit can be scheduled or dispatched by the System Operator in that Trading Period according to the Economic Merit Order determined in the Dispatch Algorithm;

(91) **“Flexible Indicator”** means the indicator provided in the day-ahead submission by a Market Participant to indicate whether the Trading Unit is flexible or inflexible in the Trading Period;

(92) **“Force Majeure Event”** means any event or circumstance, or combination of events or circumstances: that is beyond the reasonable control of the person; that adversely affects the performance by the person of its obligations under this Market Code, the Codes or NERSA rules; and the adverse effects of which could not have been foreseen and prevented, overcome, remedied or mitigated in whole or in part by the person through the exercise of diligence and reasonable care, and includes, but is not limited to: acts of war (whether declared or undeclared), invasion, armed conflict or act of a foreign enemy, blockade, embargo, revolution, riot, insurrection, civil disobedience or disturbances, vandalism or act of terrorism; strikes, lockouts, restrictive work practices or other labour disturbances; unlawful arrests or restraints by governments or governmental, administrative or regulatory agencies or authorities; orders, regulations or restrictions imposed by governments or governmental, administrative or regulatory agencies or authorities unless the result of a violation by the person of a permit, licence or other authorisation or of any applicable law; epidemics or pandemics; and acts of God including lightning, earthquake, fire, flood, landslide, unusually heavy or prolonged rain or lack of water arising from weather or environmental problems;

(93) **“Generating Facility”** means any apparatus which is licensed or registered to operate a generating facility, and that produces electricity, including both synchronous and nonsynchronous apparatus in a single physical location;

(94) **"Generating Unit"** means an independently controllable generating set, especially an alternator and all related equipment including the generation transformer that can be connected to the NIPS. In the case of wind generation the generating unit can refer to the Generating Facility rather than to the

individual generating sets;

(95) **"Generator"** means a person who generates electricity;

(96) **“Generator Curtailment”** means the amount of Active Power that a Trading Unit is permitted to generate due to a restriction imposed by the SO, TNSP or other Network Operator due to network or system constraints as provided in the Codes;

(97) **“Generator Suspension Delay Period”** means the time period it will take to make a Suspension Order effective for a Generating Unit;

(98) **“High Materiality”** means an amount over the Materiality Threshold (set by the MGC) in respect of a single Market Participant;

(99) **“Imbalance Energy Bought”** means the sum of deviations of Actual Energy metered from the Instructed Energy where the Instructed Energy exceeds the Actual Energy;

(100) **“Imbalance Energy Sold”** means the sum of deviations of Actual Energy metered from the Instructed Energy where the Actual Energy exceeds the Instructed Energy;

(101) **"Incremental Cost of Production"** means the additional cost of production associated with each additional unit of output;

(102) **“Indicative Settlement Statements”** means the Settlement Statement sent to Market Participants before the Initial Settlement Statements are calculated, to allow the Market Participants to quality check the data that is going to be used in the calculation of the Initial Settlement Statements;

(103) **"Initial Settlement”** means the settlement calculations performed within five business days from the settlement day and on which the Invoices and Self Billing Invoices are based;

(104) **“Initial Settlement Statements”** means the Settlement Statements that are issued for invoicing;

(105) **"Inflexible"** means that the Trading Unit cannot be scheduled or dispatched at any level other than the indicated available capacity for that Trading Period;

(106) **“Installed Generation Capacity”** means total net maximum capacity (MW) of all qualifying generators;

(107) **“Instantaneous Reserve”** means generating capacity or demand side managed load that is available to respond fully within 10 seconds to a drop in frequency. This response must be sustained for at least 10 minutes;

(108) **“Instantaneous Reserve Availability Indicator**” means the indicator provided in the day-ahead submission by a Market Participant to indicate whether the Trading Unit is available for Instantaneous Reserve in the Trading Period;

(109) **“Instantaneous Reserve Floor Price”** means the minimum price for Instantaneous Reserve as established by the MGC;

(110) **“Instructed Energy”** means the volume of Energy expected to be delivered or consumed by a Trading Unit if following Dispatch Instructions, and shall be calculated based on the Dispatch Instructions taking ramping constraints into consideration;

(111) **“Intellectual Property Rights”** means the legal rights given to an inventor or creator to protect their invention, creation, ideas, concepts, know-how and confidential proprietary information for a certain period of time;

(112) **“Interconnection”** or **“Interconnector”** means network facilities that connect two adjacent Control Areas;

(113) **“Intra-day Market”** means the wholesale electricity market platform for the trading of electrical Energy which operates after the Day-ahead Market but before real-time operation (gate closure one hour before real-time) with Market Participants submitting bids and offers for Energy, and the Market Operator clearing contracts between itself and Market Participants;

(114) **“Invoice”** means the statement of the payments required to be made to the Market Operator by a Market Participant in respect of the trading activities of that Market Participant in the SAWEM;

(115) **“Invoice Due Date”** means the date by which an invoice must be fully settled;

(116) **“Legal requirements”** means any requirement under Applicable Laws;

(117) **“Load Curtailment”** means load reduction obtained from customers who are able to reduce demand on instruction;

(118) **“Load Reduction”** means the ability to reduce customer demand by Load Curtailment and Load Shedding;

(119) **“Load Shedding”** means Load Reduction obtained by disconnecting load at selected points on the transmission or distribution system;

(120) **“Low Materiality”** means an amount below the Materiality Threshold (set by the MGC) in respect of a single Market Participant;

(121) **“Market”** means the platform that facilitates the trade of products and services;

(122) **“Market Assessment”** means an investigation conducted by NERSA into conditions of market power and effective trading in the SAWEM which may be conducted at any time but with the requirement that one Market Assessment is concluded each year during the Transition Period;

(123) **“Market Auditor”** means an independent person at any time appointed to perform an audit of the SAWEM;

(124) **“Market Bank”** means the Bank appointed by the Market Operator to fulfil its banking requirements;

(125) **“Market Balancing Account”** means the accounting aggregation of Balancing Mechanism payments and receipts that shall accrue to the System Operator for recovery as an Ancillary Service;

(126) **“Market Code”** means this document including any appendices;

(127) **“Market Code Secretariat”** means the function performed by the Market Operator to support the effective operation of the MGC, Modifications Subcommittee and the DRB;

(128) **“Market Conduct Rules”** means the Rules established for conduct of Market Participants;

(129) **“Market Creditor”** means a Party that is owed funds by the Market Operator as a result of settlement calculations;

(130) **“Market Governance Committee”** means the committee established by the Market Operator to provide oversight over the SAWEM and the Market Code;

(131) **“Market Operator”** means the person licensed to operate a trading platform for power market participants and who takes no ownership of the Energy traded, and fulfils the requirements of the Act and this Market Code;

(132) **“Market Operator Charge”** means a charge applied by the Market Operator for the services provided by the Market Operator;

(133) **“Market Operator Charge Account”** means a ring-fenced account in the Market Operator financial system to separate the Market Operator Charges from other payment obligations of Market Participants and Balance Responsible Parties in respect of the SAWEM;

(134) **“Market Operator Licence”** means the electricity licence granted by NERSA to the Market Operator specifying its obligations to operate the SAWEM under this Market Code;

(135) **“Market Participant”** means a Party that participates in the Day-Ahead and Intra-Day Markets in the SAWEM and is a BRP for trades undertaken on these platforms;

(136) **“Market Participant Agreement”** means an agreement between the Market Operator and a Market Participant regulating the participation of the Market Participant in the SAWEM;

(137) **“Market Price Cap”** means the maximum price for the System Marginal Price;

(138) **“Market Surveillance Unit”** means the function provided by the Market Operator for the monitoring and surveying of the Markets governed by this Market Code;

(139) **“Materiality Threshold”** means the threshold established by the MGC for determining whether the change to a settlement calculation is of High Materiality or Low Materiality. This threshold shall be R100 000 at Commencement Date.

(140) **“Maximum Continuous Rating”** means the Sent-Out capacity that a Trading Unit is rated to produce continuously under normal conditions;

(141) **“Metering Accuracy Band (MAB)”** means the allowance in terms of actual metered sent-out or consumption to cater for metering inaccuracy. Deviations

from contracted positions within the Metering Accuracy Band shall not attract balancing penalties;

(142) **"Minimum Stable Generation" or "Mingen"** means the minimum sent-out level of a Trading Unit without experiencing stability problems (such as with the associated boiler);

(143) **"Modification Proposal"** means any proposal to modify this Market Code through a proposal which is submitted to the MGC;

(144) **"Modification Recommendation Report"** means a report from the Modifications Subcommittee to the Market Governance Committee providing the recommendation of the Modifications Subcommittee regarding a Modification Proposal;

(145) **"Modifications Subcommittee"** means the subcommittee established by the Market Governance Committee to provide advice regarding the Market Code and Modifications thereto;

(146) **"National Integrated Power System"** means the electrical network comprising components that have a measurable influence on each other as they are operating as one system. This includes:

(a) the TS;

(b) the DS;

(c) assets connected to the TS or DS;

(d) power stations connected to the TS or DS;

(e) international Interconnectors; and

(f) the Control Area for which the SO is responsible;

(147) **"Net Export Curve"** means a curve indicating the aggregated buy and sales offers in the SAWEM Day-Ahead Market adjusting for any capacity payments or non-energy based payments;

(148) **"NERSA"** means the legal entity established in terms of the National Energy Regulator Act, 2004 (Act 40 of 2004), as amended;

(149) **"Network Zone"** means a zone established by the SO network model as a subset of the NIPS network structure within which Trading Units may be established;

(150) **"Network Operator"** means a transmission or distribution licensee;

(151) **"Normal Operating Condition"** means an operating condition which is not an Emergency Operating Condition;

(152) **"Non-dispatchable Trading Unit"** means a Trading Unit that establishes a physical trading position for their full output or consumption as per the day-ahead BRP schedule;

(153) **“Notice of Dispute”** means a notice specifying what is disputed, when the Dispute commences, and the Parties to the Dispute;

(154) **“Notice of Dissatisfaction”** means a notice served by a disputing Party to challenge a decision of the DRB;

(155) **“Out of Merit Energy”** means the allowance for capacity available to the System Operator for real-time balancing but not included in the calculation of balancing prices;

(156) **“Offer Data”** means one or more orders from a Market Participant to buy or sell Energy in the SAWEM;

(157) **“Party”** means a Market Participant, Network Operators, System Operators, the Market Operator or any other person governed by this Market Code;

(158) **“Point of Delivery”** means the electrical node where a Trading Unit is defined to trade Energy and is established under the standing data for the Trading Unit;

(159) **“Posted Credit Cover”** means the actual Credit Cover that is posted by a given Market Participant;

(160) **“Power Station”** means one or more generating units or generating facilities at the same physical site;

(161) **“Product”** means a tradable product defined in the different market segments of SAWEM;

(162) **“Qualifying Criteria”** means the criteria applicable to Market Participants as established in Annexure 1 to this Market Code;

(163) **“Real-time Dispatch Schedule”** means the actual schedule for a Trading Unit;

(164) **"Reasonable and Prudent Operator”** means a person seeking in good faith to perform its contractual obligations and, in so doing and in the general conduct of its undertaking, exercising that degree of skill, diligence, prudence, responsibility and foresight which would reasonably and ordinarily be expected from a skilled and appropriately experienced developer, contractor, owner or operator internationally, who is complying with all Applicable Laws, engaged in the same or a similar type of undertaking, in the same or similar circumstances and conditions, and any references herein to the "standards of a Reasonable and Prudent Operator" shall be construed accordingly;

(165) **“Registry”** means the register of relevant standing data for Market Participants and Balance Responsible Parties as maintained by the Market Operator;

(166) **“Referral Notice”** means a Notice from a Party to the Dispute Resolution Board;

(167) **“Regulating Reserve”** means generating capacity or demand side resource available to start responding to AGC instructions within 10 seconds and be fully activated in 10 minutes. This reserve category reserves capacity as part of the regulation ancillary service. The purpose of this is to allow for enough capacity to control the frequency and control area tie-lines power within acceptable limits in real time;

(168) **“Regulating Reserve Availability Indicator”** means the indicator provided in the day-ahead submission by a Market Participant to indicate whether the Trading Unit is available for Regulating Reserve in the Trading Period;

(169) **“Regulating Reserve Floor Price”** means the minimum price for Regulating Up Reserve and Regulating Down Reserve as established by the MGC;

(170) **“Required Credit Cover”** means the security posted for each Market Participant that is intended to cover the expected potential unpaid payment commitments to the Market Operator over the Settlement Risk Period;

(171) **“Reseller”** means a person who purchases electricity from a trading entity in order to sell such electricity to a consumer. For the purposes of this Market Code a Reseller is treated as a Consumer;

(172) **“Reserve Resource”** means a Trading Unit that is capable of providing different types of reserves (Instantaneous, Ten-Minute, and Regulating Reserve) as outlined in the definition of these services;

(173) **"Responsible Authority"** means any ministry, any executive, legislative, administrative or department, any minister, any organ of state, any official in the public administration or any other governmental or regulatory department, commission, institution, entity, service utility, board, body, agency, instrumentality or authority (in each case, whether national, provincial or municipal) or any court, each having jurisdiction over the matter in question;

(174) **“Retailer”** means a Trader that supplies energy to consumers that do not meet the qualifying criteria for Market Participants;

(175) **“SAPP Market Book of Rules”** means the rules with appendices and operational guidelines that governs the regional markets established under the Southern African Power Pool;

(176) **“SAWEM Market Participant with a Capacity Payment”** means a Market Participant that receives a Capacity Payment from the CPA, System Operator and/or Market Operator;

(177) **“SAWEM Market Participant without a Capacity Payment”** means a Market Participant that does not receive a Capacity Payment from the CPA, System Operator and/or Market Operator;

(178) **“Self Billing Invoices”** means an arrangement between the Market Operator and a Party whereby the Market Operator prepares an invoice and sends the copy to the Party along with the payment. This avoids the need for the Party to invoice the Market Operator for any payment due;

(179) **“Sent-out”** means the power or energy injected into the IPS by a Generating Unit or Generating Facility;

(180) **“Settlement Calendar”** means a schedule published by the Market Operator four months prior to the start of each Year indicating the timelines for settlement statements, Invoices and Self Billing Invoices for the coming Year;

(181) **“Settlement Day”** means the Trading Day with specific application to the settlement of trades relating to the Trading Day;

(182) **“Settlement Dispute”** means any Dispute which arises out of a failure to resolve a Settlement Query;

(183) **“Settlement Query”** means when the result of the Initial Settlement is claimed to be wrong by a Party, which may be escalated to a Settlement Dispute if not resolved;

(184) **“Settlement Recalculation Threshold”** means a percentage of change in Actual Energy or market schedule in a Settlement Day that results from a Validated Dispute or the settlement of a Data Query or a Settlement Query which will result in the Market Operator re-running the SAWEM, and which shall be proposed by the Market Operator from time to time and approved by the MGC;

(185) **“Settlement Reruns”** means a rerun of Settlement Statements for a given Billing Period when new data are available;

(186) **“Settlement Risk Period”** means the timeline from the beginning of the Billing Period until the cash is available on the Market Operator’s account and the time added needed to remedy in the event that a Market Participant is Suspended;

(187) **“Settlement Statements”** means a defined data set that incorporates a set of variables used to calculate all payments and charges to a Market Participant in respect of its Trading Units for a given Billing Period;

(188) **“Shortfall”** means an amount overdue by a Market Participant (excluding any Market Operator Charge) equal to the total of outstanding Invoices less payment received by the Market Operator for those Invoices (excluding any Market Operator Charge in those Invoices);

(189) **“South African Wholesale Electricity Market”** means the markets and products covered by this Market Code;

(190) **“South African Distribution Code”** means the Distribution Code approved by NERSA, as amended;

(191) **“South African Grid Code”** means the Grid Code approved by NERSA, as amended;

(192) **“Southern African Power Pool”** means the regional power pool established under the Southern African Development Community in 1995 with its registered office in Harare, Zimbabwe;

(193) **“Suspension Order”** means a written order suspending all or part of the rights of a Market Participant to participate in the SAWEM;

(194) **“Synchronous Condenser Operation”** means the mode of a Generating Unit that allows a voltage regulator to either generate or absorb reactive power as needed to adjust the voltage of the IPS. Any consumption of energy by a Generating Unit that is in Synchronous Condenser Operation mode will be charged to the System Operator by the Market Operator and not charged to the Generating Unit;

(195) **“System Failure”** means the unavailability of the Market Operator systems to accept day-ahead BRP schedules or Market Participant submissions, intra-day revisions, or schedule the day-ahead or intra-day markets within the time limits

imposed in this Code;

(196) **"System Marginal Price"** means the price for energy determined by the incremental price of the marginal unit scheduled to run in the Unconstrained Schedule in a scheduling period;

(197) **"System Operation Code"** means the subset of the South African Grid Code covering the system operations;

(198) **"System Operator"** means the person responsible for the operation of the national transmission system in real time, including dispatching, scheduling of transmission and ancillary services, generation outage coordination, transmission congestion management and coordination, and such other activities as may be required for the reliable and efficient operation of the national transmission system;

(199) **"Ten-Minute Reserve"** means generating capacity (synchronised or not) or demand side resources that can respond within 10 minutes when called upon. The purpose of this reserve is to restore instantaneous reserve and regulation reserve to the required levels after an incident;

(200) **"Ten-Minute Reserve Availability Indicator"** means the indicator submitted by a Market Participant for a Trading Unit's availability for Ten-Minute Reserve in a Trading Period;

(201) **"Ten-Minute Reserve Floor Price"** means the minimum price for Ten-Minute Reserve as established by the MGC;

(202) **"Terminated Party"** means a Party whose participation has been terminated either as a Party or as a Market Participant in respect of some or all of its Trading Units;

(203) **"Termination Order"** means an order from the Market Operator to a Party of its intent to discontinue that Party or its participation in respect of any or all of its registered Trading Units;

(204) **"Timetabled Settlement Rerun"** means a default Settlement rerun that occurs one Month after the initial Settlement run;

(205) **"Trader"** means a person that holds a trading licence issued by NERSA;

(206) **"Trading"** means the wholesale or retail buying and selling of electricity and 'trade' has a corresponding meaning**;**

(207) **"Trading Charges"** means the charges applicable to Market Participants and Balance Responsible Parties arising from the application of the settlement requirements of the Code;

(208) **"Trading Clearing Account"** means the account that a Market Participant has established in a Bank to participate in the SAWEM;

(209) **"Trading Day"** means the period from midnight to the following midnight of real-time operation;

(210) **"Trading Payments"** means the payments due to Market Participants and

Balance Responsible Parties arising from the application of the settlement requirements of the Code;

(211) **"Trading Period"** means a standard hour, specifically a period of time equal to sixty minutes in a twenty-four hour day and starting at 00 minutes in each case;

(212) **"Trading Unit"** means an aggregated construct of production and/or consumption components established by a Market Participant with the following conditions:

(a) A Trading Unit may not be aggregated across more than one Network Zone;

(b) The Maximum Continuous Rating of a Trading Unit of a Generator cannot be greater than 1000 MW unless approved by the SO;

(c) The metering configuration of the Trading Unit must encompass all the Energy production and consumption of the Trading Unit;

(213) **"Transition period"** means the period starting on the Commencement Date and continuing to a date as determined by NERSA following a Market Assessment;

(214) **"Transmission System"** means the network infrastructure operating at nominal voltages of above 132kV including assets that are approved by the Regulator to be part of the transmission system;

(215) **"Transmission Network Service Provider"** means, at any given time, the Network Provider licensed by NERSA to operate a transmission facility;

(216) **"Unconstrained Schedule"** means the day-ahead schedule determining the optimal dispatch for all Trading Units for each Trading Period of the Trading Day without taking into consideration additional security constraints imposed by the System Operator to cater for network constraints as well as other constraints required to meet security of supply objectives;

(217) **"Unsecured Bad Debt"** means a debt which arises as a result of the non-payment by a Market Participant. For the avoidance of doubt, this definition applies only for the purposes of this Market Code, and is not intended to imply that any particular sum is a "bad debt" within the meaning of this expression in any financial or accounting definition, standard or practice;

(218) **"Urgent"** means a Modification Proposal which is designated to be urgent and will be therefore be considered in accordance with a fast-track Modifications Process;

(219) **"Validated Dispute"** means a Dispute which the Dispute Resolution Board has resolved, in accordance with the Dispute Resolution Process, on the basis that a Settlement Statement has changed as a result of the Dispute;

(220) **"Variable Market Operator Charge"** means a charge applied by the Market Operator that is variable in nature (i.e. is related to the quantum or value of energy traded by the Market Participant);

(221) **"Vesting Contract"** means a contract or other financial arrangement between the National Transmission Company South Africa SOC Ltd (or Transmission System Operator SOC Ltd once established) and an Eskom generator or a Distribution licensee, as the case requires, for the sale of a specified amount of electricity at a price determined by the Regulator as a mechanism to facilitate the transition to a competitive market;

(222) **"Voluntary Termination"** means when a Party voluntarily decides to discontinue being a Party or deregister its Trading Units and is permitted to do so in accordance with this Market Code. Such voluntary termination will take effect from the Voluntary Termination Date;

(223) **"Voluntary Termination Consent Order"** means the order defining the terms of the Voluntary Termination by a Party under this Market Code;

(224) **"Voluntary Termination Date"** means the date indicated by the Market Participant, when a Voluntary Termination will go into effect;

(225) **"Warning Limit"** means the limit set by the Market Participant (or the maximum limit set by the MGC) to indicate when the Market Operator shall provide the Warning Notice with regard to the difference between the Credit Cover and the Required Credit Cover for the Market Participant;

(226) **"Warning Notice"** means the notice provided by the Market Operator to the Market Participant when the difference between the Credit Cover and the Required Credit Cover reaches the Warning Limit; and

(227) **"Wholesale Tariff"** means the regulated tariff approved by NERSA for wholesale Energy and related services.

2.2 Acronyms and Abbreviations

AGC	Automatic Generation Control
BM	Balancing Market, meaning the regional SAPP balancing market
BRP	Balance Responsible Party
CPA	Central Purchasing Agency
DAM	Day-ahead Market
DRB	Dispute Resolution Board
DS	Distribution Power System
DSU	Demand Side Unit
EL1	Emergency Level 1
EFT	Electronic Fund Transfer
ESI	Electricity Supply Industry
FPM	Forward Physical Market
IDM	Intra-Day Market
IPS	Interconnected Power System
MAB	Metering Accuracy Band
MCPR	Maximum Continuous Pump Rating
MCR	Maximum Continuous Rating
Mingen	Minimum Stable Generation
MGC	Market Governance Committee

MO	Market Operator
MSU	Market Surveillance Unit
NEC	Net Export Curve
NIPS	National Integrated Power System
SAPP	Southern African Power Pool
SAWEM	South African Wholesale Electricity Market
SCO	Synchronous Condenser Operation
SMP	System Marginal Price (or Day-ahead clearing price)
SO	System Operator
TNSP	Transmission Network Service Provider
TS	Transmission System

2.3 Interpretation

(1) In this Market Code, notwithstanding the definitions set out in the Act and the Code(s):

(a) a natural person includes a juristic person and vice versa;

(b) a word in the singular includes the plural, and vice versa;

(2) Unless the context indicates a contrary intention, words and expressions defined in this Market Code shall bear the meanings assigned to them throughout this Market Code and cognate expressions bear corresponding meanings;

(a) reference to "days" shall be construed as calendar days unless qualified by the word "business", in which instance a "business day" will be any day other than a Saturday, Sunday or public holiday as gazetted by the government of the Republic of South Africa from time to time. Any reference to "business hours" shall be construed as being the hours starting at 08h00 and ending at 17h00 on any business day;

(b) unless specifically otherwise provided, any number of days prescribed shall be determined by excluding the first and including the last day, or, where the last day falls on a day that is not a business day, the next succeeding business day; and

(c) the words "include" and "including" mean "include without limitation" and "including without limitation". The use of the words "include" and "including" followed by a specific example or examples shall not be construed as limiting the meaning of the general wording preceding it.

(d) the table of contents, and any index and headings in this Market Code, are for ease of reference only and do not form part of the contents of this Market Code and do not and shall not affect its interpretation;

(e) any reference to any legislation, primary or secondary, in this Market Code includes any statutory interpretation, amendment, modification, re-enactment or consolidation of any such legislation and any regulations or court orders made thereunder and any general reference to any legislation includes any regulations or orders made thereunder;

(f) any references to chapters or sections are references to chapters or sections of this Market Code as amended or modified from time to time in accordance

with the provisions of this Market Code;

(g) any reference to another agreement or document, or any deed or other instrument is to be construed as a reference to that other agreement, or document, deed or other instrument as lawfully amended, modified, supplemented, substituted, assigned or novated from time to time;

(h) where any obligation is imposed on any Party pursuant to this Market Code and is expressed to require performance within a specified time limit that obligation shall, where appropriate, continue to be binding and enforceable after that time limit if the Party fails to perform that obligation within that time limit (but without prejudice to all rights and remedies available against that person by reason of that person's failure to perform that obligation within the time limit);

(i) zero is to be treated as a positive, whole number;

(j) capitalised words and phrases, acronyms, abbreviations and subscripts have the meaning given to them in the Definitions;

(k) where a specified number of days is expressed to elapse or expire from or after the giving of a notice or the issue or making available of a document before an action may be taken or by which an action is required to be taken then, unless explicitly stated otherwise, the day on which the notice is given or issued or the document is made available shall not be counted in the reckoning of the period;

(l) a reference to a "person" includes any individual, partnership, firm, company, corporation (statutory or otherwise), joint venture, trust, association, organisation or other entity, whether or not having separate legal personality;

(m) where this Market Code requires data to be published by the Market Operator, it shall be made publicly available (which, for the avoidance of doubt means available to all members of the public and not only to Parties) in a format that readily lends itself to processing by standard computer and analysis tools, through an easily accessible public interface and the terms "publish", "publication" and "published" shall be construed accordingly;

(n) where this Market Code requires the Market Operator to publish information and no timeline is specified for such publication, it shall be required to publish such information as soon as reasonably practicable;

(o) in the event of any conflict between algebraic formulae and English language text, the algebraic formula shall apply, save in the case of manifest error in the algebraic formula;

(p) where no timeframe for performance is specified in respect of any obligation to be performed by a Party, then such obligation shall be performed within a reasonable time;

(q) payments or charges may be either positive or negative in accordance with their calculated value except where otherwise stated; and

(r) where any provision of this Market Code provides that the Market Governance Committee shall determine or approve certain values which are

required for the performance of calculations under this Market Code and which apply for a specific period, and on expiry of such period no replacement values have been determined by the MGC, or the MGC has not communicated such determination to the Market Operator, then the values applicable immediately prior to the expiry of the relevant period shall continue to apply until the MGC has determined or approved new values and this has been communicated to the Market Operator in accordance with this Market Code.

2.4 Objectives

(1) The objectives of this Market Code are:

(a) to facilitate the efficient discharge by the Market Operator of the obligations imposed upon it by its Market Operator Licence;

(b) to facilitate the efficient, economic and coordinated operation, administration and development of the South African Wholesale Electricity Market in a financially secure manner;

(c) to facilitate the participation of electricity undertakings engaged in the generation, supply or sale of electricity in the trading arrangements under the South African Wholesale Electricity Market;

(d) to promote competition in the wholesale electricity market in South Africa;

(e) to provide transparency in the operation of the South African Wholesale Electricity Market;

(f) to ensure no unfair discrimination between Parties;

(g) to promote the short-term and long-term interests of consumers of electricity in South Africa with respect to price, quality, reliability, and security of supply of electricity;

(h) to set out roles, responsibilities, and process for the trading of electrical energy and reserves; to set out the roles, responsibilities and process for the scheduling and dispatch of generation and demand-side resources in meeting the electricity demand; and

(i) to ensure fair and equitable treatment of all Market Participants and Balance Responsible Parties trading across the NIPS.

2.5 Application

(1) This Market Code applies to all Balance Responsible Parties (including Market Participants) that meet the qualifying criteria, as well as Network Operators, System Operators, the Market Operator and the Central Purchasing Agency.

(2) This Market Code provides rules for the trading environment of the South African Wholesale Electricity Market, and is aligned with the South African Grid Code and the South African Distribution Code.

2.6 Publication of this Market Code

(1) The applicable version of this Market Code shall be made publicly available on the Market Operator website.

2.7 Governing law

(1) This Market Code and any disputes arising under, out of, or in relation to this Market Code shall be interpreted, construed and governed in accordance with the laws of South Africa.

2.8 Jurisdiction

(1) Subject to the provisions of this Market Code relating to the Dispute Resolution Process, the Parties hereby submit to the exclusive jurisdiction of the Courts of South Africa and South African Law for all disputes arising under, out of, or in relation to this Market Code.

2.9 Term

(1) This Market Code shall commence on the Commencement Date and shall have an indefinite duration.

2.10 Priority

(1) In the event of any conflict between any Party's obligation pursuant to any Applicable Laws and this Market Code, such conflict shall be resolved according to the following order of priority:

(a) requirements under Applicable Laws; and

(b) this Market Code.

(2) If and for so long as a Party complies with the relevant Applicable Laws, it shall be relieved of its obligations under this Market Code to the extent that and for so long as the performance of such obligations is in conflict with any of the relevant Applicable Laws taking priority over this Market Code.

(3) A Party shall only be relieved of its obligations for so long as and to the extent that resolution of the conflict is not within the reasonable control of the relevant Party.

(4) Until such time as such conflict is resolved through the Modifications Process or otherwise, the applicable obligations under the Legal Requirements shall prevail over the provisions of this Market Code for each Party or Trading Unit in relation to which they are in conflict.

(5) It is not intended that there be any inconsistency or conflict between any provision of any of the sections or appendices of this Market Code. However, in the event of any inconsistency or conflict, such inconsistency or conflict shall be resolved by the MGC.

3 ROLES AND RESPONSIBILITIES

3.1 The Market Operator

(1) The Market Operator is the administrative authority for this Market Code in terms of section 34B of the Act.

(2) The MO shall:

(a) ensure that this Market Code is compiled, implemented and complied with for the benefit of the industry;

(b) develop the Market Code and Rules, including establishing conditions for approval of Market participation in the voluntary Market;

(c) in developing the Market Code and Rules, *inter alia*,

a. ensure a consultative stakeholder process is followed; and

b. obtain expert advice where appropriate;

(d) once developed, submit the Market Code and Rules to NERSA for approval;

(e) apply this Market Code;

(f) appoint a Market Governance Committee (MGC);

(g) establish the Market Code Secretariat to support the effective operation of the MGC, Modifications Subcommittee and DRB;

(h) appoint a Market Surveillance Unit;

(i) fund the administrative activities of the MGC, Modifications Subcommittee, DRB, Market Surveillance Unit and Market Code Secretariat;

(j) provide market platforms as required under this Market Code to enable trade between Market Participants;

(k) register Balance Responsible Parties and conclude Balancing Agreements to facilitate trade;

(l) process applications for market participation under conditions established by the MGC and conclude Market Participation Agreements to facilitate trade;

(m) clear the market(s) and timeously settle clearing accounts to ensure the integrity of the markets;

(n) provide regular reports to the MGC and NERSA regarding the clearing and settlement of the markets;

(o) publish Market Code documentation; and

(p) maintain data for the auditing of the market clearing and settlement functions.

3.2 NERSA

(1) NERSA has regulatory authority over the competitive electricity market, including the SAWEM, in terms of section 3 of the Act. NERSA shall ensure that the Market Operator provides a transparent, non-discriminatory trading platform and provide oversight over the trading platform and the application of this Market Code.

(2) NERSA shall consider and, if satisfied therewith, approve this Market Code, as developed and submitted to it by the Market Operator.

(3) NERSA shall consider and, if satisfied therewith, ratify any Modification Proposals for this Market Code as accepted and submitted to it by the Market Governance Committee.

3.3 The System Operator

(1) The SO shall with respect to this Market Code:

(a) apply this Market Code;

(b) schedule and dispatch generation and Demand-side resources based on the Economic Merit Order provided by the MO whilst maintaining the prescribed system security;

(c) provide regular reports to NERSA regarding the scheduling and dispatch of the NIPS;

(d) maintain data for the auditing of the dispatch function; and

(e) disclose to Market Participants upon request the reasons for Dispatch Instructions.

(2) In the event that generation capacity and Demand-side resources are insufficient to meet the demand, the SO may take mitigating actions that are in line with its licence.

(3) Under Normal Operating Conditions any contractual requirements that restrict Dispatch Instructions from the SO shall apply. Under Emergency Operating Conditions the SO may override these contractual requirements and enforce Dispatch Instructions on all BRPs, provided that the BRP is able to comply with SO Dispatch Instruction within statutory limits, and the SO reports to NERSA regarding such overrides.

(4) The System Operator shall define the constrained scheduling model incorporating network constraints for the purposes of producing a Constrained day-ahead and intra-day schedule. The model shall include:

(a) The definition of Network Zones including geographic and/or network delineation for each Network Zone (to the detail required by BRPs to identify the allocation of Points of Delivery to a Network Zone);

(b) The network load-carrying capability between Network Zones as well as the Interconnectors to the SAPP and the capacity on each Interconnector.

(5) The System Operator shall publish the constrained scheduling model three months prior to the Commencement Date and may review the model at any time thereafter but shall publish a revised model at least two months prior to implementation, to afford BRPs an opportunity to adjust Trading Unit definitions to accommodate changes in the Network Zones.

(6) The System Operator may at any time indicate that imports to or exports from a Network Zone are constrained, thus limiting the application of Balancing Groups (as contemplated in section 13.10 of this Market Code) to Trading Units in that Network Zone for the duration of the constraint.

3.4 Market Participants

(1) Each Market Participant shall:

(a) adhere to Market Code obligations, taking into consideration all prevailing constraints, technical and/or economic, prior to submitting information required under this Market Code;

(b) conclude a Market Participation Agreement with the Market Operator to facilitate trade.

(c) conclude a Balancing Agreement with the Market Operator to facilitate Balance Responsibility.

3.5 Network Operator

(1) A Network Operator must provide metering services as well as be responsible for submitting metering data to the Market Operator in the form and under the timelines required by the Market Operator for all delivery points within its jurisdiction.

(2) The Network Operator must facilitate any Data Queries, Settlement Queries and Disputes to the standards indicated in the South African Grid Code as appropriate.

(3) The Network Operator must take accountability for network losses on their network and purchase the network losses through the SAWEM (either as a direct Market Participant or via another designated Market Participant).

(4) The Network Operator is required to follow any Suspension Order or Termination Order approved by the MGC.

(5) NERSA may appoint a Default Retailer for consumers that are unable to be supplied when a Trader or Retailer is suspended or terminated. The responsibility for the buying of Energy and services for these consumers applies to the Default Retailer. By default the Distribution System Operator shall be the Default Retailer in in its area of jurisdiction unless another Default Retailer is appointed by NERSA.

(a) The Default Retailer shall charge impacted consumers the Wholesale Tariff or other price as directed by NERSA, with a Vesting contract with the CPA at the Wholesale Tariff to cover the affected volumes.

(6) The Network Operator is responsible for the billing of use-of-system charges to Generators and loads in its jurisdiction. The Network Operator must inform the Market Operator should a BRP breach the associated use-of-system agreements.

4 MARKET GOVERNANCE

4.1 Market Governance Committee

(1) The Market Operator shall establish the Market Governance Committee (MGC). Subsequent to its establishment, the Market Operator shall ensure the proper functioning of the MGC.

(2) The MGC shall:

(a) be responsible for Modifications to this Market Code. It shall:

a. constitute the Modifications Subcommittee and review its membership on an annual basis;

b. consider recommendations by the Modifications Subcommittee in respect of Modification Proposals;

c. make decisions in respect of Modification Proposals; and

d. submit approved Modification Proposals to NERSA for approval;

(b) appoint the DRB and review its membership on an annual basis;

(c) monitor and enforce the compliance of Parties to this Market Code, and issue sanctions to Parties to this Market Code

(2) The MGC shall be comprised of a chairperson and not less than three, but not more than eight, other persons appointed by the Market Operator.

(3) The Market Operator shall appoint the members of the MGC after consultation with NERSA. Any changes to the membership of the MGC by the Market Operator shall be after consultation with NERSA.

(4) A member of the MGC must:

(a) be a citizen of South Africa, who is ordinarily resident in South Africa;

(b) have suitable qualifications and experience in economics, law, engineering, industry or public affairs;

(c) not be an office-bearer of any party, movement, organisation or body of a political nature;

(d) not be a minor;

(e) not be an unrehabilitated insolvent or a delinquent;

(f) not be subject to an order of a competent court holding the person to be mentally unfit or disordered;

(g) not have been convicted in the Republic or elsewhere of an offence committed after the Constitution of the Republic of South Africa, 1996, took effect, and sentenced to imprisonment without the option of a fine or fined more than the prescribed amount for theft, fraud, forgery, perjury or an

offence involving fraud, misrepresentation or dishonesty; and

(h) not have been removed from an office of trust on the grounds of misconduct involving dishonesty.

(5) All members of the MGC serve for a term of five years. The Market Operator may re-appoint a member at the expiry of their term.

(6) The Market Operator may only remove a member of the MGC if that person becomes subject to any of the disqualifications under 4.1.(5), or for serious misconduct, permanent incapacity or engaging in any activity that may undermine the integrity of the MGC.

(7) Any member may leave the MGC voluntarily at any time. In this case, the Market Operator shall appoint a new member after consultation with NERSA.

(8) Remuneration of the members of the MGC shall be determined by the Market Operator and paid by the Market Operator.

(9) The MGC shall have a meeting at least once every three months, as scheduled by the Market Code Secretariat.

(10) The Market Code Secretariat shall, at the start of each Year, establish a calendar of scheduled meetings of the MGC for the Year, and where required establish additional meetings and publish such date at least two weeks in advance.

(11) Any person may attend meetings of the MGC in an observatory capacity where that person has informed the Market Code Secretariat in advance and the Market Code Secretariat has confirmed that person's attendance. The MGC chairperson may exclude observers where confidential information is being considered.

(12) The costs of the meetings and all other costs of the MGC shall be included as costs and expenses of the Market Operator.

4.2 Modifications Subcommittee

(1) The MGC shall establish the Modifications Subcommittee as a stakeholder representative committee representing Market Participants with representation from the Market Operator and System Operator. Subsequent to its establishment, the MGC shall ensure the proper functioning of the Modifications Subcommittee.

(2) The Modifications Subcommittee is established to:

(a) ensure a consultative stakeholder process is followed in the review and modification of this Market Code;

(b) review and make recommendations to the MGC regarding proposals to amend or modify this Market Code; and

(c) review and make recommendations to the MGC regarding updating of this Market Code to facilitate and align with the changing ESI in South Africa.

(3) The functions of the Modifications Subcommittee are to facilitate the Modifications Process by:

(a) co-ordinating the resources of Parties to facilitate the development and processing of a Modification Proposal;

(b) assessing Modification Proposals and the impact of any Modification Proposals for the Market having regard to the objectives of the Market Code;

(c) further developing Modification Proposals which are not rejected as being spurious;

(d) working up the detail of Modification Proposals;

(e) consulting on Modification Proposals as required; and

(f) compiling reports and making recommendations on Modification Proposals to the MGC.

(4) The members of the Modifications Subcommittee shall be appointed by the MGC with no more than 20 members and shall reflect the evolving industry. The Market Operator and System Operator shall also have representation on the Modifications Subcommittee.

(5) A member appointed to represent a particular type of Party shall represent the interests of the type of Party it is elected or appointed to represent.

(6) The Modifications Subcommittee shall have a chairperson and vice-chairperson who shall be elected by the voting members of the Modifications Subcommittee from among its members. In the event of a tie for the election of the chairperson or vice-chairperson, a subsequent ballot or ballots shall take place until a chairperson and vice-chairperson are elected.

(7) The term of appointment for the chairperson and the vice-chairperson shall be two years.

(8) The chairperson will chair meetings of the Modifications Subcommittee and seek to ensure the efficient organisation and conduct of the functions of the Modifications Subcommittee pursuant to this Market Code.

(9) Save as expressly provided otherwise, only members appointed or elected to shall be entitled to vote at any meeting and those members shall have one vote each.

(10) The Modifications Subcommittee shall have a meeting at least once every three months.

(11) The Market Code Secretariat shall, at the start of each Year, establish a calendar of scheduled meetings of the Modifications Subcommittee for the Year, and where required establish additional meetings and publish such date at least two weeks in advance.

(12) Any person may attend meetings of the Modifications Subcommittee in an observatory capacity where that person has informed the Market Code

Secretariat in advance and the Market Code Secretariat has confirmed that person's attendance.

(13) The costs of the meetings and all other costs of the Modifications Subcommittee shall be included as costs and expenses of the Market Operator for the purposes of this Market Code.

(14) Members of the Modifications Subcommittee shall not be entitled to remuneration or expenses.

4.3 Market Code modification process

(1) Modifications shall be processed in accordance with this section of this Market Code.

(2) The objective of the Modifications Subcommittee is to process Modification Proposals and make recommendations in respect thereof to the MGC with a view to better facilitating the achievement by this Market Code of its objectives.

(3) The Modifications Subcommittee shall be responsible for the effective facilitation of the Modifications Process, as supported by the Market Code Secretariat.

(4) Modification Proposals to this Market Code can be proposed by any person including the Market Operator and NERSA. Any Modification Proposal shall be submitted to the Market Code Secretariat.

(5) Any person raising a Modification Proposal shall ensure that their proposal is clear and substantiated with appropriate detail, including how it furthers the objectives of this Market Code, to enable it to be considered by the Modifications Subcommittee and MGC.

(6) Each Modification Proposal shall include draft text of the relevant provision of this Market Code as amended by the Modification Proposal.

4.3.1 Modification Recommendation Report timeline

(1) Save as expressly provided otherwise, the Modifications Subcommittee shall produce a Modification Recommendation Report in respect of each Modification Proposal.

(2) The Modification Recommendation Report shall be submitted to the MGC within six months of receipt of a Modification Proposal, unless such period is extended with the consent of the MGC.

4.3.2 Procedure for Developing Modification Proposals

(1) The Market Code Secretariat shall, within five Business Days of the receipt of a Modification Proposal, submit the Modification Proposal to both the Modifications Subcommittee and MGC, and publish a notice containing the relevant Modification Proposal.

(2) A Modification Proposal shall be considered by the Modifications Subcommittee at the next meeting provided that the proposal is published no more than seven Business Days prior to the date of such meeting.

(3) The person making a Modification Proposal or its representative (neither of whom need to be Modifications Subcommittee members) shall be entitled to present the Modification Proposal at the meeting at which it is to be initially considered.

(4) At the meeting where it first considers a Modification Proposal, the Modifications Subcommittee shall first determine whether the Modification Proposal is spurious as per the definition in section 4.3.3.

(5) The Modifications Subcommittee may decide to modify or combine Modification Proposals, in consultation with the authors. These modified or combined Modification Proposals shall reference the original Modification Proposals.

(6) The Modifications Subcommittee may direct the Market Code Secretariat to specifically invite appropriate persons, such as Market Participants, the Market Operator, the System Operator, industry groups, customer representatives or other persons to express their opinions on any Modification Proposal, including providing an impact analysis.

(7) Parties invited to assist the Modifications Subcommittee will make available reasonable resources to respond to such request by the Modifications Subcommittee at no cost.

(8) The Modifications Subcommittee may request its members to consult with their constituents.

(9) In finalising the detail of a recommendation on a Modification Proposal, the Modifications Subcommittee shall have due regard to comments and submissions received during the consultation process.

(10) The Modifications Subcommittee may request the Market Code Secretariat to contract consultants, experts or advisers to advise the Modifications Subcommittee regarding any Modification Proposal, including the preparation of an impact analysis report. Any costs incurred by Modifications Subcommittee in connection with this shall form part of the costs of the Market Code Secretariat.

4.3.3 Spurious Proposals

(1) A Modification Proposal shall be deemed to be spurious if, *inter alia*, it is clearly contrary to the objectives of this Market Code or does not further the objectives. If the Modifications Subcommittee reasonably considers a Modification Proposal to be spurious, it shall, with written consent of the MGC, reject such Modification Proposal.

(2) Any decision of the Modifications Subcommittee to reject a Modification Proposal must set out the reasons for the decision in writing and provide them to the person making the Modification Proposal and to the MGC.

(3) The MGC reserves the right to reject the decision of the Modifications Subcommittee that a proposal is spurious and in such event, the relevant Modification Proposal must be processed by the Modifications Subcommittee in accordance with this Market Code.

4.3.4 Urgent Modifications

(1) Any person submitting a Modification Proposal may mark it as “Urgent”. A person submitting a Modification Proposal marked “Urgent” shall submit the Modification Proposal to this Market Code Secretariat.

(2) The Market Code Secretariat shall within two Business Days of the receipt of a Modification Proposal which is marked “Urgent”, consult the MGC chairperson who shall determine whether or not it shall be treated as Urgent.

(3) A Modification Proposal shall be determined to be Urgent by the MGC chairperson where, if not made, it can reasonably be anticipated that the event or circumstance with which the Modification Proposal is concerned would imminently:

(a) threaten or prejudice safety, security or reliability of supply of electricity; or

(b) unduly interfere with, disrupt or threaten the operation of the Market; or

(c) result in failure to correct an obviously material error; or

(d) lead to irreconcilable inconsistency in this Market Code.

(4) If the MGC chairperson determines that a Modification Proposal is Urgent, the Modifications Subcommittee shall convene an Emergency Meeting.

(5) If the Secretariat or the Modifications Subcommittee considers that any of the circumstances apply in respect of any Modification Proposal that has not been marked “Urgent” by the person submitting the Modification Proposal, the Market Code Secretariat shall promptly submit the Modification Proposal to the MGC for consideration.

(6) In the event that a Modification Proposal is deemed to be Urgent, the Modifications Subcommittee shall propose the procedure and timetable to be followed in making a recommendation in respect of the Urgent Modification which may fast-track the normal processes provided for in this Market Code. The MGC shall have the right to veto or direct amendments to the procedure and timetable proposed by the Modifications Subcommittee within two business days of any such proposal by the Modifications Subcommittee.

4.3.5 Alternative Proposals

(1) If any person does not agree with a Modification Proposal to this Market Code, it may propose an alternative Modification Proposal, which if received in sufficient time to be considered within the Modifications Subcommittee’s plans for progressing the initial original Modification Proposal may be considered in conjunction with, or in substitution for, the initial Modification Proposal.

4.3.6 Final Modification Recommendation & Report

(1) The Modifications Subcommittee shall make the recommendation for the Final Modification Recommendation by majority vote of voting members of the Modifications Subcommittee. The Modifications Subcommittee shall send the Final Modification Recommendation as part of the Modification

Recommendation Report in relation to the Modification Proposal to the MGC as soon as practicable after the decision.

(2) The Modifications Subcommittee shall recommend to the MGC the adoption of such Modification Proposals as it concludes will better facilitate achievement of the objectives of this Market Code.

(3) The Final Modification Recommendation of the Modifications Subcommittee shall be part of the Modification Recommendation Report which shall include:

(a) the recommendation of the Modifications Subcommittee on whether or not the Modification Proposal should be adopted;

(b) the reasons for such recommendation;

(c) where the Modifications Subcommittee is in favour of the proposal, a draft of the text of the proposed Modification;

(d) the original draft of the Modification Proposal;

(e) any dissenting opinions of members of the Modifications Subcommittee;

(f) a copy of the Market Operator's opinion and System Operator's opinion on the Modification Proposal, as well as the opinion from impacted Network Operators;

(g) the views of any respondents submitted during the consultation process (including any views of persons invited to give opinions or consultants, experts or advisors contracted to provide advice);

(h) an assessment of the impact of the Modification Proposal including in relation to this Market Code, any Legal Requirements, any other codes relating to the operation of the Market (including the Grid Codes and the Metering Codes) or any other relevant matter;

(i) an assessment, where the Modifications Subcommittee deems appropriate, of any alternative Modification Proposal proposed by any person;

(j) a draft of the specific changes that it is proposed would be necessary to make to this Market Code if the Modification Proposal would be accepted;

(k) proposed timescales for implementation; and

(l) a cost/resource requirements assessment.

4.3.7 No recommendation or decision by the Modifications Subcommittee

(1) In the event that the Modifications Subcommittee is unable to make a recommendation in respect of a Modification Proposal within the timeframes, the matter shall be referred to the MGC. This referral shall detail the Modification Proposal and any supporting information. In such event, the MGC shall either make a binding decision, or shall extend the applicable time-limit for the Modifications Subcommittee.

(2) In the event that the Modifications Subcommittee does not issue a recommendation in respect of a Modification Proposal within the timeframes and does not refer the matter to the MGC, the MGC shall either make a binding decision, or shall extend the applicable time-limit for the Modifications Subcommittee.

4.3.8 Decision of the MGC

(1) Following receipt of a Modification Recommendation Report created by the Modifications Subcommittee, the MGC shall decide whether to:

(a) accept the Final Modification Recommendation of the Modifications Subcommittee;

(b) reject the Final Modification Recommendation of the Modifications Subcommittee; or

(c) direct the Modifications Subcommittee that further work is required in respect of the Modification Proposal detailed in the Final Modification Recommendation, extending the eight-month timeline if necessary.

(2) The MGC shall make its decision in relation to a Modification Proposal within three months following receipt of the Final Modification Recommendation.

(3) If approved by the MGC, the Modification must be submitted by the MGC to NERSA for approval. NERSA shall make its decision on the approval of the Modification Proposal within three months following receipt of the Proposal from the MGC.

(4) If approved by NERSA the Modification shall become effective two business days after the date of the decision of NERSA or such other date as may be specified by the MGC (or NERSA if specifying a different date) in their decision.

(5) Once any Modification has been made, the MO will be required to implement the change, including making the necessary changes to systems and processes with effect from the date provided. The MO shall publish the decision of the MGC promptly on its receipt, on its website.

4.3.9 Information about the Modifications Process

(1) The Market Code Secretariat shall publish, on a monthly basis, information relating to the Modifications Process and the status of each Modification Proposal, subject to the confidentiality provisions.

(2) The MO shall provide for a website location or other similar means of publication to be available to the Market Code Secretariat and the Modifications Subcommittee for the Modifications Process.

(3) The Market Code Secretariat shall publish notices submitted to it by the Modifications Subcommittee as soon as practicable after receipt of such notices and in any event within two business days after receipt of such notices.

(4) The Modification Subcommittee shall submit a quarterly report to the MGC including the progress and status of Modification Proposals. These reports shall be published by the MO as soon as reasonably practicable after receipt.

(5) The Market Code Secretariat shall publish the determination of the MGC in relation to a Modification Proposal within two business days after such decision has been made and submitted to the MO and, where a Modification Proposal has been accepted, such publication shall include the text of the Modification. NERSA's decision regarding the Modification Proposal shall also be published once received.

4.3.10 Intellectual Property Issues Associated With Modification Proposals

(1) Each Party submitting a Modification Proposal shall be deemed to have irrevocably licensed any Intellectual Property Rights or other rights to, and to have waived any moral rights in, the content, form or other aspect of the Modification Proposal in favour of the Parties to this Market Code and such licence and waiver shall be a precondition to the valid submission of a Modification Proposal.

(2) Each person who is not a Party and submits a Modification Proposal shall be required to irrevocably licence any Intellectual Property Rights or other rights to and waive any moral rights in the content, form or other aspect of the Modification Proposal in favour of the Parties to this Market Code and such licence and waiver shall be a precondition to the acceptance of a Modification Proposal.

(3) Licences granted under (1) and (2) above are not only irrevocable, but are also granted:
   (a) without entitlement to any compensation or royalty;
   (b) for the life of the Intellectual Property and anytime thereafter;
   (c) on a non-exclusive basis with the right to transfer and sub-license at the discretion of the licensee;
   (d) with the right to modify, adapt, reproduce and commercialise the Intellectual Property without limitation anywhere in the world; and
   (e) effective immediately upon submission of the Modification Proposal.

(4) Any person submitting a Modification Proposal must ensure that all Parties to this Market Code are entitled to make full and unrestricted use thereof and suitable warranties shall be submitted to the Market Code Secretariat to cover this. Should these warranties be breached the person submitting the Modification Proposal must secure a suitable replacement at no cost to the other Parties to this Market Code.

(5) A form for Modification Proposals shall be made available on the website provided for the Modifications Subcommittee and such form shall include a licence of Intellectual Property Rights, and waiver of moral rights in respect of the content, format or other aspects of the Modification Proposal.

4.3.11 No Retrospective Effect

(1) For the avoidance of doubt, a Modification shall have effect as from the date specified by the MGC, which shall, subject to section 4.3.11(2), not be earlier than the date on which the Modification is approved by NERSA.

(2) A Modification approved as "urgent" could have retrospective effect if approved by NERSA, and provided that such Modification does not interfere with vested rights, or impose new obligations that were unknown at the effective date, or have an adverse effect on any person.

4.4 Dispute Resolution Board

(1) The MGC shall establish the Dispute Resolution Board (DRB). Subsequent to its establishment, the MGC shall ensure the proper functioning of the DRB.

(2) The DRB is established to:

(a) facilitate a simple, quick and inexpensive Dispute Resolution Process that encourages resolution of disputes without formal legal representation or reliance on legal procedures;

(b) maintain a Dispute Resolution Process that must:

i. be simple, quick and inexpensive;

ii. preserve or enhance the relationship between the Disputing Parties;

iii. resolve and allow for the continuing and proper operation of this Market Code and the Market having regard to its objectives;

iv. resolve Disputes on an equitable basis in accordance with the provisions of this Market Code having regard to the objectives of this Market Code;

v. take account of the skills and knowledge that are required for the relevant procedure; and

vi. encourage resolution of Disputes without formal legal representation or reliance on legal procedures;

(c) resolve disputes on an equitable basis in accordance with the provisions of the Market Code and the Dispute Resolution Process.

(3) The members of the DRB shall be appointed by the MGC with at least one member but no more than five members. Members of the MGC, or Market Operator generally, are ineligible to be members of the DRB.

(3) A member of the DRB must:

(a) be a citizen of South Africa, who is ordinarily resident in South Africa;

(b) have suitable qualifications and experience in economics, law, engineering, industry or public affairs;

(c) not be an office-bearer of any party, movement, organisation or body of a political nature;

(d) not be a minor;

(e) not be an unrehabilitated insolvent or a delinquent;

(f) not be subject to an order of a competent court holding the person to be mentally unfit or disordered;

(g) not have been convicted in the Republic or elsewhere of an offence committed after the Constitution of the Republic of South Africa, 1996, took effect, and sentenced to imprisonment without the option of a fine or fined more than the prescribed amount for theft, fraud, forgery, perjury or an offence involving fraud, misrepresentation or dishonesty; and

(h) not have been removed from an office of trust on the grounds of misconduct involving dishonesty.

(4) The MGC shall appoint a chairperson of the DRB who shall be an independent retired judge, and at least two other members of which one should have experience in engineering and the other experience in accounting.

(5) The term of appointment for members of the DRB, including the chairperson, shall be three years.

(6) The chairperson will chair meetings of the DRB and seek to ensure the efficient organisation and conduct of the functions of the DRB pursuant to this Market Code.

4.5 Market Surveillance Unit

(1) A Market Surveillance Unit (MSU) shall be established under the MO. The MSU shall monitor and survey the markets governed by this Market Code with the main purpose of detecting incorrect behaviour of Market Participants leading to market abuse.

(2) The MSU shall also monitor that the MO is complying with this Market Code and the Market Conduct Rules and its timelines.

(3) It is the responsibility of each Market Participant to ensure compliance with the Market Conduct Rules by all relevant parts of its organisation. Each Market Participant shall ensure that any person involved in Trading on its behalf, including members of management and other persons who make decisions in relation to Products through the exercise of their employment, profession or other duties towards the Market Participant, are subject to restrictions and obligations that enable the Party to fully and efficiently comply with these Market Conduct Rules.

(4) The MSU shall have the authority to represent and act on behalf of MO in all matters regulated by the Market Conduct Rules, and references to MO herein shall be construed accordingly. This authority of the MSU includes authority to make requests for information.

(5) Market Participants and Balance Responsible Parties are obliged to provide all such information as MSU considers relevant either in the context of the performance of its monitoring role or in the context of any investigation of any suspected breach of the Market Conduct Rules as soon as possible following a written request from MSU. Market Participants and Balance Responsible Parties must make all necessary arrangements with third parties in order to ensure that they are able to comply with their obligations under this section.

(6) Information received must only be used for the purpose of surveillance of the Market Conduct Rules, including the investigation of suspected breaches.

(7) All MSU employees' employment contracts shall include confidentiality clauses to ensure that this information is not unduly shared.

5 DISPUTE MANAGEMENT

(1) A Notice of Dispute may be served by any Party on any number of Parties.

(2) Subject to the rules concerning the commencement of certain Settlement Disputes, a Dispute is deemed to exist when one Party notifies another Party or Parties in writing of the Dispute by way of a Notice of Dispute within ten business days of that Party having become aware of the Disputed Event.

(3) The Notice of Dispute shall briefly set out the nature of the Dispute (including the Disputed Event(s)) and the issues involved. A copy of the Notice of Dispute shall be sent to the Market Operator, the MGC and DRB.

(4) The provisions set out in this Dispute Resolution Process shall not prejudice or restrict any Party's entitlement to seek interim or interlocutory relief directly from the appropriate Court or Courts with jurisdiction.

(5) The obligations of the Parties under this Market Code (including payment of any invoice amounts by the Invoice Due Date) shall not be affected by reason of the existence of a Dispute, save as provided for in any determination of the Dispute Resolution Board or a Court.

(6) The Dispute Resolution Process provided for in this Market Code constitutes a mechanism and procedure in terms of section 42(2) of the Intergovernmental Relations Framework Act, 2005.

(7) The Market Code Secretariat shall maintain a record of Disputes, and report annually in respect thereof to the MGC.

5.1.1 Settlement Disputes

(1) In the event that the MO does not resolve a Settlement Query within the timeframes, or does not resolve a Data Query within the timeframes, the Settlement Query or Data Query, as appropriate, shall automatically become a Settlement Dispute and the Notice of Dispute shall be deemed to have been issued on the date on which the MO was required to issue its determination in respect of the Settlement Query or Data Query.

(2) In the event that a Party is dissatisfied with the MO's determination in respect of a Settlement Query or Data Query, the Party that raised the Settlement Query or Data Query may raise a Dispute by issuing a Notice of Dispute to the MO within ten business days of receipt of the MO's determination.

5.1.2 Referral to the DRB

(1) Where a Notice of Dispute has been served, a representative of each of the Disputing Parties, each with authority to resolve the Dispute, must meet within ten business days of the date of the Notice of Dispute to seek in good faith to resolve the Dispute. The Disputing Parties shall negotiate in good faith and attempt to agree a resolution. The Parties may agree to refer a dispute to mediation by NERSA prior to referral to the DRB in accordance with the provisions of the ERA. The Parties may agree to refer a dispute for arbitration by NERSA in accordance with the provisions of the ERA.

(2) If the Disputing Parties are unable to reach agreement within a further period of

ten business days of meeting, the Dispute may within a further period of at least five business days but not longer than ten business days be referred by any Disputing Party to the DRB by way of notice in writing to the other Disputing Party or Parties ("**Referral Notice**") unless expressly provided otherwise in this Market Code. The Disputing Party shall immediately send a copy of the Referral Notice to all affected Parties, the DRB, the MGC and the Market Operator.

(3) A Dispute is deemed to be referred to the DRB as of the date of the receipt of the Referral Notice by the DRB.

(4) In the event of a Dispute being referred to the DRB, Disputing Parties and the DRB shall follow the Dispute Resolution Process, unless the Disputing Parties agree otherwise, and which the DRB is entitled to amend from time to time.

(5) Disputing Parties shall continue to perform all of their obligations and functions as required by this Market Code including, for the avoidance of doubt, fulfilling any payment obligations as payment falls due.

5.1.3 Obtaining the DRB's Decision

(1) The DRB shall give its decision within (i) thirty business days after the hearing or all relevant documents have been submitted as required by the Dispute Resolution Process where there are no more than two Disputing Parties; (ii) forty business days where there are more than two Disputing Parties; or (iii) such other period as may be proposed by the DRB and accepted by the Disputing Parties. Its decision shall be in writing, providing reasons. The decision shall be binding on all Disputing Parties, who shall promptly give effect to it unless a notice of dissatisfaction is issued under section 5.1.3 (6).

(2) The DRB may make an order as to costs.

(3) If any Disputing Party is dissatisfied with the DRB's decision, then that Party may, within ten business days after receiving the decision refer the Dispute to arbitration by notice within ten business days after the date of the DRB's decision as per section 5.1.4.

(4) If the DRB has given its decision on a Dispute to the Disputing Parties and the Dispute has not been referred to arbitration within ten business days after the date of the DRB's decision, then the decision shall be final and binding upon all Disputing Parties.

(5) In the event that:

(a) no Disputing Party has referred the Dispute to arbitration; and

(b) the DRB's related decision (if any) has become final and binding; and

(c) a Disputing Party fails to comply with this decision,

then any other Disputing Party may take such action as it deems necessary, including the commencement of Court proceedings, to enforce the relevant DRB decision.

(6) The Disputing Parties shall continue to comply with this Market Code in all respects pending resolution of the Dispute.

5.1.4 Arbitration

(1) Where the Dispute has been referred to arbitration, an arbitration board is established consisting of one arbitrator who is appointed in accordance with the Arbitration Foundation of South Africa (“AFSA”) rules.

(2) The place of any arbitration shall be Johannesburg, Republic of South Africa.

(3) The Disputing Parties, together with the arbitrator, will agree prior to commencement of the arbitration on the arbitrator's remuneration and when and how it shall be paid in the interim. The Disputing Parties shall, pending the final determination of the arbitrator as to which of the Disputing Parties shall ultimately be liable for the costs of the arbitration, fund the costs (such as the costs of any venue, arbitrator's remuneration, recording, transcription and other costs and expenses ancillary to the arbitration) which need to be paid in the interim, in equal proportions. Within 10 (ten) business days of the making by the arbitrator of a final determination as to which Party shall bear the costs of the arbitration, the Disputing Party against which such determination has been made shall reimburse to the other Disputing Parties the costs borne by such Disputing Party in the interim together with interest thereon, if the arbitrator so awards.

(4) The Disputing Parties shall ensure that any arbitration shall be held as expeditiously as possible after such arbitration is demanded.

(5) There shall be a right of appeal against any arbitral award provided that:

(a) the appeal is noted within ten business days of the arbitral award; and

(b) the appellant delivers the record to the respondent within ten business days of the record becoming available to the appellant. The relevant provisions of this arbitration clause shall apply mutatis mutandis in regard to the appeal (including any cross appeal).

(6) Neither Disputing Party is precluded from making an application to a court of competent jurisdiction for:

(a) interim relief on an urgent basis pending the decision of the arbitration board; or

(b) an order enforcing any award made by the arbitration board.

6 MARKET PARTICIPATION AND BALANCE RESPONSIBLE PARTIES

6.1 Market Participants and Balance Responsible parties

(1) Market Participants and Balance Responsible Parties are both treated as Parties to this Market Code, and the same rules apply for admitting them.

6.2 Admission

(1) A person may only become a Party to this Market Code in accordance with the terms of this Market Code.

(2) In order to become a Party, a person (the “Applicant”) must complete and sign an application form which shall be in the form provided by the MO and subsequently send to the MO. The application form specifies all conditions which the Applicant must meet to become a Party**.**

(3) The MO may charge a non-discriminatory Accession Fee to all Applicants which shall be non-refundable.

(4) Where the MO receives an application from an Applicant, it must within ten business days of receiving the application, send a notice to the Applicant informing the Applicant of any further information or clarification which is required in relation to the application or where the application is incomplete. The MO shall provide details of what clarification is required or where the application is incomplete.

(5) If the MO does not receive the clarification or the additional information required within twenty business days of the Applicant having been informed by the MO of the need for such clarification, the Applicant shall be deemed to have withdrawn the application. An Applicant may, in writing, request additional time to provide any clarification or additional information and the MO shall not unreasonably withhold consent to any such request.

(6) On receipt of a completed application form and any clarification or additional information requested by the MO and provided that the Applicant fulfils the conditions for accession specified in the application form, the MO shall within ten business days of final receipt of all required information provide the Applicant with a Market Participation Agreement and/or Balancing Agreement as the case may be.

(7) The Applicant must submit an executed Market Participation Agreement and/or Balancing Agreement within ten business days of receipt. An Applicant may, in writing, request additional time to submit an executed Market Participation and/or Balancing Agreement and the MO shall not unreasonably withhold consent to any such request, provided that the date of receipt of the executed Market Participation or Balancing Agreement shall be at least three business days earlier than the effective date specified in the Agreement.

(8) Following receipt by the MO of an executed Market Participation and/or Balancing Agreement, the Applicant shall become a Party on the date specified in the Agreement unless the Market Operator and the Applicant agree on a different date separately in writing.

(9) The MO shall publish on its website the fact and date of the accession of each new Party to this Market Code, within seven business days of accession by the Party concerned.

(10) An Applicant shall be allowed to participate in the SAWEM during the testing and commissioning period subject to agreement with the MO. Similarly an existing Market Participant may offer energy from additional capacity during the testing and commissioning period subject to agreement with the MO.

(11) Prior to the effective date specified in the Market Participation Agreement, the Applicant (to become a Market Participant) shall establish a Collateral Reserve Account or Trading Clearing Account as required, to provide Credit Cover as nominated by the Applicant in the application, and shall notify the MO in writing once it has done so.

6.3 Default

(1) The following sections on default, suspension and termination shall apply in respect of Default by any Party other than the MO.

(2) A Party shall be in Default where it is in material breach of any provision of this Market Code or any other relevant Code, Licence or Market Participation or Balancing Agreement.

(3) A Party shall notify the MO as soon as reasonably practicable upon becoming aware of any circumstance that will give rise to a Default, and upon the occurrence of a Default.

6.3.1 Default Notice

(1) On becoming aware of a Default in relation to a Party, the MO shall issue to the Defaulting Party a Default Notice specifying the Default.

(2) The MO shall specify in a Default Notice:

A) the nature of the Default;

B) if the Default is capable of remedy, the time from the date of the Default Notice within which the Defaulting Party is required to remedy the Default which shall be set to at least two Business Days; and

C) any other action which the MO may reasonably require the Defaulting Party to take in respect of the Default.

(3) The Defaulting Party must comply with the Default Notice.

6.4 Suspension

(1) In the event that:

(A) a Credit Call is made and a Market Participant's Credit Cover Provider fails to meet such demand within the agreed timeframe; or

(B) a Market Participant fails at any time to provide or retain the Required Credit Cover as specified under this Market Code and in accordance with the

timeframe as provided;

(2) then, notwithstanding, the MO shall after at least one business day of the issue of the Default Notice to the Defaulting Party in respect of such Default, issue a Suspension Order in respect of all of the relevant Market Participant's Trading Units.

(3) A Suspension Order shall be expressed to take effect no earlier than the date of the expiry of the DSU Suspension Delay Period in respect of any DSU included in the Suspension Order and no earlier than the expiry of the Generator Suspension Delay Period in respect of any Generator Unit included in the Suspension Order. In respect of each DSU, the Suspension Order shall not take effect unless the MGC has directed that all demand represented by that DSU shall be met by a Default Retailer. During the period before the Suspension Order comes into effect in respect of a particular Trading Unit, the MGC may instruct the MO to issue a notice or notices amending or lifting the Suspension Order in respect of that Trading Unit or any or all of the Trading Units concerned.

(4) A Suspension Order shall not be issued solely by reason of the failure of the Market Participant to have its Credit Cover in place during the period permitted for replenishment of Credit Cover or during the ten business days permitted to acquire a new Credit Cover Provider.

(5) The MO may, with the prior written approval of the MGC, and following one business day from the issuing of a Default Notice, issue a Suspension Order in respect of all or any of a Party's Trading Units where:

(A) it becomes unlawful for a Party to comply with any of its obligations under this Market Code;

(B) it becomes unlawful for a Party's Credit Cover Provider to comply with any of its Credit Cover obligations;

(C) a Legal Requirement necessary to enable a Party or its Credit Cover Provider to fulfil its obligations and functions under this Market Code is amended or revoked in whole or in part so as to prevent a Party or its Credit Cover Provider from fulfilling its obligations and functions under this Market Code;

(D) a Party or its Credit Cover Provider suspends or ceases to carry on its business, or any part of its business which is relevant to its activities under this Market Code;

(E) a Party's Credit Cover Provider ceases to be eligible for the purposes of this Market Code to be able to provide the Credit Cover and the Party has not acquired a new Credit Cover Provider within ten business days;

(F) a Party enters into or takes any action to enter into an arrangement or composition with its creditors (except in the case of a solvent and bona fide reconstruction or amalgamation);

(G) a Party's Credit Cover Provider enters into or takes any action to enter into an arrangement or composition with its creditors (except in the case of a solvent and bona fide reconstruction or amalgamation);

(H) a receiver, manager, receiver and manager, administrative receiver, examiner or administrator is appointed in respect of a Party or its Credit Cover Provider or any of their respective assets, or a petition is presented for the appointment of an examiner or administrator, or a petition is presented or an order is made or a resolution is passed for the dissolution of, winding up of or appointment of a liquidator to a Party or its Credit Cover Provider, or a liquidator, trustee in bankruptcy or other similar person is appointed in respect of a Party or its Credit Cover Provider, or any steps are taken to do any of the foregoing or any event analogous to any of the foregoing happens in any jurisdiction;

(I) a Party or its Credit Cover Provider is dissolved or struck off;

(J) a Party or its Credit Cover Provider is unable to pay its debts for the purposes of insolvency per the Insolvency Act 24 of 1936;

(K) a Party which is required to be licensed or registered in respect of any or all of its roles under this Market Code has its Licence or registration revoked in whole or in part or amended, so as to prevent the Party from fulfilling its obligations and functions under this Market Code;

(L) a Party has committed three Defaults within a period of twenty business days; or

(M) a Party has committed a Default and has failed to comply with the Default Notice within the timeframe stipulated therein.

(6) Where the Market Operator issues a Suspension Order, the Market Operator shall at the same time send a copy of the Suspension Order to the MGC, NERSA, the System Operator and the relevant Distribution System Operators, and shall publish the Suspension Order.

6.4.1 Effect of Suspension Order

(1) Where the Market Operator issues a Suspension Order, the Suspension Order shall specify the Trading Units to which the Suspension Order shall apply, the date and time from which the suspension will take effect and the terms of the suspension.

(2) The Supplier Suspension Delay Period and the Generator Suspension Delay Period shall be determined from time to time by the MGC and notified to the Market Operator. A determination by the MGC in relation to the duration of the Generator Suspension Delay Period or the Supplier Suspension Delay Period, which amends an existing determination in this regard, shall not have effect until the expiry of a period of ten business days following the amending determination, or such longer period as may be specified by the MGC, and, in any event, shall not affect any then current Generator Suspension Delay Period or Generator Suspension Delay Period.

(3) On receipt of any determination from the MGC, the MO shall publish on its website such determination indicating the date from which it shall take effect.

(4) When a Suspension Order takes effect, the Trading Units to which the Suspension Order applies shall be suspended from participation in the Market until such time as the MO publishes a notice stating that:

(A) the Suspension Order has either been lifted or will be lifted (specifying the date and time); or

(B) the participation of the relevant Party in the Market has been Terminated, or the relevant Trading Units have been Deregistered, in each case in accordance with this Market Code.

(5) The participation of Suspended Units in the SAWEM may only resume in accordance with such conditions as specified in the Suspension Order.

(6) A Suspension Order shall not affect the continuing obligation of any Party whose Trading Units have been suspended to maintain the Required Credit Cover in respect of all of its Trading Units.

(7) A Suspension Order may suspend or restrict any or all of a Party's Trading Units. The Market Operator shall, while a Suspension Order is in place, be entitled to do any act, matter or thing to give effect to the Suspension Order including, without limitation:

(A) rejecting any Offer Data submitted by the relevant Party;

(B) making a Credit Call;

(C) setting-off any amount owed by the relevant Market Participant against the payment of any amounts otherwise due to that Market Participant under this Market Code; or

(D) requesting NERSA and SO or any other Party to take such measures as the MO, acting reasonably, decides are appropriate to give effect to the Suspension Order.

(8) The MO shall remove the Suspension Order if the relevant Party remedies the matter or matters giving rise to the Suspension Order, or the circumstances giving rise to the Suspension Order no longer apply.

(9) Where any Suspension Order is removed by the MO, the MO shall notify this to the MGC, NERSA, the SO and the relevant Distributors where appropriate and shall publish a notice that the Suspension Order has been lifted.

(10) The Market Participant that has registered the Trading Units to which a Suspension Order applies must comply with the Suspension Order.

6.5 Terminating and deregistration

(1) The MO may with the prior written approval of the MGC issue a Termination Order where a Party is in breach of a Suspension Order or has not remedied a Default or taken such action as required by the MO within the timeframe specified in the Suspension Order. A Termination Order may direct the Deregistration of any or all of a Party's Trading Units or the Termination of a Party as a party to this Market Code. Termination of a Party as a party to this Market Code shall have the effect of Deregistration of all of the Party's Trading Units.

(2) The MO shall specify in each Termination Order the Credit Cover which the relevant Party is required, to maintain in respect of any Trading Units being Deregistered pursuant to the Termination Order.

6.5.1 Effect of Termination Order

(1) Where the MO issues a Termination Order:

(a) the Termination Order shall specify the time and date from which the Termination or Deregistration will take effect and the terms of the Termination or Deregistration.

(b) the MO shall at the same time send a copy of the Termination Order to the MGC, NERSA, the SO and the relevant Network Operators and shall publish the Termination Order on its website.

6.5.2 Voluntary Termination

(1) A Party may apply at any time to cease to be a Party.

(2) A Party shall give at least thirty business days' notice in writing to the MO (with a copy to the System Operator, the MGC, the relevant Network Operator and NERSA) of its intention to cease being a Party and shall specify the time and date upon which it wishes the Termination to take effect. Voluntary Termination shall have the effect of Deregistration of all of a Party's Trading Units.

(3) Following receipt of a notice for Voluntary Termination, the MO shall issue a Voluntary Termination Consent Order if the relevant Party has complied with the following conditions:

(A) all amounts due and payable by the relevant Party pursuant to this Market Code have been paid in full;

(B) any outstanding Default by the relevant Party of this Market Code which is capable of remedy has been remedied;

(C) the written consent of the MGC has been obtained; and

(D) if the Party has registered DSUs, the terms of any applicable Metering Code have been complied with in relation to the Deregistration or transfer of those DSUs.

(4) The MO shall specify in each Termination Consent Order the Credit Cover which the relevant Party is required, to maintain in respect of any Trading Units being Deregistered pursuant to the Termination Consent Order and the duration thereof.

(5) The Voluntary Termination shall take effect at the end of the last Trading Period of the Trading Day specified by the MO in the Voluntary Termination Consent Order so long as, at that time, the relevant Party remains in compliance with the conditions set.

(6) The MO, the SO, the Network Operators shall not be permitted to terminate their being a party to this Market Code except where so required by NERSA.

6.5.3 Consequences of Termination

(1) When a Party is Terminated, then:

(A) the MO shall Deregister all of that Party's Trading Units;

(B) the MO shall inform the MGC, NERSA, the SO and relevant Network Operators of the Termination;

(C) the Party must stop all trading in the SAWEM in respect of all of its Trading Units at the time and date specified in the Termination Order or the Termination Consent Order; and

(D) the Party must maintain the Credit Cover for each of its Trading Units in the amounts and for the duration provided as specified in the Termination Order or Termination Consent Order as applicable.

(2) Any Termination of a Party will not affect the accrued rights or obligations of any Party which arose out of, or which relate to any act or omission prior to the date of such Termination and including:

(A) payment of any amount which was or becomes payable under this Market Code in respect of any period before the date of the Termination of the Party (including in relation to any Dispute regarding an event before the Termination of the Party even if the Notice of Dispute is given after the date of Termination of the Party); and

(B) any unremedied breach by it of this Market Code.

(3) Any provisions of this Market Code which expressly, or by implication are intended to, commence, or continue in effect on or after Termination of a Party shall continue to bind a Terminated Party.

(4) For the avoidance of doubt, a Terminated Party shall continue to be bound by the Dispute Resolution Process in respect of any Disputes arising following its Termination.

6.5.4 Consequences of Deregistration

(1) Where any of a Market Participant's Trading Units are Deregistered in accordance with the provisions of this Market Code, whether voluntarily or otherwise:

(A) the Market Participant must stop all trading in the Market in respect of the relevant Trading Units at the time and date specified in the Termination Order or the date specified in the Deregistration Consent Order; and

(B) the Market Participant must maintain the Credit Cover in respect of each of the relevant Trading Units in the amounts and for the duration as specified in the Termination Order or Deregistration Consent Order as applicable.

(2) Where the MO, in the circumstances provided for under this Market Code, accepts a new notice from a Party or Applicant to register a Trading Unit which is at that time registered to another Market Participant, prior to the Deregistration of that Trading Unit from the existing Market Participant, then the acceptance of

the new Participation Notice shall, unless expressly provided otherwise, be without prejudice to the process for Deregistration of the Trading Unit from the existing Market Participant in accordance with the timelines set out in this Market Code and the new registration of that Trading Unit shall not take effect until such process has been completed.

6.6 Force Majeure

(1) A Party shall not be liable to any Party for any failure or delay in the performance of any of their respective obligations under this Market Code, other than the obligation to make payments of money, to the extent that such failure or delay is due to a Force Majeure Event, provided that an affected Party shall only be excused from performance pursuant to this section:

a) for so long as the Force Majeure Event continues and for such reasonable period of time thereafter as may be necessary for the affected Party to resume performance of the obligation; and

b) where and to the extent that the failure or delay in performance would not have been experienced but for such Force Majeure Event.

(2) A Party shall not invoke a Force Majeure Event unless it has given notice in accordance with paragraph (3) below.

(3) Where a Party invokes a Force Majeure Event, it shall give notice to the Market Operator, System Operator and NERSA as soon as reasonably practicable but in any event within two business days of the date on which the affected Party becomes aware of the occurrence of the Force Majeure Event. The Market Operator shall notify any other directly affected Parties. The notice given under this section shall include particulars of:

a) the nature of the Force Majeure Event;

b) the effect that such Force Majeure Event is having on the affected Party's performance of its obligations under this Market Code; and

c) the measures that the affected Party is taking, or proposes to take, to mitigate or alleviate the impact of the Force Majeure Event.

(4) Where a Party invokes a Force Majeure Event, it shall:

a) use all reasonable endeavours to mitigate or alleviate the effects of the Force Majeure Event on the performance of its obligations under this Market Code; and

b) continue to comply with its obligations under this Market Code to the maximum extent practicable.

(5) Where a Party invokes a Force Majeure Event, it shall as soon as practicable notify the affected Parties of:

a) any material change in the information contained in the notice referred to in point (3) or in any previous notice given and published pursuant to this point (5); and

b) the cessation of the Force Majeure Event and of cessation of the effects of such Force Majeure Event on the affected Party's performance of its obligations under this Market Code.

(6) Each Party shall resume performance of all its obligations upon cessation of the Force Majeure Event.

7 REGISTRATION OF TRADING RESOURCES AND STANDING DATA

7.1 Market Operator Registry

(1) The data required in sections 7.2 to 7.4 below shall be provided by the Party at registration as part of the accession process. This data shall be maintained by the MO and changed from time to time at the request of the Party.

(2) The data shall be maintained by the MO in a Registry and shared with the SO.

(3) This Registry shall be available for inspection by NERSA.

(4) Each Party shall be able to review and shall be responsible to update the data held in the Registry relevant to resources operated by that Party.

(5) A Party must submit in writing to the MO modifications to the Registry data by 08h00 on the day preceding the date at which the modification becomes effective, unless mutually agreed between the MO and the Party.

(6) Where changes in a Party's registration impacts another Party (addition of a new Point of Delivery or removal of a Point of Delivery) the MO shall inform the other Party and ensure the integrity of the Registry by maintaining that all Points of Delivery are covered by two Balance Responsible Parties.

7.2 Common information for Trading Units

(1) The following data shall be submitted by the Market Participant and maintained by the MO for each Trading Unit:

(a) Official Trading Unit name;

(b) The unique MO identifier for the Trading Unit, determined by the MO at registration;

(c) Bank account details for the Trading Unit;

(d) The Network Zone associated with the Trading Unit;

(e) The MCR of the Trading Unit.

(f) The minimum stable generating point ("Mingen") of the Trading Unit;

(g) Designation as an energy constrained Trading Unit, if applicable;

(h) Designation as a storage Trading Unit, and specifically a pumped-storage trading unit, if applicable;

(i) For each Point of Delivery configured in the Trading Unit:

a. The geographic location of the Point of Delivery;

b. The metering arrangements, including the device identification number and access identification for remote interrogation, for the

Point of Delivery;

c. If embedded within a network other than the TS, the name of the Distributor responsible for the network associated with each Point of Delivery;

d. Identification of the BRP counter-party for energy flows at each Point of Delivery;

e. The technology type of Generating Units (for example, coal-fired thermal, pumped-storage, hydro, wind, solar PV etc.) as well as emission data relating to the Generating Units;

f. If the Point of Delivery is an Interconnector, the SAPP portfolio name associated with any trades on SAPP.

(j) The start-up ramp rates and costs of the Trading Unit, expressed as:

(i) The time since operation (in hours) until which the Trading Unit is assumed hot; the associated start-up ramp rate (in MW/h) from a hot condition; the start-up cost (in R) for starting up from a hot condition; and the associated lead time to synchronisation from a hot condition after an instruction;

(ii) The time since operation (in hours) until which the Trading Unit is assumed warm (assumed as any period in excess of the hot condition); the associated start-up ramp rate (in MW/h) from a warm condition; the start-up cost (in R) for starting up from a warm condition; and the associated lead time to synchronisation from a warm condition after an instruction;

(iii) The associated start-up ramp rate (in MW/h) from a cold condition (assumed as any period in excess of the warm condition); the start-up cost (in R) for starting up from a cold condition; and the associated lead time to synchronisation from a cold condition after an instruction.

(k) The minimum run time of the Trading Unit (in hours), being the minimum time that the Unit is prepared to generate or consume. A Trading Unit, if committed by the dispatch algorithm, will be scheduled to generate or consume for a time at least equal to this period under normal circumstances.

(l) The minimum down time of the Trading Unit (in hours), being the minimum time that the Trading Unit is prepared to stay off before being synchronised again. A Trading Unit, if de-committed by the dispatch algorithm, will be scheduled off for a time at least equal to this period under normal circumstances.

(m) Start-up ramp rate, being the rate (in MW/h) at which the Trading Unit may be loaded between synchronisation and Mingen.

(n) The loading ramp rate, being the rate (in MW/h) at which the Trading Unit may be loaded between Mingen and MCR;

(o) The de-loading ramp rate, being the rate (in MW/h) at which the Trading Unit may be de-loaded between MCR and Mingen;

(p) The shut-down ramp rate, being the rate (in MW/h) at which the Trading Unit may be de-loaded between Mingen and off load;

(q) The certified capacity for Regulating Reserve (in MW) agreed by the SO;

(r) The certified capacity for Instantaneous Reserve (in MW) agreed by the SO;

(s) The certified capacity for Ten-Minute Reserve (in MW) agreed by the SO;

(t) The certification for Synchronous Condenser Operation (in MVAr) agreed by the SO;

7.3 Additional data for energy constrained Trading Units

(1) The following data shall be submitted by the Market Participant and maintained by the MO for each Trading Unit registered as energy constrained:

(a) The water resource supplying the Trading Unit, if any, and its capacity;

(b) The names and contact details of any authority responsible for management of the water resource, if any;

(c) Cavitation (hydraulic instability) zones;

(d) The maximum energy output or consumption from the Trading Unit per day (in MWh/day);

(e) The maximum energy output or consumption from the Trading Unit per week (in MWh/week);

(f) The time taken for mode changes between stand-still, SCO and generating mode in all directions (in minutes).

7.4 Additional data for storage Trading Units

(1) The following data shall be submitted by the Market Participant and maintained by the MO for each Trading Unit registered as a storage Trading Unit:

(a) The water resources connected to the Trading Unit, if any;

(b) The names and contact details of any authority responsible for management of the water resources, if any;

(c) Cavitation (hydraulic instability) zones;

(d) The maximum continuous charging rating (MW) of each Trading Unit;

(e) The minimum stable charging point (MW) (“mincharge”) of each Trading Unit;

(f) The (generating energy equivalent) maximum level of the storage facility associated with the Trading Unit (in MWh);

(g) The (generating energy equivalent) minimum level of the storage facility associated with the Trading Unit (in MWh);

(h) The storage cycle efficiency of the Trading Unit (in percentage);

(i) The time taken for mode changes between stand-still, SCO, pumping and generating in all directions (in minutes).

7.5 Interconnectors

(1) International trade shall follow the regulations set out in chapter 0.

(2) The following data shall be submitted by the SO and maintained by the MO for each interconnection with neighbouring countries:

(a) Official Interconnector name;

(b) The unique MO or identifier for the Interconnector, determined by the MO at registration;

(c) Geographical location of the Interconnector;

(d) Network Zone of the Interconnector;

(e) The names and contact details of the neighbouring network authority and control area authority;

(f) Metering arrangement for the Interconnector, including the device identification number and access identification for remote interrogation;

(g) If embedded within a network other than the TS, the name of the Distributor responsible for the network;

(h) Identification of the BRP counter-party for energy flows.

8 INTERNATIONAL TRADE

8.1 Generic provisions

(1) The international trade covers the cross-border bilateral trading with regional counterparts and trade in the organised regional markets governed by Southern African Power Pool (SAPP).

(2) The objectives of these rules are to ensure that the regional trade is performed in such manner that they bring benefit to the South African power sector and ensuring participation based on sound economics.

(3) A generic requirement for all Parties that shall be trading on SAPP is that they hold an Import and Export Licence in South Africa and that they are, or an affiliate is, a Market Participant in the SAPP markets.

(4) Any Party participating/interacting in the SAPP markets will be under the SAPP governance as well as this Market Code.

(5) The following Parties will be interacting with SAPP markets:

(a) The SO performing the following roles:

(i) Determine the available transmission capacity for all international interconnections from South Africa to the SAPP markets;

(ii) Acting as the transmission system operator under the SAPP regulations;

(iii) Report the total scheduled interconnection flows to the MO; and

(iv) Act as the Balance Responsible Party towards SAPP.

(b) The MO performs the following roles:

(i) Act as a representative of the SAWEM Market Participants for those volumes that are traded through the SAWEM;

(ii) For the Day-Ahead Market, create a Net Export Curve representing the aggregated purchases and sales offers from the orders in the SAWEM Day-Ahead Market using the order information from the different Market Participants including adjusting for any capacity payments or non-energy based payments;

(iii) Take the scheduled flows from the SAPP markets as a deemed flow in the market clearing in the SAWEM;

(c) The CPA shall manage and maintain the historical regional bilateral contracts and schedule these according to the SAPP Market Book of Rules.

(d) A SAWEM Market Participant with a Capacity Payment agreement with the CPA will have the following roles:

(i) Shall always offer their full capability to the SAWEM;

(ii) Will not be allowed to participate directly in the SAPP regional markets;

(iii) Will indirectly be participating through the MO that will use its orders in the short-term markets (DAM, IDM and BM) and thereby have implicit access to the regional markets;

(iv) Will be a Balance Responsible Party under this Market Code; and

(v) All settlement and financial management will be towards the MO.

(e) SAWEM Market Participant without a Capacity Payment agreement with the CPA will have the following roles:

(i) Has a choice to whom it will buy or sell its power from;

(ii) Can buy or sell its power through the following channels:

a. A bilateral physical contract with a South African counterpart. In this event, it will have to nominate its planned schedule to the SAWEM to be considered in the SAWEM. The settlement of this bilateral physical contract will be between the parties;

b. A bilateral financial contract with a South African (or regional) counterpart. In this event, it should participate in the SAWEM to be considered in SAWEM to secure a physical position. The settlement of this financial bilateral contract will be between the parties;

c. Subject to being a SAPP Market Participant, participate in the SAPP organised physical markets: FPM (monthly and weekly), DAM, IDM and BM. If successful, nominate its planned schedule to the SO to be considered in the management of the transmission capacity towards SAPP. The settlement of this trade will be between SAPP and the Market Participant;

d. Participate in the SAWEM as a Market Participant under this Market Code; or

e. Any combination of the above.

(iii) Will be a Balance Responsible Party under this Market Code; and

(iv) The settlement and financial management will be against the counterparts in its trades; a potential combination of bilateral contracts counterpart(s), SAPP and MO.

(6) All these different roles will be subject to the rules of this Market Code.

8.2 Regional bilateral contract management

(1) The CPA is the only Party that has the opportunity of trading regional physical bilateral contract, specifically for legacy bilateral contracts. In this event, the CPA will have to secure the transmission capacity through the SO and nominate its planned schedule to the SO to be considered in the management of the

transmission capacity towards SAPP.

(2) The registration of any bilateral shall be done as per the SAPP rules.

(3) The nominations of the scheduled flows shall be done according to the SAPP rules and timelines.

(4) The total scheduled flows on the interconnections will be reported from SAPP to the SO as per the SAPP timelines and will be forwarded to the MO to be considered in the SAWEM market clearing.

8.3 Trading in the SAPP Forward Physical Markets

(1) Only a SAWEM Market Participant without a Capacity Payment may participate directly in the SAPP Forward Physical Market.

(2) Such participants shall enter their order(s) into the SAPP Market as per the SAPP rules and timelines.

(3) A SAWEM Market Participant without a Capacity Payment will be subject to the financial settlement timelines of SAPP if it is successful in trading power in any of these markets.

(4) A SAWEM Market Participant without a Capacity Payment shall nominate its scheduled generation/consumption if it is successful in trading power in any of these SAPP markets.

(5) The flow based on these trades will be sent to the MO as a BRP as per the rules of this Market Code.

8.4 Trading in the SAPP Day-Ahead Market

(1) A SAWEM Market Participant without a Capacity Payment has the opportunity to participate directly in the SAPP DAM.

(2) In addition, the MO will participate in the SAPP DAM on behalf of the SAWEM Market Participants.

(3) The MO will create Single hourly orders to SAPP based on a Net Export Curve (NEC). The NEC is the difference between local (i.e. per Bidding Zone) aggregated supply and demand curves (in case of perfectly inelastic demand the NEC consists only of supply) and shall:

(a) Represent the sensitivity of the SMP relative to exchange volumes from SAWEM;

(b) Contain minimum amount of required information for bidding into the SAPP DAM as per the SAPP Market Book of Rules;

(c) The MO needs to ensure non-violation of internal network constraints when constructing the NEC;

(d) The NEC may be adjusted based on the applicable capacity payments for any Market Participants to ensure compatibility with the SAPP market; and

(e) NEC construction requires a well-defined and transparent methodology that shall be maintained by the MO and published on its website.

(4) A SAWEM Market Participant without a Capacity Payment will be subject to the financial settlement timelines and rules of SAPP if it is successful in trading power in the SAPP DAM.

(5) A SAWEM Market Participant without a Capacity Payment shall nominate its scheduled generation/consumption if it is successful in trading power in SAPP DAM.

(6) The MO will use any trading results from SAPP DAM based on its order as a deemed flow in its SAWEM Day-Ahead market clearing.

(a) The MO will run a revised Unconstrained Schedule and Constrained Schedule incorporating the net import or export trade from the SAPP DAM. This would imply a change in the day-ahead prices (potentially increased if there is an export trade, potentially decreased if there is an import trade).

(b) If the MO should realise a benefit from the trade (where the effective SAPP DAM price is different to the revised SAWEM day-ahead price) this benefit will accrue to the Market Balancing account to offset Balancing Mechanism imbalances.

(7) The flow on the interconnectors based on these trades will be sent to the SO as the South African BRP.

8.5 Trading in the SAPP Intra-Day Market

(1) A SAWEM Market Participant without a Capacity Payment has the opportunity to participate directly in the SAPP IDM.

(2) A SAWEM Market Participant without a Capacity Payment will be subject to the financial settlement timelines and rules of SAPP if it is successful in trading power in the SAPP IDM.

(3) A SAWEM Market Participant without a Capacity Payment shall nominate its scheduled generation/consumption if it is successful in trading power in SAPP IDM.

(4) The flow on the interconnectors based on these trades will be sent to the SO as the South African BRP.

8.6 Trading in the SAPP Balancing Market

(1) The SO will participate on behalf of the SAWEM Market Participants.

(2) This will be done by creating individual hourly orders (to SAPP) based on the following:

(a) The SO will offer unused orders from SAWEM Market Participants that has not been utilised neither as Day-ahead Energy or Regulating Reserve (Up), Regulating Reserve (Down), Instantaneous Reserve, or Ten-Minute Reserve;

(b) Unused orders will be offered to the SAPP BM as individual orders.

(3) A SAWEM Market Participant without a Capacity Payment will be subject to the financial settlement timelines of SAPP if it is successful in trading power in the SAPP BM.

(4) A SAWEM Market Participant without a Capacity Payment shall nominate its scheduled generation/consumption if it is successful in trading power in SAPP BM.

(5) The MO will use any trading results from SAPP BM based on the SO order(s) as a deemed flow in its national market clearing.

(6) The same resulting flow in the interconnectors based on these trades will be sent to the SO as the South African BRP.

9 DAY-AHEAD MARKET

9.1 Demand Forecast and Reserve Requirements

(1) The SO shall produce a forecast of system energy demand for each Trading Period of the Trading Day (as well as indicative forecasts of system energy demand for each Trading Period for the six days following the Trading Day). This demand shall include network technical losses for each Trading Period of the Trading Day (as well as expected exports to, or expected imports from, neighbouring networks), indicating the required total net sent-out from all Generators. The demand forecast shall be produced by 10h00 on the day preceding the Trading Day and shall be made available to all Market Participants.

(2) For the avoidance of doubt, this demand forecast is published for information only and any DSU should produce its own forecast as basis for their Bids in the DAM.

(3) The SO shall forecast the transmission network technical losses on behalf of the transmission Network Operator for each Trading Period of the Trading Day.

(4) The SO shall determine the required reserves for each Trading Period of the Trading Day (as well as for each Trading Period of the six days following the Trading Day). These requirements shall determine the minimum reserve requirements for each of the following categories:

(a) Regulating Reserve (Up)

(b) Regulating Reserve (Down)

(c) Instantaneous Reserve (Up)

(d) Ten-Minute Reserve.

(5) The SO shall determine the required Contingency Reserve for each Trading Period of the Trading Day (as well as for each Trading Period of the six days following the Trading Day). The Contingency Reserve requirement shall be determined based on a probabilistic assessment of the accuracy of generator availability forecasts and Market Participant consumption forecasts, among others. The Contingency Reserve will not be scheduled like the other reserve categories, but the Market Operator will report whether sufficient generating and demand response capacity from Trading Units is available (following the scheduling of energy and reserve categories) to fulfil the System Operator requirement.

9.2 Interconnection Schedules

(1) The SO shall provide a schedule of the expected physical bilateral imports or exports for each Trading Period of the Trading Day (as well as indicative schedules for each Trading Period of the six days following the Trading Day). This schedule shall be provided to the MO by 13h30 on the day preceding the Trading Day.

(2) The SO shall provide an updated intraday schedule of the expected imports or exports for each Trading Period of the Trading Day based on any regional intra-

day trading. This schedule shall be provided to the MO at latest two hours before the Trading Period starts on the Trading Day. The information provided shall include:

(a) The official interconnection name (as in the Registry);

(b) The Trading Period (the Trading Period start time); and

(c) The expected net import (positive) or export (negative) in the Trading Period (in MWh).

9.3 Day-ahead Market Submissions

(1) Day-ahead Market Participants shall provide a daily submission of the expected availability or maximum consumption of each Trading Unit and the incremental price associated with the dispatch of these Trading Unit(s) for each Trading Period. The schedule should include indicative availability or maximum consumption for each Trading Period of the six days following the Trading Day. This schedule shall be provided by 10h00 on the day preceding the Trading Day.

(2) If a Market Participant does not provide a daily submission for a Trading Unit for the next Trading Day by the day-ahead gate-closure of 10h00 then a rolled-over submission shall be generated by the Market Operator for that Trading Unit utilising the previous valid daily submission for the Trading Unit with the information relevant to the second day of the previous submission used for the first day of the rolled-over submission. Similarly each subsequent day in the rolled-over submission shall use the following day in the previous submission (e.g. second day in the rolled-over submission using the third day in the previous submission) with the exception that the seventh day of the rolled-over submission shall be the seventh day of the previous submission. The Market Operator shall notify the Market Participant of the generation of a rolled-over submission for each Trading Unit whenever this occurs.

(3) The Market Operator may extend the gate-closure for day-ahead submissions alerting all Market Participants through the MO platforms.

(4) The information provided in the day-ahead submission shall include:

(a) The official Trading Unit name (as in the Registry);

(b) Availability indicators in the form of:

(i) The Trading Period (the Trading Period start time);

(ii) The hourly Declared Available Capacity (in MW), being the maximum sent-out to which the Trading Unit may be scheduled in the Trading Period;

(iii) The Declared Consumption (in MW) for each Trading Period, being the forecast consumption of the Trading Unit and the maximum to which the Trading Unit may be scheduled in the Trading Period;

(iv) The Flexible Indicator (either F or I), indicating whether the Trading Unit is flexible (or able to be dispatched) in that Trading Period (F), or inflexible to central dispatch (I);

(v) The Instantaneous Reserve Availability Indicator (either A or U), indicating whether the Trading Unit is available to provide Instantaneous Reserve in the Trading Period (A) or not (U);

(vi) The Regulating Reserve Availability Indicator (either A or U), indicating whether the Trading Unit is available to provide Regulating Reserve in the Trading Period (A) or not (U);

(vii) The Ten-Minute Reserve Availability Indicator (either A or U), indicating whether the Trading Unit is available to provide Ten-Minute Reserve in the Trading Period (A) or not (U);

(c) The production price, in the form of a piecewise-linear price curve, with parameters set as follows:

(i) The Trading Period (the Trading Period start time) from which the price curve is applicable;

(ii) The Minimum Stable Generation point of the Trading Unit (MW), which must be the same as the Mingen value for the Trading Unit from the standing data;

(iii) The first elbow point (MW) which must be greater than or equal to the minimum generation point;

(iv) The second elbow point (MW) which must be greater than or equal to the first elbow point;

(v) The third elbow point (MW) which (a) must be equal to the MCR for the Trading Unit from the Registry, and (b) must be greater than or equal to the second elbow point;

(vi) The Emergency Level 1 (EL1) point (MW) which must be greater than or equal to the third elbow point;

(vii) The Cost Increment 0, for the block of capacity between 0MW and the minimum generation point. The Cost Increment 0 must be non-negative;

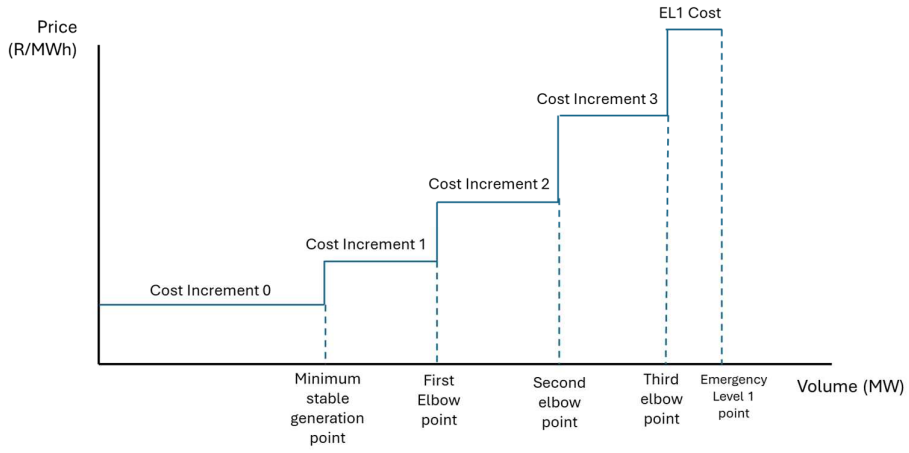
(viii) The Cost Increment 1, for the block of capacity between the minimum generation point and the first elbow point. The Cost Increment 1 must be non-negative;

(ix) The Cost Increment 2, for the block of capacity between the first elbow point and the second elbow point. The Cost Increment 2 must be greater than or equal to the Cost Increment 1;

(x) The Cost Increment 3, for the block of capacity between the second elbow point and the third elbow point. The Cost Increment 3 must be greater than or equal to the Cost Increment 2;

(xi) The EL1 cost, for the block of capacity between the third elbow point and the EL1 point. The EL1 cost must be greater than or equal to the Cost Increment 3;

Figure 1 – Representation of production piece-wise linear curve



(d) The consumption price, in the form of a piecewise-linear price curve, with parameters set as follows:

(i) The Trading Period (the Trading Period start time) from which the price curve is applicable;

(ii) The first elbow point (MW) which must be less than or equal to the Declared Consumption;

(iii) The second elbow point (MW) which must be less than or equal to the first elbow point;

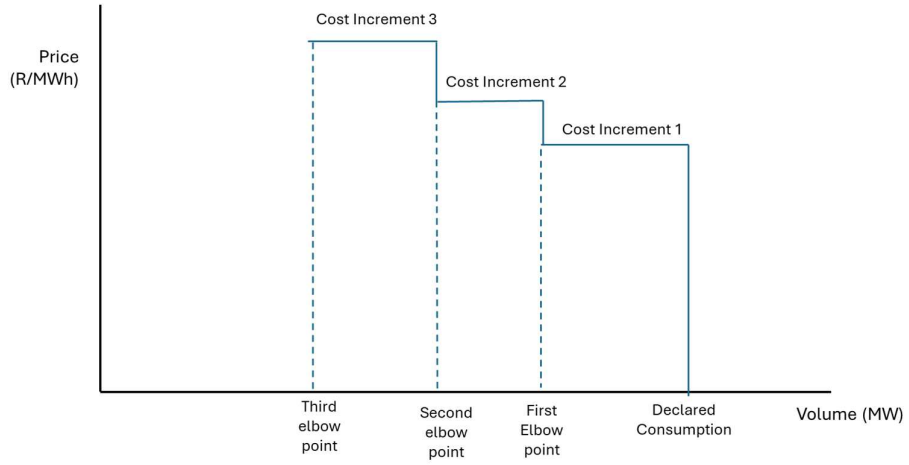
(iv) The third elbow point (MW) which must be less than or equal to the second elbow point and non-negative;

(v) The Cost Increment 1, for the block of consumption between the Declared Consumption and the first elbow point. The Cost Increment 1 must be non-negative;

(vi) The Cost Increment 2, for the block of consumption between the first elbow point and the second elbow point. The Cost Increment 2 must be non-negative but greater than or equal to the Cost Increment 1;

(vii) The Cost Increment 3, for the block of consumption between the second elbow point and the third elbow point. The Cost Increment 3 must be non-negative but greater than or equal to the Cost Increment 2.

Figure 2 – Representation of consumption piece-wise linear curve



9.4 Additional submission from energy-constrained Trading Units

(1) An energy constrained Trading Unit shall also indicate the Energy Limit applicable to the Trading Day (in MWh) above which the MO may not schedule additional energy from the Trading Unit, as well as the Energy Limit applicable to each of the six days following the Trading Day. An indication of the total Energy Limit for the full seven days (in MWh) shall also be provided, above which the MO may not schedule additional energy from the Trading Unit.

(2) In each Trading Period the Trading Unit shall also indicate the preferred run flag (either Y or N), indicating whether the Trading Unit prefers to run in that Trading Period (Y), or not (N).

9.5 Dispatch Algorithm

(1) The MO shall determine an Unconstrained Schedule which will determine the optimal dispatch for all Trading Units for each Trading Period of the Trading Day, taking into consideration reserve requirements, interconnection schedules, and the production and consumption prices and parameters of Market Participants' Trading Units, but without consideration of network constraints.

(2) The dispatch algorithm objective shall be to minimise the total cost of generation required to meet the expected demand (as reflected by the consumption submissions by Market Participants), constrained by the reserve requirements and technical capabilities of Trading Units.

(a) The total cost of generation will include the incremental cost of production for each scheduled Generator, the start-up costs for Generators synchronised during the period and the costs of dispatching DSU(s).

(b) Regulating, Instantaneous and Ten-Minute Reserve will be co-optimized with the energy dispatch schedule, taking into account the individual reserve requirements.

(c) In the event that more than one Trading Unit has the same incremental price as the system marginal price (i.e. is the marginal generator) the required generation or demand response will be allocated to each Trading Unit in proportion to the energy volume associated with the increment (or increments if more than one increment has the same incremental price) of

each Trading Unit.

(3) The dispatch algorithm will optimise the storage cycle to minimise the cost of generation over a week, considering storage cycle efficiency and the limits imposed on the storage levels (including targets instituted by the SO for storage levels at specific times).

(4) Once the Unconstrained Schedule is determined, the MO shall determine a Constrained Schedule which incorporates network constraints.

(5) The Constrained Schedule dispatch algorithm objective shall also be to minimise the total cost of generation within the additional security constraints imposed by the SO to cater for transmission network and other constraints required to meet security of supply objectives.

(6) The SO will dispatch the system based on the Constrained Schedules calculated by the MO.

(7) A detailed formulation of the dispatch algorithm will be maintained by the MO and published on their website. Should the Market Operator wish to amend this formulation the proposed amendments will be published for comment by Market Participants and Balance Responsible Parties, providing at least one full Month for comment prior to implementation.

9.6 Day-Ahead Trading Unit Prices

(1) The Day-Ahead Trading Unit prices shall be calculated ex ante, shall be prices per Trading Period and shall be calculated for all Trading Periods of the Trading Day.

(2) The Trading Unit prices shall be calculated by, at the latest, 14:00 hours of every day for the following Trading Day. The Constrained Schedule shall be used to calculate the cost of lost opportunity as the Trading Unit is compensated elsewhere for differences from Unconstrained to Constrained Schedule.

(3) Unit prices shall be applicable only to the particular Trading Unit for which they are calculated.

9.6.1 Cost of Lost Opportunity for Regulating Up Reserve Capacity (CLO_{RURC})

(1) The price shall be determined for each Trading Period of the Trading Day and shall be calculated in Rand per MW. The price shall only be determined for individual Trading Units contracted to provide Regulating Up Reserve capacity. This is the price for loss of opportunity in the SAWEM due to the provision of Regulating Up Reserve capacity.

(2) The price shall be equal to the difference of the SMP for the particular Trading Period and the energy price of the Trading Unit at the contracted operating point. If the Trading Unit's contracted volume coincides with an elbow point of the price curve the next increment's price shall be used. If the Trading Unit's contracted volume coincides with the MCR point increment price 3 will be used.

(3) The price shall be set equal to zero if the Trading Unit's energy price exceeds the SMP for a particular Trading Period.

$$CLO_{RURCTuh} = \max(SMP_h - IP_{Tuh}, 0)$$

where:

CLO_{RURC}	⇒	Cost of Lost Opportunity for Regulating Up Reserve Capacity
SMP	⇒	System Marginal Price
IP	⇒	Incremental Price
Tu	⇒	Specific Trading Unit
h	⇒	Trading Period

9.6.2 Cost above Energy Market for Regulating Down Reserve Capacity (CEM_{RDRC})

(1) The price shall be determined for each Trading Period of the Trading Day and shall be calculated in Rand per MW. The price shall only be determined for individual Trading Units contracted to provide Regulating Down Reserve capacity. This is the cost above the price paid for energy in the market due to the provision of Regulating Down Reserve capacity.

(2) The price shall be equal to the difference of the energy price of the Trading Unit at the contracted volume and the SMP for the particular Trading Period. If the Trading Unit's contracted volume coincides with an elbow point of the price curve the lower increment's price shall be used. If the Trading Unit's contracted volume coincides with the Minimum Stable Generation point the increment price 1 will be used.

(3) The price shall be set equal to zero if the Trading Unit's energy price exceeds the SMP for a particular Trading Period.

$$CEM_{RDRCTuh} = \max(IP_{Tuh} - SMP_h, 0)$$

where:

CEM_{RDRC}	⇒	Cost above Energy Market for Regulating Down Reserve Capacity
SMP	⇒	System Marginal Price
IP	⇒	Incremental Price
Tu	⇒	Specific Trading Unit
h	⇒	Trading Period

9.6.3 Cost of Lost Opportunity for Instantaneous Reserve Capacity (CLO_{IRC})

(1) The price shall be determined for each Trading Period of the Trading Day and shall be calculated in Rand per MW. The price shall only be determined for individual Trading Units contracted to provide Instantaneous Reserve Capacity. This is the price for loss of opportunity in the SAWEM due to the provision of Instantaneous Reserve Capacity.

(2) The price shall be equal to the difference of the SMP for the particular Trading

Period and the energy price of the Trading Unit at the contracted operating point. If the Trading Unit's contracted volume coincides with an elbow point of the price curve the next increment's price shall be used. If the Trading Unit's contracted volume coincides with the MCR point increment price 3 will be used.

(3) The price shall be set equal to zero if the Trading Unit's energy price exceeds the SMP for a particular Trading Period.

$$CLO_{IRCTuh} = \max(SMP_h - IP_{Tuh}, 0)$$

where:

CLO_{IRC}	⇒	Cost of Lost Opportunity for Instantaneous Reserve Capacity
SMP	⇒	System Marginal Price
IP	⇒	Incremental Price
Tu	⇒	Specific Trading Unit
h	⇒	Trading Period

9.6.4 Cost of Lost Opportunity for Ten-minute Reserve Capacity (CLO_{HRC})

(1) The price shall be determined for each Trading Period of the Trading Day and shall be calculated in Rand per MW. The price shall only be determined for individual Trading Units contracted to provide Ten-minute Reserve Capacity. This is the price for loss of opportunity in the SAWEM due to the provision of Ten-minute Reserve Capacity.

(2) The price shall be equal to the difference of the SMP for the particular Trading Period and the energy price of the Trading Unit at the contracted operating point. If the Trading Unit's contracted volume coincides with an elbow point of the price curve the next increment's price shall be used. If the Trading Unit's contracted volume coincides with the MCR point increment price 3 will be used.

(3) The price shall be set equal to zero if the Trading Unit's energy price exceeds the SMP for a particular Trading Period.

$$CLO_{HRCTuh} = \max(SMP_h - IP_{Tuh}, 0)$$

where:

CLO_{HRC}	⇒	Cost of Lost Opportunity for Ten-minute Reserve Capacity
SMP	⇒	System Marginal Price
IP	⇒	Incremental Price
Tu	⇒	Specific Trading unit
h	⇒	Trading Period

9.7 Day-Ahead System Prices

(1) The day-ahead system prices shall be calculated ex ante, shall be prices per Trading Period and shall be calculated for all Trading Periods of the Settlements

Periods of the Settlement Day.

(2) The system prices shall be calculated by, at the latest, 14:00 hours of every day for the following Trading Day based on the Unconstrained Schedule.

9.7.1 Market Price Cap

(1) The Market Price Cap shall be set by the MGC. The Market Price Cap, set in Rand per MWh, shall provide the maximum price level for the System Marginal Price in each Trading Period. The Market Price Cap shall on the Commencement Date be set as the peak active energy Wholesale Tariff for the high (winter) season.

9.7.2 System Marginal Price for Energy (SMP)

(1) The SMP shall be determined for each Trading Period of the Trading Day, and shall be calculated in Rand per MWh.

(2) The SMP shall be the incremental price, at the scheduled (unconstrained) volume, of the most expensive flexible Trading Unit scheduled to run in the particular Trading Period. If the Trading Unit's scheduled volume coincides with an elbow point of the offer curve, including the Maximum Continuous Rating and excluding the Minimum Stable Generation point, the SMP shall be equal to the incremental price just below the particular elbow point.

(3) The SMP shall not exceed the Market Price Cap in any Trading Period, and shall be set at the Market Price Cap if it would otherwise be higher than the Market Price Cap.

(4) An inflexible Trading Unit shall not be able to set the SMP. A Trading Unit shall be regarded inflexible either by the way it is scheduled to run in a particular Trading Period or through the availability and operating intent of the Trading Unit, that can restrict the way a Trading Unit may be scheduled, namely:

(i) If a Trading Unit is scheduled to run at or below its Minimum Stable Generation during a Trading Period; or

(ii) If a Trading Unit is declared inflexible for the Trading Period in the bid offer; or

(iii) If a Trading Unit is constrained by ramping; or

(iv) If a Trading Unit is constrained by Regulation downwards.

(5) For Trading Periods where all Trading Units are inflexible the SMP shall be set to zero (0).

9.7.3 System Marginal Price for Regulating Up Reserve Capacity (SMP_{RURCh})

(1) The System Marginal Price for Regulating Up Reserve Capacity shall be determined for each Trading Period of the Trading Day, and shall be calculated in Rand per MW.

(2) The System Marginal Price for Up Regulating Reserve Capacity shall be equal

to the maximum of the Regulating Reserve Floor Price and the highest Cost of Lost Opportunity for Regulating Up Reserve Capacity among Trading Units contracted to provide Regulating Up Reserve Capacity in the particular Trading Period.

$$SMP_{RURCh} = \text{maximum } (RRFP, \text{highest } (CLO_{RURCTuh}))$$

where:

SMP_{RURCh}	⇒	System Marginal Price for Regulating Up Reserve Capacity
$CLO_{RURCTuh}$	⇒	Cost of Lost Opportunity for Regulating Up Reserve Capacity
RRFP	⇒	Regulating Reserve Floor Price

9.7.4 System Marginal Price for Regulating Down Reserve Capacity (SMP_{DRRCh})

(1) The System Marginal Price for Regulating Down Reserve Capacity shall be determined for each Trading Period of the Trading Day, and shall be calculated in Rand per MW.

(2) The System Marginal Price for Regulating Down Reserve Capacity shall be equal to the maximum of the Regulating Reserve Floor Price and the highest Cost above Energy Market for Regulating Down Reserve Capacity among Trading Units contracted to provide Regulating Down Reserve Capacity in the particular Trading Period.

$$SMP_{RDRCh} = \max (RRFP, \text{highest } (CEM_{RDRCTuh}))$$

where:

SMP_{RDRCh}	⇒	System Marginal Price for Regulating Down Reserve Capacity
$CEM_{RDRCTuh}$	⇒	Cost above Energy Market for Regulating Down Reserve Capacity
RRFP	⇒	Regulating Reserve Floor Price

9.7.5 System Marginal Price for Instantaneous Reserve Capacity (SMP_{IRCh})

(1) The System Marginal Price for Instantaneous Reserve Capacity shall be determined for each Trading Period of the Trading Day, and shall be calculated in Rand per MW.

(2) The System Marginal Price for Instantaneous Reserve Capacity shall be equal to the maximum of the Instantaneous Reserve Floor Price and the highest Cost of Lost Opportunity for Instantaneous Reserve Capacity among Trading Units contracted to provide Instantaneous Reserve Capacity in the particular Trading Period.

$$SMP_{IRCh} = \max(\text{highest } (CLO_{IRCTuh}), IRFP)$$

where:

SMP_{IRCh}	⇒	System Marginal Price for Instantaneous Reserve Capacity
CLO_{IRCTuh}	⇒	Cost of Lost Opportunity for Instantaneous Reserve Capacity
IRFP	⇒	Instantaneous Reserve Floor Price

9.7.6 System Marginal Price for Ten-minute Reserve Capacity (SMP_{MRCh})

(1) The System Marginal Price for Ten-minute Reserve Capacity shall be determined for each Trading Period of the Trading Day, and shall be calculated in Rand per MW.

(2) The System Marginal Price for Ten-minute Reserve Capacity shall be equal to the maximum of the Ten-Minute Reserve Floor Price and the highest Cost of Lost Opportunity for Ten-minute Reserve Capacity among Trading Units that have been contracted to provide Ten-minute Reserve Capacity in the particular Trading Period.

$$SMP_{MRCh} = \max(\text{highest } (CLO_{MRCTuh}), TRFP)$$

where:

SMP_{MRCh}	⇒	System Marginal Price for Ten-minute Reserve Capacity
CLO_{MRCTuh}	⇒	Trading Unit's Cost of Lost Opportunity for Ten-minute Reserve Capacity
TRFP	⇒	Ten-Minute Reserve Floor Price

9.8 Day-Ahead Settlements

9.8.1 Day Ahead Energy Payment for Generation and Consumption (EPM)

(1) The day-ahead energy payment (EPM) shall be paid to all Trading Units for the energy scheduled for both Generation and Consumption in the Unconstrained Schedule at the System Marginal Price.

$$EPM_{ij} = SG_{ij} * SMP_j$$

where:

EPM	⇒	Energy Payment
SG	⇒	Scheduled Energy (positive for energy produced, negative for energy consumed)
SMP	⇒	System Marginal Price
i	⇒	Specific Trading Unit
j	⇒	Trading Period

9.8.2 Constrained Schedule Adjustments

(1) Where the Trading Unit scheduled energy as contained in the Unconstrained Schedule is adjusted in the Constrained Schedule by the SO to accommodate system conditions, additional payments or charges will be made to compensate the Trading Unit for the change in scheduled energy.

(2) In the case of Balance Responsible Parties that have not submitted day-ahead energy prices for a Trading Unit (or for a portion of a Trading Unit's day-ahead position) the deemed incremental price for that Trading Unit (or portion of the Trading Unit) is R0/MWh.

(3) All payments from the Market Operator or payments to the Market Operator arising from the Constrained Schedule adjustments shall accrue to the System Operator and be recoverable as an Ancillary Service.

9.8.2.1 Payments for Constrained Purchases

(1) Additional energy arising from the Constrained Schedule will be paid by the MO at the incremental price offered by the Trading Unit in the day-ahead submissions.

$$CPP_{ij} = \int_{SGij}^{CGij} IP\, i \text{ where } CG_{ij} > SG_{ij}$$

where:

CPP	⇒	Constrained Purchases Payment
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SG	⇒	Unconstrained Schedule (positive for energy produced, negative for energy consumed)
CG	⇒	Constraint Schedule (positive for energy produced, negative for energy consumed)

9.8.2.2 Charge for Constrained Sales

(1) The MO will charge Trading Units for the reduction in energy schedules arising from the Constrained Schedule at the incremental price offered by the Trading Unit in the day-ahead submissions.

$$CSC_{ij} = \int_{SGij}^{CGij} IP\, i \text{ where } SG_{ij} > CG_{ij}$$

where:

CPC	⇒	Constrained Sales Charge
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SG	⇒	Unconstrained Schedule (positive for energy produced, negative for energy consumed)
CG	⇒	Constraint Schedule (positive for energy produced, negative for energy consumed)

9.8.3 Reserve Capacity Payments

(1) Capacity payments may only be made to a Reserve Resource that had contracted reserve capacity. Capacity not contracted for reserves shall not receive any reserve capacity payments.

(2) The System Operator may set performance criteria for each reserve category. A Reserve Resource that meets this performance criteria are deemed to have "acceptable performance" for the period established by the System Operator. A performance adjustment factor is applied to the capacity payment to account for performance not deemed "acceptable" to the System Operator. In the absence of a performance criteria for a reserve category all contracted Reserve Resources will be deemed to have "acceptable performance".

(3) Capacity contracted for reserve may have been utilised by the System Operator. A Reserve Resource with an acceptable performance by the utilised reserve capacity will receive the capacity payment for the contracted amount of that reserve capacity.

(4) A Reserve Resource with contracted reserve capacity not utilised may have been instructed to deliver an energy amount different to the contracted amount. A Reserve Resource with acceptable performance in the real-time balancing of energy will receive the capacity payment for the contracted amount of the corresponding reserve capacity.

(5) A Reserve Resource with contracted reserve capacity not utilised and not instructed to deliver an energy amount different to the contracted amount or delivering an energy amount different to the contracted amount against instruction, may still receive reserve capacity payments. These payments will depend on the Reserve Resource's actual energy delivery compared to its actual capacity available and also assessing its ability to perform acceptably had the reserve been requested to be utilised.

(6) A Reserve Resource capacity qualifying for payment will be limited by the effective availability of the Trading Unit to provide the reserve.

(7) All payments from the Market Operator arising from the Reserve Capacity Payments shall accrue to the System Operator and be recoverable as an Ancillary Service.

9.8.4 Payment for Regulating Up Reserve Capacity (PAY_{RURCh})

(1) The payment to a Trading Unit for Regulating Up Reserve Capacity shall be equal to the product of the System Marginal Price for Regulating Up Reserve Capacity and the Trading Unit's Regulating Reserve Up Capacity qualifying for payment in the particular Trading Period and the performance adjustment for Regulating Reserve calculated by the System Operator for the Trading Unit for the Trading Period.

$$PAY_{RURCTuh} = SMP_{RURCh} * \text{Capacity Qualifying}_{Tu} * PerfAdj_{RRTu}$$

where:

$PAY_{RURCTuh}$ $\Rightarrow$ Payment for Up Regulating Reserve Capacity

SMP_{RURCh}	⇒	System Marginal Price for Regulating Up Reserve Capacity
$PerfAdj_{RRTu}$	⇒	Performance Adjustment Factor for Regulating Reserve calculated by the System Operator

(2) The Capacity $Qualifying_{Tu}$ for a generating Trading Unit is equal to the minimum of the Capacity Contracted for Regulating up Reserve for the Trading Unit; and the Effective Available Capacity for the Trading Unit less the official energy Sent-out / Consumption for the Trading Unit (if this difference is positive and the Trading Unit was not utilised for the reserve or balancing services), and

- Official energy Sent-out for the Trading Unit >= Minimum Generation for the Trading Unit, and
- Official energy Sent-out for the unit <= Maximum Continuous Rating for the Trading Unit;

(3) The Capacity $Qualifying_{Tu}$ for a Demand Side Unit is equal to the minimum of the Capacity Contracted for Regulating Reserve for the Trading Unit, and the official energy consumption of the Trading Unit less the third elbow point on the consumption curve for the Trading Unit (if this difference is positive and the Trading Unit was not utilised for the reserve or balancing services), and

- Official energy consumption for the Trading Unit >= 0, and
- Official energy consumption for the unit <= Declared Consumption of the Trading Unit;

9.8.5 Payment for Regulating Down Reserve Capacity (PAYRDRCh)

(1) The payment to a Trading Unit for Regulating Down Reserve Capacity shall be equal to the product of the System Marginal Price for Regulating Down Reserve Capacity and the Trading Unit's Regulating Down Reserve Capacity qualifying for payment in the particular Trading Period and the performance adjustment calculated by the System Operator for the Trading Unit for the Trading Period.

$$PAY_{RDRCTuh} = SMP_{RDRCh} * \text{Capacity Qualifying}_{Tu} * PerfAdj_{Tu}$$

where:

$PAY_{RDRCTuh}$	⇒	Payment for Regulating Down Reserve Capacity
SMP_{RDRCh}	⇒	System Marginal Price for Regulating Down Reserve Capacity
$PerfAdj_{RRTu}$	⇒	Performance Adjustment Factor for Regulating Reserve calculated by the System Operator

(2) The Capacity $Qualifying_{Tu}$ is equal to the minimum of the Capacity Contracted for Regulating Down Reserve for the Trading Unit and the official energy Sent-out for the Trading Unit less the Minimum Generation of the Trading Unit (if this difference is positive and the Trading Unit was not utilised for the reserve or balancing services), and

- Official energy Sent-out for the Trading Unit <= Maximum Continuous Rating for the Trading Unit; and
- Effective Available Capacity for the Trading Unit >= official energy Sent-out for the Trading Unit.

9.8.6 Payment for Instantaneous Reserve Capacity (PAY_{IRCh})

(1) The payment to a Trading Unit for Instantaneous Reserve Capacity shall be equal to the product of the System Marginal Price for Instantaneous Reserve Capacity and the Trading Unit's Instantaneous Reserve Capacity qualifying for payment in the particular Trading Period and the performance adjustment for Instantaneous Reserve calculated by the System Operator for the Trading Unit for the Trading Period.

$$PAY_{IRCTuh} = SMP_{IRCh} * \text{Capacity Qualifying}_{Tu} * PerfAdj_{IRTu}$$

where:

PAY_{IRCTuh}	⇒	Payment for Instantaneous Reserve Capacity
SMP_{IRCh}	⇒	System Marginal Price for Instantaneous Reserve Capacity
$PerfAdj_{IRTu}$	⇒	Performance Adjustment Factor for Instantaneous Reserve calculated by the System Operator

(2) The Capacity $Qualifying_{Tu}$ for a generating Trading Unit is equal to the minimum of the Capacity Contracted for Instantaneous Reserve for the Trading Unit and the Effective Available Capacity for the Trading Unit less the official energy Sent-out for the Trading Unit (if this difference is positive and the Trading Unit was not utilised for the reserve or balancing services), and

- Official energy Sent-out for the Trading Unit >= Minimum Generation for the Trading Unit, and
- Official energy Sent-out for the Trading Unit <= Maximum Continuous Rating for the Trading Unit;

(4) The Capacity $Qualifying_{Tu}$ for a Demand Side Unit is equal to the minimum of the Capacity Contracted for Instantaneous Reserve for the Trading Unit and the official energy consumption of the Trading Unit less the third elbow point on the consumption curve for the Trading Unit (where this difference is positive and the Trading Unit was not utilised for the reserve or balancing services), and

- Official energy consumption for the Trading Unit >= 0, and
- Official energy consumption for the unit <= Declared Consumption of the Trading Unit.

9.8.7 Payment for 10-minute Reserve Capacity (PAY_{MRCh})

(1) The payment to a Trading Unit for Ten-minute Reserve Capacity shall be equal to the product of the System Marginal Price for Ten-minute Reserve Capacity and the Trading Unit's Ten-minute Reserve Capacity qualifying for payment in the particular Trading Period.

$$PAY_{MRCTuh} = SMP_{MRCh} * \text{Capacity Qualifying}_{Tu}$$

where:

PAY_{MRCTuh}	⇒	Payment to Trading Unit Tu for Ten-minute Reserve Capacity
SMP_{MRCh}	⇒	System Marginal Price for Ten-minute Reserve Capacity

(2) The Capacity $Qualifying_{Tu}$ for a generating Trading Unit is equal to the minimum of the Capacity Contracted for Ten-minute Reserve for the Trading Unit and the Effective Available Capacity for the Trading Unit less the official energy Sent-out for the Trading Unit (if this difference is positive), and

- Official energy Sent-out for the Trading Unit >= 0 MW and
- Official energy Sent-out of the Trading Unit <= Maximum Continuous Rating of the Trading Unit;

(3) The Capacity $Qualifying_{Tu}$ for a Demand Side Unit is equal to the Minimum of the Capacity Contracted for Ten-Minute Reserve for the Trading Unit and the Effective Available Capacity of the Trading Unit less the third elbow point on the consumption curve for the Trading Unit (where this difference is positive), and the Effective Available Capacity of the Trading Unit >= third elbow point on the consumption curve for the Trading Unit.

9.9 Day Ahead Energy Payment Above Price Cap (EPM)

(1) An additional day-ahead energy payment (AEPM) shall be paid to a flexible Trading Unit bidding above the Market Price Cap for the energy scheduled in the Unconstrained Schedule at the difference between the Incremental Price offered by the Trading Unit and the System Marginal Price.

$$AEPM_{ij} = \int_0^{SE} \max\left(IP_i - SMP_j, 0\right)$$

where:

AEPM	⇒	Additional Day-Ahead Energy Payment
IP	⇒	Incremental Price Curve (stepwise)
SMP	⇒	System Marginal Price
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Scheduled Energy in Unconstrained Schedule

(2) The additional day-ahead energy payment from the Market Operator shall be accounted for under the Market Balancing Account which shall accrue to the System Operator and be recoverable as an Ancillary Service.

9.10 Publishing Schedule Reports

(1) The MO shall provide to the Market Participants daily Unconstrained Schedule and Constrained Schedule reports by 14h00 of the day preceding the Trading Day.

(2) Each Market Participant shall be informed of the expected Sent-Out or consumption for each Trading Period of the Trading Day as well as capacity allocated to reserves, the prices applicable in each Trading Period (for each Trading Unit and system prices) and the settlements for each Trading Period.

(3) The Market Operator shall provide the scheduled generation and consumption to impacted Network Operators and associated Distribution System Operators.

(4) The MO shall also provide a daily general adequacy report indicating for each Trading Period of the Trading Day the expected demand, reserve requirements, the capacity available to meet the demand, capacity allocated to reserves, the total expected sent-out and consumption determined by the dispatch algorithm as well as the system prices. This report shall be published on the MO website by 14h00 on the day preceding the Trading Day.

(5) The SO shall maintain a daily report on the constraints experienced in scheduling and the deviation between the Unconstrained Schedule and the Constrained Schedule. This report shall be produced and submitted to NERSA on request.

10 INTRA-DAY MARKET

(1) An intra-day market auction clearing will take place at regular six-hour intervals (with gate-closure at 18h00 on the day before the Trading Day, and 0h00, 06h00, 12h00, 18h00 on the Trading Day) to manage re-declarations of Declared Available Capacity and Declared Consumption from Market Participants. All re-declarations submitted prior to the gate-closure of the intra-day market auction will be included in the clearing of the auction. Each intra-day auction will result in revised schedules for Trading Units, with the first iteration on 18h00 on the day before Trading Day, and the fifth iteration on 18h00 on the Trading Day.

(2) The Day-ahead submissions from Market Participants, including price curves, technical parameters and availability, shall be automatically available for the IDM but Market Participants may re-declare Availability for the IDM. A Market Participant may indicate that its day-ahead schedules are not available for re-scheduling in the IDM.

(3) Market Participants can re-declare the Declared Available Capacity and Declared Consumption on each Trading Unit for each remaining hour of the Trading Day up to the gate-closure of the intra-day market.

(4) The MO shall produce new schedules for the expected production or consumption of Market Participants based on the intra-day auction, such that:

i. The intra-day schedule shall reflect the re-declared Declared Available Capacity and Declared Consumption from Market Participants;

ii. The intra-day schedule reflects a constrained schedule without violating network constraints;

iii. Non-willing Market Participants (those that have not allowed their bids and offers to transfer to the IDM) will not be re-scheduled unless the SO imposes additional network constraints;

iv. Instantaneous Reserves scheduled in the day-ahead schedule shall not be adjusted unless the Trading Unit is no longer available for the reserve or has reduced availability to offer the reserve. In this instance other resources may be scheduled for the reserve category to restore the System Operator required capacity for that category. Resources thus scheduled shall earn an additional Reserve Payment for the capacity allocated (at the Reserve Category Price established day-ahead).

(5) The MO shall publish the revised schedule within an hour of the auction clearing.

(6) For the purposes of the IDM a Trading Unit is considered to purchase energy “against instruction” when the Trading Unit:

i. Reduces the Declared Available Capacity in an hour leading to a decrease in scheduled energy for that hour or any other hour impacted by ramping considerations;

ii. Increases the Declared Maximum Consumption in an hour leading to a decrease in scheduled energy (i.e. an increase in the scheduled consumption) for that hour or any other hour impacted by ramping considerations;

(7) For the purposes of the IDM a Trading Unit is considered to purchase energy "on instruction" when the Trading Unit experiences a decrease in scheduled energy (i.e. decreased generation or increased consumption) without changing the Declared Available Capacity or Declared Maximum Consumption (i.e. is scheduled by the Market Operator to respond to the changing circumstances of other Trading Units).

(8) For the purposes of the IDM a Trading Unit is considered to sell energy "against instruction" when the Trading Unit:

i. Increases the Declared Available Capacity in an hour while declared Inflexible leading to an increase in scheduled energy for that hour or any other hour impacted by ramping considerations;

ii. Decreases the Declared Maximum Consumption in an hour leading to an increase in scheduled energy (i.e. an increase in the scheduled consumption) for that hour or any other hour impacted by ramping considerations.

(9) For the purposes of the IDM any Trading Unit is considered to sell energy "on instruction" when the Trading Unit experiences an increase in scheduled energy (i.e. increased generation or decreased consumption) without changing the Declared Available Capacity or Declared Maximum Consumption or in excess of such a change in Declared Available Capacity or Declared Maximum Consumption (i.e. is scheduled by the Market Operator to respond to the changing circumstances of other Trading Units).

(10) An Intra-day Price shall be calculated for each iteration of the Intra-day auction for each Trading Period.

i. If the sum of all IDM schedule changes for the Trading Period (from the prior IDM iteration) is zero then the Intra-day Price for the Trading Period is set at the SMP for the Trading Period;

ii. The Intra-Day Price Stack consists of Trading Units where energy schedules are increased or decreased on instruction in the IDM iteration in the Trading Period. The weighted average of the incremental prices in the Intra-Day Price Stack (calculated as the sum of incremental price * incremental volume (even if negative), divided by the sum of the incremental volume (even if negative)) is the Intra-day Price for the Trading Period for the IDM iteration. If the Intra-day Price exceeds the SMP by more than 5% of the SMP, then the Intra-day Price is set at the SMP+5% for the Trading Period. Similarly if the Intra-day Price is lower than the SMP by less than 5% of the SMP, then the Intra-day Price is set at the SMP-5% for the Trading Period.

(11) The MO shall charge Trading Units for the reduction in energy schedules on instruction arising from each IDM iteration at the minimum of the incremental price offered by the Trading Unit in the day-ahead submissions and the Intra-day Price.

$$IDC_{ijn} = \int_{IDG_{ijn}}^{IDG_{ijn-1}} \min\left(IP_i, IDP_{jn}\right) \text{ where } IDG_{ijn-1} > IDG_{ijn}$$

where:

IDC ⇒ Intra-Day Charge

IP	⇒	Incremental Price Curve (stepwise)
IDP	⇒	Intra-day Price
i	⇒	Specific Trading Unit
j	⇒	Trading Period
n	⇒	Iteration of Intra-Day Auction, where n=0 for the Constrained Schedule from the Day-Ahead Market
IDG	⇒	Intra-Day Auction Schedule (positive for energy produced, negative for energy consumed)

(12) The MO shall pay Trading Units for the increase in energy schedules on instruction arising from each IDM iteration at the maximum of the incremental price offered by the Trading Unit in the day-ahead submissions and the Intra-Day Price.

$$IDPM_{ijn} = \int_{IDG_{ijn-1}}^{IDG_{ijn}} \max\left(IP_i, IDP_{nj}\right) \text{ where } IDG_{ijn} > IDG_{ijn-1}$$

where:

IDPM	⇒	Intra-Day Payment
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
n	⇒	Iteration of Intra-Day Auction, where n=0 for the Constrained Schedule from the Day-Ahead Market
IDG	⇒	Intra-Day Auction Schedule (positive for energy produced, negative for energy consumed)

(13) The MO shall charge Trading Units for the reduction in energy schedules against instruction arising from each IDM iteration at the Intra-day Price for that IDM iteration for that hour.

$$IDC_{ijn} = \max\left(IDG_{ijn-1} - IDG_{ijn}, 0\right) * IDP_{jn}$$

where:

IDC	⇒	Intra-Day Charge
IDP	⇒	Intra-day Price
i	⇒	Specific Trading Unit
j	⇒	Trading Period
n	⇒	Iteration of Intra-Day Auction, where n=0 for the Constrained Schedule from the Day-Ahead Market
IDG	⇒	Intra-Day Auction Schedule (positive for energy produced, negative for energy consumed)

(14) The MO shall pay Trading Units for the increase in energy schedules against instruction arising from each IDM iteration at the Intra-day Price for that IDM iteration for that hour.

$$IDPM_{ijn} = \max\left(IDG_{ijn} - IDG_{ijn-1}, 0\right) * IDP_{jn}$$

where:

IDC	⇒	Intra-Day Charge
IDP	⇒	Intra-day Price
i	⇒	Specific Trading Unit
j	⇒	Trading Period
n	⇒	Iteration of Intra-Day Auction, where n=0 for the Constrained Schedule from the Day-Ahead Market
IDG	⇒	Intra-Day Auction Schedule (positive for energy produced, negative for energy consumed)

(15) If a Trading Unit experiences a change in schedule in any iteration of the IDM auction clearing that reverses any change in schedule due to a prior iteration of the IDM auction clearing, or even reverses an adjustment due to the constrained schedule in the day-ahead market, then the payment arising from the prior iteration, or the adjustment due to the constrained schedule, shall be negated for the portion of the reversal due to the more recent iteration of the IDM auction clearing.

(16) With the exception of (15) above all payments and charges calculated under each iteration of the IDM shall be cumulative.

(17) All payments from the Market Operator or payments to the Market Operator arising from the Intra-day Market shall be accounted for under a Market Balancing Account which shall accrue to the System Operator and be recoverable as an Ancillary Service.

11 REAL-TIME DISPATCH

11.1 Inputs to the Real-time Dispatch Schedule

(1) The SO shall have the ability to determine a real-time dispatch schedule. This Real-time Dispatch Schedule shall be authorized for use by AGC at the SO's discretion. In addition, the SO may determine a revised Constrained Schedule for each Trading Period of the Trading Day based on revised input data during the day.

(2) Revisions to the interconnector schedules may be submitted by the SO based on updated flow report(s) from SAPP acting in its role as the national BRP at any time for the remainder of the Trading Day, indicating the revised expected imports or exports.

(3) Revisions to the availability of Trading Units may be made to the SO at any time for the remainder of the Trading Day, indicating the revised Trading Period availability for the Trading Units.

(4) When dispatchable Generators become aware that there is a constraint limiting their output they must declare that constraint with the reason and the expected time for the constraint to be lifted.

11.2 Dispatch Algorithm

(1) The real-time dispatch algorithm shall adjust the Day-Ahead Constrained Schedule (or a revised Constrained Schedule determined on the Trading Day, following the same methodology as the day-ahead schedule) based on the revised input data and the real-time network model.

(2) This dispatch algorithm shall take into account the transmission and distribution network and generator constraints (including ramping and energy constraints).

11.3 Schedule Reports

(1) Each Trading Unit shall be informed of the expected Sent-Out and capacity allocated to reserves for each Trading Period of the remainder of the Trading Day as determined in the revised Constrained Schedule determined on the Trading Day.

(2) The SO shall also provide a revised general adequacy report indicating the expected demand, reserve requirements, the capacity available to meet the demand, capacity allocated to reserves and the total expected Sent-out determined by the revised Constrained Schedule.

(3) The SO shall maintain a daily report on the revised Constrained Schedule (where applicable) and the real-time dispatch schedule. This report shall be produced and submitted to NERSA on request.

11.4 Dispatch Instructions

(1) The SO shall maintain an electronic log of system conditions at regular intervals as well as the integrated system information per Trading Period. This log shall

include the conditions relating to frequency, generation, interconnector flows, corridor flows and voltages.

(2) These interval data shall be held by the SO for five years at which time the four-second data may be deleted. The integrated data per Trading Period shall be maintained for five calendar years from the day of dispatch.

(3) The system condition log shall be utilised for audit purposes to support the reasons for dispatch instructions.

(4) The SO shall issue dispatch instructions to qualifying Trading Units to indicate the required sent-out or consumption level.

(5) Non-dispatchable Trading Units may be expected to follow specific dispatch instructions in the case of an Emergency Operating Condition in the NIPS or the existence of a need for Load Reduction. These instructions must be duplicated into a separate electronic log for commercial reconciliation purposes and will constitute an instruction in terms of the Balancing Mechanism.

(6) Should Load Reduction be necessary the SO shall, in issuing such instruction, consider the total economic cost.

(7) These dispatch instructions shall be logged by the SO, taking the form of:

(a) The official Trading Unit name (as in the Registry);

(b) The date and time of the dispatch instruction;

(c) The expected Sent-Out or Consumption level

(8) An audit mechanism must be maintained to allow for verification of the logged details.

(9) The most recent intra-day market schedule shall constitute a dispatch instruction unless replaced by a manual or automatic dispatch instruction from the SO.

(10) If the SO has issued a dispatch instruction to a Trading Unit that replaced the most recent intra-day market schedule, the SO must continue to issue dispatch instructions before the start of each Trading Period to indicate the level of sent-out or Consumption from the Trading Unit.

(11) The Instructed Energy for each Trading Unit for each Trading Period shall be calculated based on the System Operator dispatch instructions, taking ramping constraints into account. The Instructed Energy shall form the basis for payments in the Balancing Mechanism.

12 MARKET PARTICIPANT METERING AND RECONCILIATION

12.1 Metering installations

(1) Market Participants shall ensure that metering installations conform to the Metering Code;

(2) The metering installations shall be connected at the Point of Delivery as defined in the standing data for each Trading Unit;

12.2 Metering data

(1) The MO's Metering Service Provider shall be able to remotely interrogate all metering installations and verify metering data;

(2) Metering reports associated with the metering installations shall be produced daily with verified metering data finalised within seven days after the Trading Day.

12.3 Reconciliation of data

(1) The MO shall ensure that all metered energy imported or exported at each metering point is allocated such that the energy imported at each metering point to one BRP is equal to the energy exported from another BRP.

(2) The net energy imports to a Trading Unit (as defined by the net imports at each metering point allocated in the Registry) shall constitute the actual energy position of the Trading Unit for the purposes of the Balancing Mechanism.

13 BALANCING MECHANISM

13.1 Balancing Stacks

(1) Within seven days of the end of the Trading Day, all dispatch instructions shall be logged and verified, and all metering data for every Trading Unit shall be collated and verified. When the Market Operator produces the Indicative Settlements it shall also determine balancing stacks for each hour of the Trading Day, one for Balancing Energy Sold to the SO and another for Balancing Energy Bought from the SO.

(2) The Balancing Energy Sold stack is derived from the price curves of Trading Units. Only Trading Units that are declared available and flexible for the Trading Period are included in the Balancing Energy Sold stack. The capacity available is limited at the minimum point by the sum of the intra-day scheduled energy and the intra-day scheduled instantaneous reserve, and on the maximum point by the least of the declared availability and the effective available capacity of the Trading Unit. Energy increments meeting these requirements and constraints are stacked in increasing order of energy cost.

(3) The Balancing Energy Bought stack is derived from the price curves of Trading Units. Only Trading Units that are declared available and flexible for the Trading Period are included in the Balancing Energy Bought stack. The capacity available is limited at the maximum point by the intra-day scheduled energy, and on the minimum point by the Minimum Stable Generation point. Energy increments meeting these requirements and constraints are stacked in decreasing order of energy cost.

13.2 Imbalances

(1) For each Trading Period of the Trading Day the following shall be determined:

(a) The instructed energy output for each Trading Unit for the Trading Period, based on the dispatch instructions given by the SO (adjusted for ramping constraints);

(b) The actual metered energy output or consumption for each Trading Unit.

(2) The total Imbalance Energy Bought for the Trading Period is determined as the sum of all deviations of the actual metered energy from the instructed energy where the instructed energy exceeds the actual energy.

(3) The total Imbalance Energy Sold for the Trading Period is determined as the sum of all deviations of the actual metered energy from the instructed energy where the actual energy exceeds the instructed energy.

13.3 Applicable Balancing Payments

(1) The Balancing Payment calculations shall be published by the Market Operator by 17h00 on the day following the Trading Day.

(2) A Trading Unit may have more than one Balancing Payment apply in any Trading Period (specifically when trading above the Market Price Cap) and these payments are cumulative and not mutually exclusive.

(3) The Contracted Energy for each Trading Unit in a particular Trading Period is the energy scheduled for the Trading Unit in the more recent Intra-day Market.

(4) All payments from the Market Operator or payments to the Market Operator arising from the Balancing Mechanism shall be accounted for under a Market Balancing Account which shall accrue to the System Operator and be recoverable as an Ancillary Service.

13.4 Balancing Payment (On Instruction)

(1) Ex-Post (or 'after the fact') Balancing Settlement calculations shall be performed daily per Trading Period of the Trading Day and shall be paid as Rand per Trading Period (positive for payments from the MO to Balance Responsible Parties; negative for payments from Balance Responsible Parties to the MO).

(2) The SO issues dispatch instructions to Trading Units. The MO will pay these Trading Units that respond to the instructions (or receive payment from these resources) based on the day-ahead energy prices submitted by the Trading Unit.

(3) Other deviations (between actual generation or consumption and intra-day scheduled generation or consumption) shall be paid to the MO (or be paid by the MO) based on calculated Balancing Prices for each Trading Period.

13.4.1 Instructed Energy

(1) Instructed Energy (IE) is the energy volume calculated from the SO's Dispatch Instructions (in the form of a tuple (t, v, R), with t being the time (in whole minutes) at which the Trading Unit should be at instantaneous energy sent-out volume v (in MW) , and R being the ramping rate applicable to the type of instruction (in MW/min)) in each Trading Period.

(2) Treating each Trading Period individually, with a start time S and end time E, and day-ahead schedules applied as an instruction with t = S unless replaced by a new dispatch instruction;

1. In each Trading Period determine:
    a. the last instruction prior to the start of the Trading Period (I_0) as the instruction with max t where t < S
    b. the list of instructions effective in the Trading Period (I_1 … In) with t >= S and t < E.
    c. the first instruction after the end of the Trading Period (I_{n+1}) as the instruction with min t where t >= E
2. Looping through all instructions 1..n+1,
    a. Calculate r in each case as the start time of the ramp to reach volume v such that

$$r_i = t_i - \frac{v_i - v_{i-1}}{R}$$

    b. Determine the Instructed Energy (i.e. instructed volume) as:

$$IE = \frac{1}{M}\sum_{i=1}^{n+1} v_{i-1}(\min(t_i, E) - \max(t_{i-1}, S)) + Ramp(I_i)$$

Where

$$Ramp(I_i) = \begin{cases} \frac{1}{2}(t_i - r_i)(v_i - v_{i-1}) & if\ S \le r_i\ and\ t_i < E \\ \frac{1}{2}(t_i - r_i)(v_i - v_{i-1}) - \frac{1}{2}(S - r_i)^2 R * sgn(v_i - v_{i-1}) & if\ r_i < S\ and\ t_i < E \\ \frac{1}{2}(E - r_i)^2 R * sgn(v_i - v_{i-1}) & if\ S \le\ r_i < E\ \ and\ t_i > E \end{cases}$$

M = number of minutes in the Trading Period (i.e. 60)

(3) The calculated Instructed Energy (IE) may be superseded by an agreed or adjudicated Instructed Energy as an outcome of a dispute regarding the value. The DRB may adjudicate a value for Instructed Energy where the dispute is not resolved between the Balance Responsible Party and SO.

13.4.2 Additional Sales to the Balancing Mechanism (On Instruction)

(1) Energy supplied to the Balancing Mechanism on instruction from the SO will be paid at the maximum of the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price.

$$BPM_{ij} = \int_{SE}^{\min(IE,AE)} \max(IP_i, SMP_j)$$

where:

BPM	⇒	Balancing Payment
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.4.3 Additional Purchases from the Balancing Mechanism (On Instruction)

(1) Energy purchased from the Balancing Mechanism on instruction from the SO will be bought at the minimum of the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price.

$$BPM_{ij} = -\int_{\max(IE,AE)}^{SE} \min(IP_i, SMP_j)$$

where:

BPM	⇒	Balancing Payment

IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.4.4 Additional Purchases from the Balancing Mechanism (On Instruction) above Market Price Cap

(1) Energy purchased from the Balancing Mechanism on instruction from the SO for energy above the Market Price Cap will be bought at the difference between the incremental price offered by the Trading Unit in the day-ahead submissions and the Market Price Cap.

$$BPM_{ij} = -\int_{\min(IE,AE)}^{SE} \max(IP_i - MPC, 0)$$

where:

BPM	⇒	Balancing Payment
IP	⇒	Incremental Price Curve (stepwise)
MPC	⇒	Market Price Cap
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.5 Balancing Payment (within MAB)

(1) Ex-Post Balancing Settlement calculations shall be performed daily per Trading Period of the Trading Day and shall be Rand per Trading Period.

(2) For the purposes of Balancing calculations, the MAB for all Balance Responsible Parties is set by the MGC and reflected in Annexure 2.

(3) Energy purchased from or supplied to the Balancing Mechanism within the MAB shall be deemed to be against instruction for the purposes of calculating the Balancing Prices but shall not incur penalties inherent in these prices.

(4) The application of the MAB is negated by an instruction from the System Operator and shall only apply where such an instruction is not given to the Trading Unit.

13.5.1 Additional Sales to the Balancing Mechanism

(1) Energy supplied to the Balancing Mechanism within the MAB relative to Contracted Energy (with no instruction applicable) will be paid at the System Marginal Price set for the Trading Period in the day-ahead market.

$$\text{If } SE_{ij} <= AE_{ij} <= (1+MAB)*SE_{ij}$$
$$BPM_{ij} = (AE-SE_{ij}) * SMP_j$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy

13.5.2 Additional Purchases from the Balancing Mechanism

(1) Energy purchased from the Balancing Mechanism within the MAB relative to Contracted Energy (with no instruction applcable) will be bought at the System Marginal Price set for the Trading Period in the day-ahead market.

$$\text{If } (1-MAB)*SE_{ij} <= AE_{ij} <= SE_{ij}$$
$$BPM_{ij} = - (SE_{ij}-AE_{ij}) * SMP_j$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.5.3 Additional Sales to the Balancing Mechanism above Market Price Cap (within MAB)

(1) Energy supplied to the Balancing Mechanism above the Market Price Cap within the MAB relative to the Contracted Energy (with on instruction applicable) will be paid at the difference between the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price set for the Trading Period in the Day-Ahead Market.

If $SE_{ij} <= AE_{ij} <= (1+MAB)*SE_{ij}$

$$BPM_{ij} = \int_{SE}^{AE} \max\left(IP_i - SMP_j, 0\right)$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
IP	⇒	Incremental Price Curve (stepwise)
SMP	⇒	System Marginal Price
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.5.4 Additional Purchases from the Balancing Mechanism above Market Price Cap (within MAB)

(1) Energy purchased from the Balancing Mechanism above the Market Price Cap within the MAB relative to Contracted Energy (with no instruction applicable) will be bought at difference between the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price set for the Trading Period in the Day-Ahead Market.

If $(1-MAB)*SE_{ij} <= AE_{ij} <= SE_{ij}$

$$BPM_{ij} = -\int_{AE}^{SE} \max\left(IP_i - SMP_j, 0\right)$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
IP	⇒	Incremental Price Curve (stepwise)
SMP	⇒	System Marginal Price
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy

13.6 Calculation of Balancing Prices

(1) The Balancing Prices shall be calculated ex-post, shall be prices per Trading Period and calculated for all Trading Periods of the availability declaration periods of day ‘n’. Preliminary balancing prices shall be calculated on days ‘n+1’ through ‘n+6’. The official prices will be calculated on day ‘n+7’.

(2) There shall be two Balancing Prices calculated for each Trading Period of the availability declaration periods of day ‘n’, one for the sale of energy to the Balancing Mechanism, the other for the purchase of energy from the Balancing Mechanism.

(3) The Out of Merit Energy to be excluded from the Balancing Energy Sold Stack will be set by the MGC and reflected in Annexure 2.

13.7 Balancing Price (Buying)

(1) The total volume of imbalance energy bought is the sum of the energy deviations where Trading Units are below contract. This imbalance is used in calculating the Balancing Price (Buying).

(2) The most expensive increments are excluded from the Balancing Energy Sold Stack up to the volume where the sum of the incremental volume of excluded increments equals the Out of Merit Energy.

(3) Trading Units are also excluded from the Balancing Energy Sold Stack when the incremental price of the Trading Unit exceeds the Market Price Cap in the instances where such Trading Units remain following the application of the Out of Merit Energy.

(4) Trading Units included on the Balancing Energy Sold Stack are utilised for the purposes of calculating the Balancing Price (Buying) in order of ascending energy price. The increments offered in the stack are used in the calculation up to the point where the stack is exhausted or the imbalance is satisfied (whichever comes first). The weighted average of these incremental prices (calculated as the sum of incremental price * incremental volume, divided by the sum of the incremental volume) is the indicative Balancing Price (Buying), used to provide an indication of the cost of balancing. If the indicative Balancing Price (Buying) is less than the SMP, the Balancing Price (Buying) is set to the SMP.

13.8 Balancing Price (Selling)

(1) The total volume of imbalance energy sold is the sum of the energy deviations against instruction where Trading Units are above contract. This imbalance is used in calculating the Balancing Price (Selling).

(2) Trading Units included on the Balancing Energy Bought Stack are utilised for the purposes of calculating the Balancing Price (Selling) in order of descending energy price. The increments offered in the stack are used in the calculation up to the point where the stack is exhausted or the imbalance is satisfied (whichever comes first). The weighted average of these incremental prices (calculated as the sum of incremental price * incremental volume, divided by the sum of the incremental volume) is the indicative Balancing Price (Selling), used to provide an indication of the cost of balancing. If the indicative Balancing Price (Selling) is less than the SMP, the Balancing Price (Selling) is set to the SMP.

13.9 Balancing Payment (Against Instruction)

(1) Ex-Post Balancing Settlement calculations shall be performed daily per Trading

Period of the Trading Day and shall be Rand per Trading Period (positive for payments from the MO to the BRP; negative for payments from the BRP to the MO).

13.9.1 Additional Sales to the Balancing Mechanism (Against Instruction)

(1) Energy supplied to the Balancing Mechanism (above the MAB) against instruction from the SO will be paid at the minimum of the Balancing Price (Selling) for the Trading Period and the System Marginal Price for the Trading Period.

$$\text{If } AE_{ij} > SE_{ij}*(1+MAB) \text{ and } AE_{ij} > IE_{ij}$$
$$BPM_{ij} = (AE_{ij} - \max(IE_{ij}, SE_{ij})) * \min(BPS_j, SMP)$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy
BPS	⇒	Balancing Price (Selling)
SMP	⇒	System Marginal Price

13.9.2 Additional Purchases from the Balancing Mechanism (Against Instruction)

(1) Energy purchased from the Balancing Mechanism against instruction from the SO will be bought at the maximum of the Balancing Price (Buying) for the Trading Period and the System Marginal Price for the Trading Period.

$$\text{If } AE_{ij} < SE_{ij}*(1-MAB) \text{ and } AE_{ij} < IE_{ij}$$
$$BPM_{ij} = -[(\min(IE_{ij}, SE_{ij}) - AE_{ij}) * \max(BPB_j, SMP)]$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy

AE	⇒	Actual Energy
IE	⇒	Instructed Energy
BPB	⇒	Balancing Price (Buying)
SMP	⇒	System Marginal Price

13.9.3 Additional Purchases from the Balancing Mechanism above Market Price Cap (Against Instruction)

(1) Energy purchased from the Balancing Mechanism against instruction from the SO above the Market Price Cap will be bought at the difference between the incremental price offered by the Trading Unit in the day-ahead submissions and the Balancing Price (Buying) for the Trading Period.

If $AE_{ij} < SE_{ij}*(1\text{-}MAB)$ and $AE_{ij} < IE_{ij}$

$$BPM_{ij} = -\int_{AE}^{\min(IE,SE)} \max(IP_i - BPB_j, 0)$$

where:

BPM	⇒	Balancing Payment (this can be cumulative with prior calculations)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy
BPB	⇒	Balancing Price (Buying)
IP	⇒	Incremental Price

13.10 Balancing Groups

(1) Where a BRP has designated Trading Units to a Balancing Group the other Balancing Payments shall not apply. The Balancing Payments for each Trading Period for Trading Units within a Balancing Group shall be determined as per this Section.

(2) Where the SO has flagged the exports from or imports to a Network Zone as constrained the Trading Units impacted by the direction of the constraint (additional balancing energy where exports from a Network Zone are flagged, or reduced balancing energy where imports to a Network Zone are flagged) may not be included in the Balancing Group for the period in which the constraint applies.

(3) Where the sum of Actual Energy for the Trading Units in the Balancing Group in a Trading Period is less than the sum of Scheduled Energy for the Trading Units in the Balancing Group in the Trading Period, then

a) If the sum of Actual Energy for the Trading Units in the Balancing Group in the Trading Period is greater than or equal to (1-MAB)

multiplied by the sum of Scheduled Energy for the Trading Units in the Balancing Group for that Trading Period, then for each Trading Unit in the Balancing Group the energy difference in the Balancing Mechanism will be paid at the System Marginal Price set for the Trading Period.

$$BPM_{ij} = (AE_{ij}-SE_{ij}) * SMP_j$$

where:

BPM	⇒	Balancing Payment
i	⇒	Specific Trading Unit in the Balancing Group
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy

b) If the sum of Actual Energy for the Trading Units in the Balancing Group in the Trading Period is less than (1-MAB) multiplied by the sum of Scheduled Energy for the Trading Units in the Balancing Group for that Trading Period, then:

   a. The Balancing Group instructed response for the Trading Period is calculated as the sum of Scheduled Energy for the Trading Units in the Balancing Group for the Trading Period less the maximum of the Actual Energy for the Trading Units in the Balancing Group for that Trading Period and Instructed Energy for the Trading Units in the Balancing Group for that Trading Period. Should the calculation be negative then the Balancing Group instructed response for the Trading Period is set to zero.
   b. The Balancing Group instructed response for the Trading Period is allocated to each Trading Unit and increment within the Trading Unit from the highest incremental price to lowest incremental price where the Scheduled Energy of the Trading Unit in the Trading Period is greater than the maximum of the Actual Energy for the Trading Unit in the Trading Period and the Instructed Energy for the Trading Unit in the Trading Period.
   c. If the remaining Balancing Group instructed response for the Trading Period is less than the applicable increment for a Trading Unit that meets the above criteria then only the remaining Balancing Group instructed response for the Trading Period shall apply to the Trading Unit.
   d. If the Balancing Group instructed response for the Trading Period is fully allocated to higher ranked Trading Unit increments then all Trading Units meeting the criteria but lower in the ranking shall not have an allocation for the Balancing Group instructed response.

e. The payment for each Trading Unit in the Balancing Group is set as the sum of:
    i. The energy purchased from the Balancing Mechanism on instruction (incorporating the allocation of the Balancing Group instructed response to the Trading Unit) at the minimum of the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price; and
    ii. The energy purchased from the Balancing Mechanism against instruction for the Trading Unit at the maximum of the Balancing Price (Buying) and System Marginal Price applied to the uninstructed energy which is Actual Energy of the Trading Unit in the Trading Period less the sum of the Scheduled Energy of the Trading Unit and the allocated of the Balancing Group instructed response to the Trading Unit.

$$BPM_{ij} = -\int_{\max(IE,AE,SE-alloc)}^{SE} \min\left(IP_i, SMP_j\right) + \left(AE - (SE + alloc)\right) * \max\left(BPB, SMP\right)$$

where:

BPM	⇒	Balancing Payment
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy
alloc	⇒	Allocation of the Balancing Group instructed response to the Trading Unit
BPB	⇒	Balancing Price (Buying)

f. If a Trading Unit in the Balancing Group has an incremental price higher than the Market Price Cap then there is an additional Balancing Payment from the Trading Unit for the difference between the incremental price and Balancing Price (Buying) for the Trading Period for the energy purchased from Balancing Mechanism.

$$BPM_{ij} = -\int_{AE}^{SE} \max\left(IP_i - BPB_j, 0\right)$$

where:

BPM	⇒	Balancing Payment (cumulative with prior calculation)

i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
BPB	⇒	Balancing Price (Buying)
IP	⇒	Incremental Price

(4) Where the sum of Actual Energy for the Trading Units in the Balancing Group in a Trading Period is more than the sum of Scheduled Energy for the Trading Units in the Balancing Group in the Trading Period, then

a) If the sum of Actual Energy for the Trading Units in the Balancing Group in the Trading Period is less than or equal to (1+MAB) multiplied by the sum of Scheduled Energy for the Trading Units in the Balancing Group for that Trading Period, then for each Trading Unit in the Balancing Group the energy difference in the Balancing Mechanism will be paid at the System Marginal Price set for the Trading Period.

$$BPM_{ij} = (AE_{ij}-SE_{ij}) * SMP_j$$

where:

BPM	⇒	Balancing Payment
i	⇒	Specific Trading Unit in the Balancing Group
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy

b) If the sum of Actual Energy for the Trading Units in the Balancing Group in the Trading Period is greater than (1+MAB) multiplied by the sum of Scheduled Energy for the Trading Units in the Balancing Group for that Trading Period, then:

a. The Balancing Group instructed response for the Trading Period is calculated as the minimum of the Actual Energy for the Trading Units in the Balancing Group for that Trading Period and Instructed Energy for the Trading Units in the Balancing Group for that Trading Period less the sum of Scheduled Energy for the Trading Units in the Balancing Group for the Trading Period. Should the calculation be negative then the Balancing Group instructed response for the Trading Period is set to zero.
b. The Balancing Group instructed response for the Trading Period is allocated to each Trading Unit and increment within the Trading Unit from the lowest incremental price to highest incremental price where the Scheduled Energy of the Trading

Unit in the Trading Period is less than the minimum of the Actual Energy for the Trading Unit in the Trading Period and the Instructed Energy for the Trading Unit in the Trading Period.

c. If the remaining Balancing Group instructed response for the Trading Period is less than the applicable increment for a Trading Unit that meets the above criteria then only the remaining Balancing Group instructed response for the Trading Period shall apply to the Trading Unit.
d. If the Balancing Group instructed response for the Trading Period is fully allocated to lower ranked Trading Unit increments then all Trading Units meeting the criteria but higher in the ranking shall not have an allocation for the Balancing Group instructed response.
e. The payment for each Trading Unit in the Balancing Group is set as the sum of:
    i. The energy sold to the Balancing Mechanism on instruction (incorporating the allocation of the Balancing Group instructed response to the Trading Unit) at the maximum of the incremental price offered by the Trading Unit in the day-ahead submissions and the System Marginal Price; and
    ii. The energy sold to the Balancing Mechanism against instruction for the Trading Unit at the minimum of the Balancing Price (Selling) and System Marginal Price applied to the uninstructed energy which is Actual Energy of the Trading Unit in the Trading Period less the sum of the Scheduled Energy of the Trading Unit and the allocated of the Balancing Group instructed response to the Trading Unit.

$$BPM_{ij} = \int_{SE}^{\min(IE, AE, SE+alloc)} \max\left(IP_i, SMP_j\right) + \left(AE - (SE + alloc)\right) * \min(BPS, SMP)$$

where:

BPM	⇒	Balancing Payment
IP	⇒	Incremental Price Curve (stepwise)
i	⇒	Specific Trading Unit
j	⇒	Trading Period
SE	⇒	Contracted Energy
AE	⇒	Actual Energy
IE	⇒	Instructed Energy
alloc	⇒	Allocation of the Balancing Group instructed response to the Trading Unit
BPS	⇒	Balancing Price (Selling)

14 SETTLEMENT REPORTS

14.1 Schedule Reports

(1) The MO shall provide the day-ahead and intra-day scheduling and settlement reports to Market Participants as required under Sections 9.10 and 11.3.

(2) These reports shall be kept by the Market Operator for a minimum of three full calendar years from the day of operation.

14.2 Dispatch Reports

(1) The SO shall provide dispatch instruction reports to Market Participants covering all dispatch instructions issued to the Market Participant's Trading Units. This report shall cover the day-ahead and revised schedules along with the real-time dispatch schedule and dispatch instructions for each Trading Unit for each Trading Period.

(2) The SO shall provide a dispatch instruction report to NERSA to cover all instructions to all Trading Units along with the day-ahead and intra-day schedules and the real-time dispatch schedule and dispatch instructions at five-minute intervals including the AGC settings and the tie-line actuals and contracts per Trading Period.

(3) The actual metered energy imports and export from each Trading Unit and for each Trading Period (or 5 min interval where metered) shall also be included in the above report.

14.3 SO Reports to NERSA

(1) The SO shall on a monthly basis provide NERSA with the following system data in a format approved by NERSA on a per Trading Period basis:

(a) The Sent-Out for each Generating Unit for which the SO has Telemetry. For storage units, pumping or charging energy is to be reported separately;

(b) The use (sent-out energy) of emergency generation;

(c) The use of demand response capability;

(d) The tie-line actual and contracted MW;

(e) System demand;

(f) Load Reduction and Generator Curtailment;

(g) International imports and exports.

(2) The SO shall on a monthly basis provide NERSA with a curtailment report detailing the Generator Curtailment instructions and Load Reduction instructions issued to BRPs with the reasons and cost.

15 FINANCIAL SETTLEMENT

15.1 Settlement Items

(1) The MO shall carry out or procure settlements in accordance with this Market Code of the following amounts:

(a) Trading Payments due to Market Participants and Balance Responsible Parties in respect of their registered Trading Units for each Billing Period;

(b) Trading Charges payable by Market Participants and Balance Responsible Parties in respect of their registered Trading Units for each Billing Period;

(c) Charges to Market Participants in respect of their registered Trading Units for Unsecured Bad Debt;

(d) Fixed Market Operator Charges payable by Market Participants in respect of their registered Trading Units for each year or period to which the Fixed Market Operator Charge relates; and

(e) Variable Market Operator Charges payable by Market Participants in respect of their Trading Units for each Billing Period.

(2) All of the payments and charges set out in the paragraph above shall be calculated in accordance with this Market Code and, except where otherwise stated, shall exclude VAT.

(3) The MO shall, through its contract with the Market Bank, administer the banking services required pursuant to this Market Code for Market Participants. The Market Operator and each Market Participant shall, in each case in relation to those banking arrangements that it requires in order to comply with this Market Code, procure, use, make available and administer such banking arrangements.

(4) The Market Bank shall be a bank which is appointed by the MO according to the rules of this Market Code.

(5) The Market Operator shall establish and operate in accordance with this Market Code a Trading Clearing Account at a branch of the Market Bank to and from which all Trading and Capacity Payments calculated in accordance with this Market Code are to be made.

(6) Each Trading Clearing Account shall be an interest bearing account.

(7) Any Interest received on the Trading Clearing Accounts shall accrue to the Market Participant.

15.2 Provision of Cash Collateral

(1) A Market Participant may at any time provide a cash deposit as part of its Required Credit Cover as permitted. Where a Market Participant decides to provide such a cash deposit, then the Market Participant shall establish and maintain a Collateral Reserve Account with the Market Bank. Each Collateral

Reserve Account shall be an interest bearing account. If a Market Participant chooses to establish a Collateral Reserve Account as part of its Required Credit Cover, then it must provide to the MO such documents and in such form as the MO may require from time to time.

(2) The Collateral Reserve Account in relation to each relevant Market Participant shall contain the cash element of that Market Participant's Posted Credit Cover on the following terms:

(a) the Collateral Reserve Account shall be in the sole name of the MO with the designation "Market Collateral Reserve Account relating to [Insert Market Participant Details]";

(b) the Market Participant and the MO shall have irrevocably instructed the Market Bank to make payment against the sole instruction of the MO in accordance with this Market Code; and

(c) to give effect to the provisions of this Market Code in relation to Collateral Reserve Accounts, with effect from the time of payment into the relevant Collateral Reserve Account, the relevant Market Participant thereby charges all sums paid into and accruing on that account by way of first fixed charge over cash at the Market Bank in favour of the MO as agent and trustee for it and the Market Creditors to secure the relevant Market Participant's payment obligations under this Market Code.

(3) Where, at any time, a Market Participant (or Applicant, as applicable) wishes to establish a Collateral Reserve Account and, where appropriate, the MO shall require the Market Participant (or Applicant, as applicable) to complete and sign the particulars of charge in respect of such Collateral Reserve Account within such timelines as may be specified by the MO, having regard to any applicable time limit for the registration. Without prejudice to the foregoing, the MO shall, unless the relevant Market Participant undertakes otherwise, register the prescribed particulars with regard to the establishment of each Collateral Reserve Account pursuant to prevailing banking legislation, as appropriate, and/or at such other registry or registries as may be appropriate.

(4) The Trading Clearing Accounts shall be established and maintained in the name of the MO. The cash in and rights relating to each Trading Clearing Accounts, opened and any balance in any of the accounts shall be held on trust by the MO without obligation to invest in accordance with the provisions of this section. The MO shall not commingle any funds standing to the credit of the Trading Clearing Accounts, or any Collateral Reserve Account with its own personal or any other funds.

(5) Notwithstanding the previous paragraph, the MO shall hold the trust accounts as provided for in this Section subject to its entitlement to make payments into and out of the Trading Clearing Accounts for the purpose of settling any costs.

(6) Except as expressly provided for in this Market Code, no Party or Market Participant shall enter into any arrangements which assign or charge or purport to assign or charge any interest any Party or Market Participant may have in any Trading Clearing Account or Collateral Reserve Account.

(7) The MO shall procure that an electronic funds transfer (EFT) facility with the Market Bank is provided to enable it to make all payments to Market Participants

under this Market Code. Payments shall only be made by the MO and Market Participants in the Market through an EFT facility.

(8) The EFT facilities procured by the MO shall be consistent with standard banking practice.

(9) In procuring the establishment of the EFT facility, the MO shall use its reasonable endeavours to ensure that the use of the EFT facility does not impose unreasonable restrictions on the Market Participants' normal banking arrangements.

(10) Each Party (or Applicant, as applicable) shall give to the MO in accordance with the registration requirements, details of the bank account or bank accounts to which the MO is instructed to make payments pursuant to this Market Code to such Party's Market Participant(s), and shall provide to the MO such further information in relation to such bank account or bank accounts as the MO may reasonably request. Each Party shall establish and maintain such a bank account at a bank. Where a Party or Market Participant changes the bank account or bank accounts to which payments are made pursuant to this Market Code, it shall inform the MO and provide details of the new bank account or bank accounts in writing. The Market Operator shall not be responsible for any loss to any Party or Market Participant where the MO has not been informed by the relevant Party or Market Participant of any change in bank account details.

(11) The MO shall maintain detailed ledger accounts of all funds held in the Trading Clearing Accounts, Collateral Reserve Accounts and all other bank accounts held by it at the Market Bank showing all monies paid in and paid out in respect of each Party and, where requested by a Party, the MO shall provide full details of all such payments and funds in relation to such Party only and shall keep all information in respect of each Party confidential. Notwithstanding the foregoing, the MO shall be entitled to disclose any information or data in relation to any Trading Clearing Account or Collateral Reserve Account held at the Market Bank to the Market Auditor or Responsible Authority where required or where otherwise required by law.

15.2.1 Establishment of Trust Accounts

(1) The MO shall hold all funds in the Trading Clearing Accounts and such rights (including, without limitation, all rights of action) as shall from time to time be vested in it with regard to payments due and owing by Market Participants or with regard to the provision of Credit Cover by each Market Participant including:

(a) all monies from time to time standing to the credit of each Trading Clearing Account relating to any Trading Period;

(b) all rights of the MO to call for and enforce payment of amounts owing under this Market Code (including, for the avoidance of doubt, any Shortfall or Unsecured Bad Debt) or to make a Credit Call; and

(c) any interest receivable in respect of any amounts due pursuant to this Market Code relating to any Trading Period,

on trust for Creditors in accordance with their individual respective proportionate entitlements as they arise in accordance with this Market Code (or to the extent that any Credit Cover shall relate to any Variable Market

Operator Charge, on trust for the MO in accordance with this Market Code). Upon termination of the said trusts, any residual balance after satisfaction of the entitlement of all Creditors shall be held for all Market Participants in accordance with their individual respective proportionate entitlements as they arise in accordance with this Market Code.

(2) The respective rights of the Creditors to the assets held by the MO in trust in the Trading Clearing Accounts shall be determined in accordance with this Market Code and in accordance with the following principles:

(a) the extent of each Creditor's individual rights shall be deemed to consist of the aggregate of the claims (to the extent not paid or otherwise settled) of such Creditor in respect of each Trading Period; and

(b) the assets referred to above shall be deemed to consist of a series of funds, each fund representing the rights or monies owed, paid, held or otherwise attributable to each Trading Period in relation to Trading Payments and Capacity Payments.

(3) The MO shall not be obliged to segregate moneys into separate funds.

(4) Each Market Participant which has funds remitted by it for the credit of a relevant Collateral Reserve Account agrees that none of the remittances shall be repayable (or capable of being repaid) to it, except where provided otherwise in accordance with the provisions of this Market Code, until Deregistration of the Market Participant's Trading Unit(s) becomes effective in accordance with this Market Code and, and the Market Participant has paid in full all amounts actually or contingently owed by the relevant Market Participant to any Creditor or the MO pursuant to this Market Code.

(5) Each Market Participant with a Collateral Reserve Account undertakes not to seek withdrawal of any funds to which it may otherwise be entitled in the relevant Collateral Reserve Account. The MO shall reject any purported notice of withdrawal.

(6) If a Market Participant is not in default in respect of any amount owed to a Market Creditor, then:

(a) the MO shall transfer quarterly to the relevant Market Participant the interest credited to the relevant Collateral Reserve Account unless the Market Participant requests otherwise;

(b) the MO shall transfer to such Market Participant within two business days after a written request from such Market Participant (exclusive of the day of request) any amount of the balance which exceeds the amount which such Market Participant has agreed to maintain in the relevant Collateral Reserve Account from time to time in accordance with this Section and this Market Code, provided that the Market Participant at all times maintains its Required Credit Cover;

(c) the Market Participant shall be entitled to change the composition of its Posted Credit Cover in satisfying the Required Credit Cover provided any reduction in any amount standing to the credit of the relevant Collateral Reserve Account does not result in a breach of the Required Credit Cover.

(7) Except as expressly provided for in this Market Code, each Party and Market Participant waives any right it might otherwise have to set off against any obligation owed to the MO, the Market Bank or any other Party or Market Participant any claims such Party or Market Participant may have to or in respect of any monies standing to the credit of the relevant Trading Clearing Account, or Collateral Reserve Account as applicable.

(8) No Party or Market Participant shall have any claim against the MO for breach of trust or fiduciary duty by the MO under this Market Code except in the case of reckless or wilful misconduct.

15.3 Description of Timelines

15.3.1 Settlement Day

(1) All Settlement of Trading Payments and Trading Charges are based on a Settlement Day.

(2) The terminology “SD+xBD” means during the business day which ends x business days after the end of the Settlement Day.

15.3.2 Billing Period

(1) All Trading Payments and Trading Charges shall be aggregated on a Billing Period basis.

(2) The terminology “BP+xBD” means during the business day which ends x business days after the end of the Billing Period.

(3) The terminology “BP+xM” means during the last Month which ends x Months after the end of the Billing Period.

15.3.3 Settlement Calendar

(1) The Market Operator shall publish, four months prior to the start of each Year, a Settlement Calendar for all days in the coming Year which shall include the following information:

(a) details of non-business days;

(b) details of:

i. when Indicative Settlement Statements are due (for each type of Settlement Statement);

ii. when Initial Settlement Statements are due (for each type of Settlement Statement);

iii. each Invoice issue date (for each type of Invoice);

iv. the Invoice due date (for each type of Invoice);

v. the Self Billing Invoice issue date (for each type of Self Billing Invoice);

vi. the Self Billing Invoice due date (for each type of Self Billing Invoice); and

vii. the Timetabled M+1 Settlement Reruns for relevant Billing Periods.

15.3.4 Invoices, Self-Billing Invoices and Debit Notes

(1) The MO shall produce and issue Invoices and Self Billing Invoices for Trading Payments and Trading Charges in accordance with the following:

(a) Indicative Settlement Statements for Trading Payments and Trading Charges shall, in respect of each Settlement Day in a Billing Period, be produced and issued to all Market Participants in respect of their Units by 17:00 on Settlement Day + 1WD;

(b) the Data Verification Period for Trading Payments and Trading Charges commences at the time of issue of the Ex-Post Indicative Settlement Statements and ends at 17:00 on Settlement Day + 7WD;

(c) Initial Settlement Statements shall be issued to all Market Participants in respect of their Units by 12:00 on BP + 5WD; and

(d) Invoices and Self Billing Invoices for Trading Payments and Charges shall be issued to all Market Participants in respect of their Units by 12:00 on BP+5 WD.

(2) Payment shall be in accordance with the following:

(a) each Indicative Settlement Statement, Initial Settlement Statement, Invoice and Self Billing Invoice shall be based on the data then available to the Market Operator at the time of its production;

(b) each Invoice and Self Billing Invoice shall include the amount of all applicable charges and payments and shall include any applicable VAT charges;

(c) each Debit Note (where applicable) shall include the amount of the Unsecured Bad Debt as applicable and shall include any applicable VAT charges;

(d) any invoiced Market Participant shall pay each Invoice in full without deduction, set-off or counterclaim (except as otherwise expressly provided for in this Market Code) by paying the amount due into the relevant Trading Clearing Account for full value by the Invoice Due Date; the Invoice Due Date is 12:00, three business days after the date of the Invoice; and

(e) the Market Operator shall, subject to the provisions of this Market Code, pay each Self Billing Invoice less any applicable Debit Note to any Market Participant who is a Creditor by paying the amount due from the Trading Clearing Account to the Market Creditor's designated bank account or bank accounts for full value by the Self Billing Invoice due date. The Self Billing Invoice due date is 17:00, four business days after the date of the Self Billing Invoice.

(3) The MO shall issue Invoices and Self Billing Invoices on the date appearing on the relevant Invoice or Self Billing Invoice as appropriate.

(4) If any Invoiced Market Participant fails to pay an Invoice in full, then the Market

Participant has a Shortfall and the MO shall forthwith make a Credit Call on the Market Participant's Posted Credit Cover for payment of the Shortfall. The MO shall identify the Billing Period to which the Shortfall relates in making any Credit Call. Default Interest shall accrue on any Shortfall and Unsecured Bad Debt in accordance with this Market Code.

(5) If the MO fails to pay pursuant to this Market Code (except as otherwise provided for in this Market Code) the full amount owing pursuant to a Self-Billing Invoice for full value by the Self-Billing Invoice Due Date, then Default Interest shall accrue on the amount outstanding in accordance with this Market Code.

(6) If any Market Participant fails to pay its Variable Market Operator Charge in accordance with this Market Code, the MO shall be entitled to make a Credit Call against the Posted Credit Cover of that Market Participant for payment of the amount of the overdue Variable Market Operator Charge. The MO shall ensure that any amounts recovered relating to the Variable Market Operator Charge and any Interest thereon are not paid into or commingled or combined in any way with the Trading Clearing Accounts and shall deposit the funds recovered as a result of such a Credit Call in the relevant Market Operator Charge Account. Any unpaid Market Operator Charge shall not and shall never be treated as a Shortfall or an Unsecured Bad Debt under this Market Code. The MO shall only be entitled to make a Credit Call in relation to overdue Variable Market Operator Charge where there is no Shortfall or Unsecured Bad Debt in respect of that Market Participant at that time or, if there is such Shortfall or Unsecured Bad Debt, only after the relevant Market Participant's Posted Credit Cover has been applied to meet the Shortfall or Unsecured Bad Debt in full.

(7) Despite the making of a Credit Call by the MO, if the Market Participant meets any Shortfall either through its own funds, its Posted Credit Cover, or a combination of the foregoing by 12:00 on the next Working Day after the Invoice Due Date then Settlement shall continue to proceed in accordance with this Market Code.

(8) If the Shortfall is not paid in full by 12:00 on the next Working Day after the Invoice Due Date, then:

(a) the amount of the Shortfall shall become an Unsecured Bad Debt for the purposes of this Market Code;

(b) the MO shall, where practicable, withhold, deduct or set off payment of any amount due pursuant to this Market Code to the Defaulting Participant until the amount of the Unsecured Bad Debt and any applicable Default Interest has been recovered in full.

(9) The Shortfall or the Unsecured Bad Debt as applicable shall be a debt owing by the Defaulting Participant to the MO as trustee and agent for all Market Participants beneficially interested therein as provided for in this Market Code and affected thereby pro-rated according to their individual respective proportionate entitlements in the Shortfall or the Unsecured Bad Debt concerned.

(10) Where a Market Participant has an Unsecured Bad Debt relating to any Trading Period(s) then, without prejudice to the MO's rights or obligations under this Market Code and notwithstanding any other provisions of this Market Code, the

MO shall procure that each Self Billing Invoice relating to the Trading Period(s) affected by such Unsecured Bad Debt shall be subject to the calculation of an adjustment by a reduction in the amount payable to each affected Creditor pro-rated in accordance with the individual respective proportionate entitlement of each such Market Creditor (excepting any Defaulting Participant, which would otherwise be a Creditor until the Unsecured Bad Debt and any applicable Default Interest has been recovered in full and any Self Billing Invoices issued to it whether or not relating to the Trading Periods concerned shall, until such event, be subject to the calculation of an adjustment by such amount or amounts up to the amount of the Unsecured Bad Debt and any applicable Default Interest, and relevant Debit Notes shall be issued to it) for payment of the relevant Unsecured Bad Debt, in accordance with this Market Code. The MO shall issue the appropriate adjustments to the Self Billing Invoices in the form of a Debit Note to each of the applicable Market Creditors ("Reduced Participants") and the Defaulting Participant within the timeframe of making the payment. The MO shall make payments to each Market Participant for the amount of the Self Billing Invoice less the applicable Debit Note.

(11) In the event that, for any Market Participant (an "Excess Participant"), the amount of the Debit Note would exceed the amount of the applicable Self Billing Invoice (a "Debit Note Excess"), the MO will make no payment to the Excess Participant in respect of that Billing Period. In addition, the Excess Participant shall, within two business days of the receipt of the relevant Debit Note, make a payment to the relevant Trading Clearing Account as applicable for the amount of the Debit Note Excess. The Market Operator shall calculate further reductions in the payments to each Market Creditor (other than the Excess Participant) by the amount of the Debit Note Excess applied pro-rata to their respective proportionate entitlements. The Market Operator shall issue a Debit Note to each Market Creditor showing the original reduction resulting from the Unsecured Bad Debt and, in respect of each Market Creditor other than the Excess Participant, the relevant proportion of the Debit Note Excess. In the event that upon receipt of an Excess Debit Note, a further Market Participant or Market Participants become Excess Participants, then the Market Operator shall repeat the process of calculation of reduction, and the resultant Debit Notes shall show the resultant reductions for each relevant Market Creditor, until the amount due in respect of each Self Billing Invoice net of a Debit Note or Excess Debit Note is positive or zero. Any Debit Note Excess which remains unpaid after the second Working Day shall be treated as a Shortfall.

(12) All Parties agree that the MO as trustee and agent shall be entitled and irrevocably authorise the MO, to take all necessary action against a Market Participant (or its Party where legally necessary) with an Unsecured Bad Debt to recover any Unsecured Bad Debt on behalf of Market Creditors consequently incurring loss and to deal with any recovered monies in accordance with this Market Code. Any such action of the MO to recover the Unsecured Bad Debt shall not be subject to the Dispute Resolution Process.

(13) The MO shall consult the MGC in relation to any plans for the pursuit of any Unsecured Bad Debt. The MO shall take into account the views of the MGC as to the most appropriate action to take against a Party in respect of the Unsecured Bad Debt of any of its Market Participants.

(14) Where the MO partially or fully recovers any Unsecured Bad Debt, the MO shall procure the payment of any such monies into the relevant Trading Clearing Account as applicable. Then the MO shall issue an appropriate Self Billing

Invoice to each Reduced Participant for an amount pro-rated to the individual respective proportionate entitlement of each Reduced Participant in the amount of the relevant Unsecured Bad Debt recovered relating to the Trading Periods concerned with the issue of the Self Billing Invoices for the then next immediate Billing Period (except the Defaulting Participant which would otherwise be a Market Creditor, where the Unsecured Bad Debt and any applicable Default Interest has not been fully recovered, until the Unsecured Bad Debt and any applicable Default Interest has been recovered in full). The MO shall pay each such Self Billing Invoice in accordance with this Market Code.

(15) If any payments made by the MO pursuant to any Self Billing Invoice and any Debit Note or otherwise pursuant to this Market Code to any Market Participant do not correspond exactly with their respective payment entitlements established in accordance with this Market Code, then (and the Parties and Market Participants agree and consent to the actions of the MO as set out as follows):

(a) in the case of overpayment by the MO, the Market Participant receiving any such overpayment shall pay back the difference between the amount of the payment received and the actual amount due to the MO on becoming aware of the overpayment or, in any event, in accordance with this Market Code on the issue of an Invoice by the MO to the Market Participant concerned for the relevant amount. Any Market Participant receiving any overpayment shall be obliged to notify the MO of this on becoming aware of such overpayment detailing, where possible, the amount and date of the overpayment and details of any Self Billing Invoice and any Debit Note pursuant to which it was made. As soon as the MO becomes aware of the overpayment, the MO shall issue an overpayment Invoice for the relevant amount and the Market Participant shall pay the Invoice in accordance with this Market Code;

(b) in the case of underpayment to any Market Participant by the MO not otherwise permitted pursuant to any other provision of this Market Code, the MO shall, in accordance with this Market Code, pay the difference between the amount of the payment received and the actual amount due, with Default Interest on that difference, to the Market Participant concerned on becoming aware of the underpayment or on being notified of the underpayment by the Market Participant concerned. The MO shall also issue an underpayment Self Billing Invoice to the Market Participant concerned for the relevant amount with Default Interest from the date of the underpayment until the date of payment of the relevant Self Billing Invoice. Any Market Participant receiving any underpayment shall notify the MO of this on becoming aware of such detailing, where possible, the amount and date of the underpayment and details of any Self Billing Invoice or Debit Note pursuant to which it was made.

(16) If any payments made by any Market Participant pursuant to any Invoice or otherwise pursuant to this Market Code do not correspond exactly with their respective payment obligations established in accordance with this Market Code, then (and the Parties and Market Participants agree and consent to the actions of the Market Operator as set out as follows):

(a) in the case of overpayment by the relevant Market Participant, the MO, unless otherwise restricted from doing so pursuant to this Market Code, shall pay back the difference between the amount of the payment remitted and

the actual amount due with Interest on that difference to the relevant Market Participant on becoming aware of the overpayment or on being notified of the overpayment by the Market Participant concerned (except where the Market Participant is a Defaulting Participant). The Market Operator shall then issue an overpayment Self Billing Invoice to the Market Participant concerned for the relevant amount with Interest from the date of the overpayment until the date of payment of the relevant Self Billing Invoice and pay it to the Market Participant in accordance with this Market Code. Any Market Participant making any overpayment shall notify the MO of this on becoming aware of such overpayment detailing, where possible, the amount and date of the overpayment and details of any Invoice pursuant to which it was made. The MO shall notify any Market Participant making an overpayment on becoming aware of such detailing, where possible, the amount and date of the overpayment and details of any Invoice pursuant to which it was made and issue an overpayment Self Billing Invoice for the relevant amount with Interest and shall pay the overpayment Self Billing Invoice in accordance with this Market Code.

(17) Any Market Participant making any underpayment or anticipating that it will be making an underpayment in respect of any Invoice shall notify the MO of this on becoming aware that full payment of any Invoice will not be made by the Invoice Due Date detailing, where possible, the amount and date of the underpayment and details of any Invoice to which it relates.

(18) All payments under this Section shall be made on the basis that a Market Participant shall only be entitled to claim reimbursement of an overpayment made by it pursuant to this Market Code if, and then only to the extent that, the aggregate amounts paid by the Market Participant in respect of the relevant Payment Due Date exceed the total amounts payable by that Market Participant to Creditors in respect of that Payment Due Date together with all amounts (if any) overdue from that Market Participant in respect of Billing Periods prior to the relevant Payment Due Date.

(19) If:

(a) a payment is received by the MO under a Letter of Credit after a sum has been withdrawn from a Collateral Reserve Account (where applicable) to make good (in whole or in part) a Shortfall or Unsecured Bad Debt (or any overdue Variable Market Operator Charge where applicable); and

(b) the aggregate of the amounts paid out of that Collateral Reserve Account and paid under the Letter of Credit in respect of a relevant Market Participant exceeds the Shortfall or Unsecured Bad Debt (or any overdue Variable Market Operator Charge where applicable),

then any excess paid over the Shortfall or Unsecured Bad Debt (or any overdue Variable Market Operator Charge where applicable) shall be remitted with any applicable Interest by the MO to the relevant Market Participant's Collateral Reserve Account.

(20) Where payments in respect of one or more Billing Period(s) are fully or partially outstanding, any payments made shall be, and shall be deemed to be, settled according to the following priority:

(a) first, in or towards settlement of amounts outstanding under this Market Code in respect of Timetabled Settlement Reruns (with the longest outstanding Billing Period to which a Timetabled Settlement Rerun relates being settled first); and

(b) secondly, in or towards settlement of amounts outstanding under this Market Code for Settlement with the longest outstanding Settlement being settled first.

15.3.5 Settlement Reruns

(1) The objective of all Settlement Reruns is to adjust the financial positions of Market Participants to reflect any differences between data used for Settlement and any updated data received.

(2) There will be one timetabled Settlement Rerun for each Billing Period. The Timetabled Settlement Rerun shall take place in the first month after the Billing Period (BP+1M). The MO shall publish the precise date of these in advance in the Settlement Calendar.

(3) The MO shall issue Settlement Rerun Statements to Market Participants for each of their registered Trading Units in the event of any Settlement Rerun arising from a Settlement Query, Data Query or Settlement Dispute.

(4) Each Settlement Rerun Statement will be in the same format as the Initial Settlement Statement and must include the data from the previous Settlement Statement relating to the relevant Billing Period and any revised values for all Trading Periods where these values are different.

(5) The MO shall be entitled to undertake Settlement Reruns as provided for in this Market Code in addition to the timetabled Settlement Reruns.

(6) When a Settlement Rerun results in any change to any amount payable under this Market Code, the MO shall issue adjusted Invoices and Self Billing Invoices and payment shall be made.

15.4 Queries to Settlement Data

15.4.1 Data Verification Period

(1) A Market Participant may raise a Data Query in respect of any Settlement Item or other elements of data which have an impact on the Settlement Items included in the Indicative Settlement Statement by giving notice to the MO during the Data Verification Period and will use reasonable endeavours to raise any such Data Query as early as possible within the Data Verification Period before the production and issue of the Initial Settlement Statement.

15.4.2 Data Queries

(1) The MO shall use reasonable endeavours to resolve all Data Queries within three business days of the issue of the Indicative Settlement Statement.

(2) The MO must resolve a Data Query within ten business days after the Data Query is filed. Where the MO requests any assistance from any Market

Participant to resolve a Data Query, that Market Participant shall promptly assist the MO in dealing with the Data Query concerned in order to facilitate the MO in meeting that timetable.

(3) The MO shall procure that (i) prices and market schedules will be recalculated for the relevant Settlement Day(s), and (ii) a Settlement Rerun shall then be undertaken in the event that the MO in resolving a Data Query determines that:

(a) Commercial Offer Data or Technical Offer Data has been applied incorrectly; or

(b) Actual Availability or Dispatch Quantity has been calculated incorrectly.

And that the correct application or calculation of any such amount would require it to change by more than the Settlement Recalculation Threshold.

(4) The Market Operator shall procure that (i) prices and market schedules will be recalculated for the relevant Settlement Day(s), and (ii) a Settlement Rerun shall then be undertaken in the event that the MO in resolving a Data Query determines that:

(a) Metered Energy has been applied incorrectly; or

(b) Market schedules has been calculated incorrectly,

and that the correct application or calculation of any such amount would require it to change by more than the Settlement Recalculation Threshold.

(5) If the MO does not resolve the Data Query within the period set, then it shall be deemed to give rise to a Settlement Dispute unless the Party concerned agrees to give the MO more time, such period not exceeding ten business days, to resolve the Data Query.

(6) Any change to Settlement resulting from the resolution by the MO of a Data Query that was not processed prior to the production of the Initial Settlement Statement for Trading Payments or Trading Charges shall fall into one of the two following categories:

(a) Change to Settlement Items with Low Materiality;

(b) Change to Settlement Items with High Materiality.

(7) The MO shall calculate the materiality of a change to Settlement Items, or other elements of data which have an impact on the Settlement Items, arising from the resolution of a Data Query or a Settlement Query by reference to a single Settlement Statement or Statement of Market Operator Charges as appropriate.

(8) In the event that there is a change to Settlement Items with Low Materiality, the MO shall procure that the revised corrected input data shall be used for the relevant Billing Period for which Final Settlement has not occurred, and Settlement shall then take place on the next timetabled Settlement Rerun.

(9) In the event that there is a change to Settlement Items with Low Materiality resolved after the final Timetabled Settlement Rerun, the MO shall procure that an additional Settlement Rerun for the relevant Billing Period shall then be

performed.

(10) In the event that there is a change to Settlement Items with High Materiality, the MO shall procure that the revised corrected input data shall be corrected for the relevant Billing Period and an additional Settlement Rerun for that Billing Period shall then be performed.

15.4.3 Settlement Queries

(1) Before raising a Settlement Dispute, a Market Participant must raise a Settlement Query in respect of those matters.

(2) A Market Participant may raise a Settlement Query in respect of the application of Metered Generation or the calculation of any of the following amounts:

(a) Metered Energy;

(b) Dispatch Instruction; or

(c) Actual Availability.

(3) Notwithstanding any other provision of this Market Code, a Market Participant may raise a Settlement Query in the event of any difference between a Settlement Item on the Indicative Settlement Statement and the same item on the Initial Settlement Statement, without the Market Participant having filed a Data Query in relation to that Settlement Item.

(4) Any changes to Settlement resulting from a Settlement Query on an Initial Settlement Statement, on an Invoice or on a Self-Billing Invoice, shall be placed into one of the two following categories:

(a) Change to Settlement Items with Low Materiality;

(b) Change to Settlement Items with High Materiality.

(5) In the event that there is a change to Settlement Items with Low Materiality, the MO shall procure that the revised corrected data will be used for the relevant Billing Period for which Final Settlement has not occurred, and Settlement shall then take place on the next Timetabled Settlement Rerun.

(6) The MO shall calculate the materiality of a change to Settlement Items arising from the resolution of a Settlement Query by reference to a single Energy Settlement Statement or statement of Market Operator Charges.

(7) In the event that there is a change to Settlement Items with Low Materiality resolved after the final Timetabled Settlement Rerun, the MO shall procure that an additional Settlement Rerun for the relevant Billing Period shall then be performed.

(8) In the event that there is a change to Settlement Items with High Materiality, the MO shall procure that the revised corrected data shall be used for the relevant Billing Period and a Settlement Rerun for that Settlement Day shall then be performed.

(9) A Market Participant is entitled to file a Settlement Query at any time before

17:00 on the fifth Working Day after the last Timetabled Settlement Rerun.

(10) The MO must resolve a Settlement Query within one month after the Settlement Query is filed with it. If the MO does not resolve the Settlement Query within that period, then it shall be deemed to give rise to a Settlement Dispute unless the Party concerned agrees to give the MO more time (not exceeding ten business days) to resolve the Settlement Query.

15.4.4 Settlement Disputes

(1) A Market Participant may only raise a Settlement Dispute in respect of an Initial Settlement Statement or an Invoice or a Self-Billing Invoice insofar as it relates to Trading Payments and Trading Charges after the Initial Settlement Statements for Trading Payments and Trading Charges are issued to relevant Market Participants.

(2) A Settlement Dispute shall also arise where the MO has not resolved a Data Query within the period provided for or where the MO has not resolved a Settlement Query within the period provided for.

(3) The MO shall procure that (i) price and market schedules shall be recalculated, and (ii) a Settlement Rerun will then be undertaken in the event that as a result of a Validated Dispute it is determined that:

(a) Offer Data has been applied incorrectly; or

(b) Dispatch Quantity has been calculated incorrectly.

and that the correct application or calculation of any such amount would require it to change by more than the Settlement Recalculation Threshold.

(4) Validated Disputes shall be placed into one of two categories:

(a) Validated Dispute with Low Materiality; or

(b) Validated Dispute with High Materiality.

(5) The MO shall calculate the materiality of a change to Settlement Items arising from the resolution of a Settlement Dispute by reference to a single Settlement Statement or statement of Market Operator Charges.

(6) In the event of a Validated Dispute with Low Materiality, the MO shall procure that the revised corrected data shall be used for the relevant Billing Period for which Final Settlement has not occurred, and Settlement shall then take place on the next Timetabled Settlement Rerun.

(7) In the event of a Validated Dispute with Low Materiality after the final Timetabled Settlement Rerun, the MO shall procure that an additional Settlement Rerun for the relevant Billing Period shall then be performed within the timeframe directed by the Dispute Resolution Board as a result of the Dispute Resolution Process.

(8) In the event of a Validated Dispute with High Materiality, the MO shall procure that the revised corrected data will be used for the relevant Settlement Day and an additional Settlement Rerun for the relevant Settlement Day shall then be performed within the timeframe directed by the Dispute Resolution Board as a

result of the Dispute Resolution Process.

15.5 Consequences

(1) Any payment due under this Market Code by any Party or Market Participant shall continue to be due and payable in accordance with its terms (including as to timing) notwithstanding (i) any Data Queries, Settlement Queries or Settlement Disputes in respect of such payments or (ii) any Shortfall, Unsecured Bad Debt, Default, Suspension, Deregistration or Termination arising in relation to any such Party or Market Participant.

(2) Where the resolution of a Data Query, Settlement Query or Settlement Dispute requires a Settlement Rerun, the MO will procure the carrying out of a Settlement Rerun in relation to the Settlement Day(s) that are the subject of the Data Query, Settlement Query or Settlement Dispute.

(3) Where the resolution of a Settlement Query or Settlement Dispute raised by a Market Participant requires a Settlement Rerun, the MO shall apply the result of that Settlement Rerun to all Market Participants.

15.6 Market Operator charge

(1) The MO shall apply charges to a Market Participant or BRP as per the approved tariff structure

15.7 Recovery of unsecured bad debt

(1) The MO shall procure that any amount of Unsecured Bad Debt is charged to all Market Participants (other than that those whose Default has given rise to the relevant Unsecured Bad Debt) in proportion to their total payments in a month.

15.8 Recovery of unpaid Market Operator charge

(1) The MO's claim against any Market Participant relating to any overdue Market Operator Charge shall rank pari passu with the claims of any other Party for any Shortfall or Unsecured Bad Debt.

15.9 Interest payment

(1) Any Party may claim interest, compounded Monthly from the first day following the due date of a Billing Period to date of payment, at a rate per annum equal to the prevailing prime overdraft rate charged by First National Bank of Southern Africa Limited against any Market Participant relating to any overdue payment.

15.10 Credit cover

(1) Each Market Participant shall comply with its obligation to provide the Required Credit Cover calculated in relation to it and notified to it by the MO in accordance with this Market Code.

(2) The Market Operator shall calculate the Required Credit Cover for each Market Participant as provided for in this section.

(3) Each Market Participant must maintain its Credit Cover with a Credit Cover Provider. The acceptable form of Credit Cover which Market Participants can post is a cash held deposit in a Collateral Reserve Account.

(4) A Credit Cover Provider shall be a Bank which must:

(a) hold a South African Banking Licence; or

(b) be an international bank that is authorised or approved by the relevant regulatory authority or is otherwise eligible to provide banking services in South Africa and under this Market Code.

(5) If a Market Participant's Credit Cover Provider is no longer qualified to issue or hold Credit Cover, the Market Participant shall re-post its Required Credit Cover with a Bank that satisfies the requirements in the previous paragraph within ten business days of the Market Participant's Credit Cover Provider ceasing to be qualified. This period shall not form part of the Settlement Risk Period.

(6) If the Market Operator, following a Credit Call, draws down any amounts from the Market Participant's Posted Credit Cover, such that the Posted Credit Cover no longer meets the Market Participant's notified Required Credit Cover, the Market Participant shall within two business days fully re-establish the Required Credit Cover and shall notify the MO on doing this.

(7) Credit Cover is subject to the following conditions:

(a) a Market Participant's Posted Credit Cover shall be available for draw down by the MO making a Credit Call on a Market Participant's Credit Cover Provider as provided for in this Market Code and shall continue to remain in place until such time as all amounts due in respect of the Market Participant concerned under this Market Code have been paid in full;

(b) the MO, but not any Party or Market Participant, has the right to deduct from or set off against a Market Participant any outstanding claims and liabilities of that Market Participant against any amounts owing pursuant to any Invoice under this Market Code relating to that Market Participant without the prior consent of any such Market Participant concerned;

(c) the Market Participant cannot reduce the amount of the Posted Credit Cover below the Required Credit Cover calculated by the MO and notified to the Market Participant in accordance with this Market Code;

(d) a Market Participant shall notify the MO at least one business day in advance of any change to its Posted Credit Cover;

(e) In the event of Termination of a Party or a Market Participant or Suspension or Deregistration of a Market Participant's Units, the Market Participant's then applicable Required Credit Cover shall remain in place in accordance with this Market Code until all amounts due by the Market Participant concerned under this Market Code have been paid in full, and further subject to the Fixed Credit Requirement specified in the relevant Termination Order, Voluntary Termination Consent Order or Deregistration Consent Order as applicable;

(f) in the event of the Deregistration of any of a Party's Trading Units, the

relevant Market Participant shall maintain the Fixed Credit Requirement in respect of that Trading Unit until the last Settlement Rerun for the Settlement Day equal to the day of Deregistration of each Trading Unit.

(8) The MO shall calculate the level of Required Credit Cover in accordance with this Market Code to cover a Market Participant's actual and potential payment liabilities in respect of its Units and participation in the Market (including, for the avoidance of doubt, the Variable Market Operator Charge) at any time. A Market Participant's Required Credit Cover shall be calculated to cover:

(a) its Actual Exposure (credit exposure resulting from Invoices that have been issued but not yet paid, and from amounts in Settlement Statements for which no Invoice has been issued); and

(b) its Undefined Potential Exposure (potential exposure resulting from accrued obligations that have not yet been included in any Settlement Statement and future obligations which would be likely to have been accrued before a Market Participant could be suspended from trading in the Pool for Default).

15.10.1 Parameters for the Determination of Required Credit Cover

(1) The MO shall make a report to the MGC at least 4 months before the start of the year proposing the parameters relating to the calculation of the Required Credit Cover, for application in the following year.

(2) The MO's report must set out any relevant research or analysis carried out by the MO and the justification for the specific values proposed. Such a report may, and shall if so requested by the MGC, include alternative values from those proposed and must set out the arguments for and against such alternatives.

(3) The MO shall publish the approved value(s) for each parameter within five business days of receipt of the MGC's determination or two months before the start of the year to which they shall apply whichever is the later.

15.10.2 Monitoring of Credit Cover

(1) The MO shall recalculate the Required Credit Cover, for each Market Participant every business day and shall send to each Market Participant its recalculation of that Market Participant's Required Credit Cover by 17:00 on that business day.

(2) Where the daily recalculation of Required Credit Cover determines that additional Credit Cover is necessary, the MO shall issue to the relevant Market Participant by 17:00 on the same business day a Credit Cover Increase Notice specifying the amount of additional Credit Cover required to be posted to satisfy its Required Credit Cover. The Market Participant shall post the additional necessary Credit Cover by 17:00 on the second Working Day thereafter.

(3) If a Market Participant has been issued with a Credit Cover Increase Notice in accordance with paragraph above, it may meet the terms of the Credit Cover Increase Notice by taking any combination of the following steps:

(a) taking steps to increase its Posted Credit Cover; or

(b) paying an outstanding Invoice early.

(4) The MO shall provide the Market Participant with a Warning Notice on any business day when its Warning Limit is reached. Each Market Participant shall be entitled to specify its own Warning Limit. However, the MGC shall set the maximum value for the Warning Limit in writing in advance of each Year to which it shall apply. This shall operate as the default Warning Limit for all Market Participants. Any Market Participant may require the MO to set a lower Warning Limit for it.

(5) Where a Market Participant reasonably expects that the total metered quantities with respect to its DSUs will increase by more than the Credit Cover Adjustment Trigger, then it shall inform the MO as soon as reasonably possible. Such a Market Participant shall be an adjusted Market Participant.

(6) Each adjusted Market Participant shall provide such additional information to the MO to enable the Market Operator to calculate revised values of Required Credit Cover.

15.10.3 Calculations for Required Credit Cover

(1) For the purposes of Credit Cover monitoring and calculations:

(a) a Market Participant is a New Market Participant from the commencement of their participation; and,

(b) a Market Participant ceases to be a New Market Participant when the length of time between the commencement of their participation and the last Trading Period covered in the most recent Settlement Statement issued for that Market Participant is greater than the length of time for the last full Billing Period.

(2) A Market Participant is an Adjusted Market Participant where the Market Participant notifies the MO of a change in circumstances. A Market Participant ceases to be an Adjusted Market Participant when the length of time between their notification and the last Trading Period covered in the most recent Settlement Statement issued for that Participant is greater than the length of time covered by the last full Billing Period.

(3) The calculation of the Required Credit Cover shall be based on the historical trading activity of the Market Participant.

(4) The MO shall calculate the Actual Supplier Exposure (ASEpf) for a Market Participant p in respect of its DSUs for the Actual Exposure Period f as follows:

$$ASE_{pf} = \sum_{u\ in\ p}\left(\sum_{i\ in\ f} SUM\ SALES\ from\ Inv + Settlement * UEF\right)$$

where:

ASE	⇒	Actual Supplier Exposure
p	⇒	Market Participant
u	⇒	Specific Trading Unit
i	⇒	Billing Period
f	⇒	Actual Exposure Period
UEF	⇒	Undefined Exposure Factor

15.10.4 Calling in Credit Cover

(1) Where the MO exercises its right to make a Credit Call on a Market Participant's Posted Credit Cover in accordance with this Market Code, the MO:

(a) shall be entitled to draw down on the Collateral Reserve Account;

(b) shall, as soon as reasonably practicable and notwithstanding any other provisions of this Market Code relating to Notices, notify the Market Participant in writing, using a rapid means of communication such as email or fax, that it has made the Credit Call on the Market Participant's Credit Cover Provider; and

(c) shall as soon as reasonably practicable after making such a Credit Call and issuing the notice, notify the Market Participant of the amount of Shortfall, the sums called from the Market Participant's Collateral Reserve Account and the Billing Period(s) concerned.

(2) Where the MO draws down any amounts from the Market Participant's Posted Credit Cover, the Market Participant shall, within two business days, fully re-establish at minimum the Required Credit Cover as calculated and notified to it.

15.11 Implementation of Administered Settlement

15.11.1 General Principles in the Event of Administered Settlement

(1) In implementing Administered Settlement, the MO shall, insofar as reasonably practicable, adopt a balance between the following principles:

(a) make use of all available data, and limit to the maximum extent practicable the use of estimated values;

(b) operate within the Settlement timescales, and be subject to the Settlement Query and Settlement Dispute provisions;

(c) seek results which are as close as possible to those which would have been calculated under the normal Settlement processes;

(d) obtain the prior written approval of the MGC for the detailed calculations and methodology used; and

(e) publish details of the calculations and methodology used as soon as practicable thereafter.

15.11.2 Estimation of Data in the Event of Administered Settlement

(1) To the extent necessary, the MO may estimate any Settlement data in the event of Administered Settlement.

15.11.3 Administered Settlement in the Event of Market Software System Failure

(1) In the event of System Failure for a Trading Day, the MO will calculate an Administered Schedule for all Trading Periods for the Trading Day.

(2) An Administered Schedule comprises Administered Prices for each Trading Period and Administered Quantities for each Trading Unit for each Trading Period.

(3) In creating an Administered Schedule, the objective of the MO shall be to reproduce, to the greatest degree practicable, the results that would have been determined by the scheduling algorithm.

(4) The price value for each Trading Period in the Trading Day will be set to equal the relevant Administered Price.

(5) The market schedules value for each Trading Unit for each Trading Period for the Trading Day will be set to equal the relevant Administered Quantity value.

(6) All Settlement calculations will be made using these values for Price and Administered Quantities.

(7) In the event of Administered Settlement resulting from System Failure, then once the System Failure is corrected, the MO shall procure that Settlement Reruns shall be undertaken as soon as reasonably possible in respect of the relevant Trading Periods and that revised Settlement Statements, Invoices and Self Billing Invoices in respect of the relevant Billing Period or Periods shall be issued to Market Participants.

15.11.4 Administered Settlement in the event of Electrical System Collapse

(1) In the event of Electrical System Collapse, Administered Settlement will be implemented using the following rules:

a) The scheduled and instructed energy for each Trading Unit shall be set at the metered quantity for the time of the Electrical System Collapse, while all reserve capacity qualifying shall be set at the scheduled capacity for each reserve category for each Trading Unit.

(2) After this, the SAWEM market algorithm shall run based on these data.

15.11.5 Management of Taxes and VAT

(1) The following paragraphs deal with the treatment of VAT for the purposes of this Market Code (if required).

(2) Notwithstanding the terms of the VAT Agreement all Market Participants shall indemnify and keep indemnified the MO, its officers, employees and agents against any liability which the Market Operator may incur as a result of the failure of any Market Participant to pay or account for any VAT due on any Invoice or Self Billing Invoice (or Debit Note where applicable).

(3) If any Market Participant shall fail to pay or account for any amount of VAT

payable or receivable by it, that Market Participant shall indemnify and keep indemnified each non-defaulting Market Participant (on an after tax basis, but taking account of any tax relief available to the relevant Market Participant, as the case may be) against any liability which such non-defaulting Market Participant or Market Participants shall incur consequently.

16 DATA AND IT MANAGEMENT

(1) The detailed procedures relating to the systems and the communication of data transactions by each Party to the MO and by the MO to one or more Parties and the rules and principles for the publication by the MO of data and information relating to the trading arrangements in the SAWEM will be maintained in a separate document published on the MO´s website.

(2) This document shall include inter alia:

a) Data communication channels, including the type(s) of channels, the requirements for both MO and Parties on maintaining these channel(s), the required IT security, support in testing and updating/upgrading these;

b) Data categories;

c) Daily procedures and timing;

d) The MO´s data storing of transactions;

e) Cyber security and data protection;

f) Procedures for managing failures;

g) How rounding is managed in the MO´s system; and

h) A generic provision of the specification of the algorithm.

(3) The MO is responsible for maintaining the required software and hardware up to date and delivering the required service to the Parties as set out in this Market Code.

(4) The IT infrastructure and software shall be subject to a bi-annual audit which the Market Operator will make available for public information.

ANNEXURE 1 – QUALIFYING CRITERIA

The qualifying criteria for a Market Participant are:

1) A Generator with a capacity threshold of 100kW and above, connected, or embedded in a customer network that is connected, at high-voltage or medium-voltage, which is licensed or registered by NERSA, may apply to be a Market Participant.
2) Any licensed Trader may apply to be a Market Participant.
3) A licensed Distributor or Transmission entity may apply to be a Market Participant.
4) An entity with an Import/Export license may apply to be a Market Participant.
5) A consumer connected at high-voltage or medium-voltage may apply to be a Market Participant.

ANNEXURE 2 – REGISTER OF MARKET CODE PARAMETERS

- Market Price Cap: R5 396.40
- Metering Accuracy Band: 5%
- Out of Merit Energy: 2000 MW
- Instantaneous Reserve Floor Price: R50/MWh
- Regulating Reserve Floor Price: R50/MWh
- Ten-Minute Reserve Floor Price: R0/MWh
- Materiality Threshold: R100 000